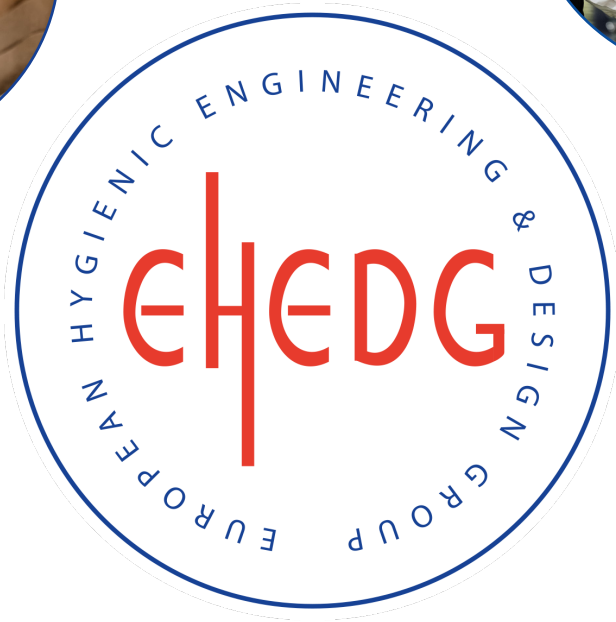
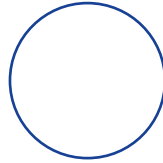


# EHEDG Yearbook

## 2025



European Hygienic Engineering & Design Group

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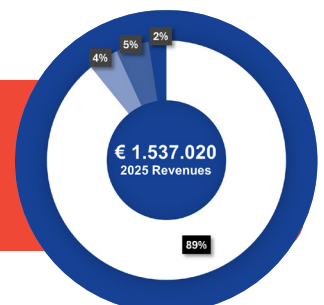
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# Director's message

Dear Reader,

Securing global food safety through innovative hygienic design remains at the core of everything we do at the European Hygienic Engineering & Design Group (EHEDG). Reflecting on our activities in 2025 and looking ahead to 2026, I am very proud of the many ways in which we continue to advance food safety and quality. From our Guidelines, Training & Education, to Testing & Certification and our regional outreach. EHEDG supports a broad spectrum of stakeholders to uphold the highest standards of hygiene and quality, protecting public health and strengthening trust across the entire food processing chain.

The need for clear and practical guidance on hygienic design continues to grow across the food industry. EHEDG responds to this demand through focused initiatives and collaborative efforts that translate expertise into applicable solutions. When we reflect on 2025, it's great to see that our commitment and drive to do things well and making a real impact is still as strong as ever before.

In 2025, collaboration within our Working Groups remained a cornerstone of our progress. With the appointment of Patrick Wouters as our new Development Director we strengthened our focus on streamlining

processes, which is already reflected in the steady progress of our guideline publications. During the Chair Working Group Day(s), we brought together leadership to align objectives and exchange insights. Strengthen coordination across projects, via Edward de Bono's 'Thinking Hats' approach.

Later in the year, in Krakow (Poland), the Full Working Group Day further expanded this collaboration, enabling deeper engagement among members and reinforcing our shared ambition to continuously improve both the quality and efficiency of our Guideline development process, which will be reflected in 2026 through the introduction of a new stage gated guideline development process. These interactions continue to be essential in maintaining EHEDG's strong technical foundation.

Over the past year, EHEDG has demonstrated a continued focus on strengthening and expanding its Guideline portfolio. We published seven new and revised guidelines providing guidance to ensure hygiene, safety and operational integrity across food and beverage production, covering aspects from equipment design and processing methods to water management and on-site construction activities. Addressing topics such as sampling systems, centrifuges, building design and hygienic design principles. These contributions ensure that EHEDG remains a globally recognised reference for hygienic design, supporting the industry with up-to-date and practical guidance.



EHEDG Head Office Team

In parallel, our existing Working Groups made important progress in developing new areas of expertise, as well as foreign bodies, cleaning and disinfection and chocolate manufacturing, addressing both ongoing and emerging challenges within the industry. Further in this yearbook you will find articles from the Working Group chairs of our Lubricants, Elastomeric Seals, Meat Processing, Integrations and Pumps Working Groups.

Additionally, the publication of a White Paper on sustainability marked an important step in addressing the intersection between hygienic design and sustainable food production.

EHEDG's global presence continued to expand in 2025. A major highlight was the successful organisation of the first EHEDG LatAm Congress in Mexico City, representing a significant milestone in strengthening our footprint in the Americas and fostering new international collaborations. Regional engagement was further reinforced through activities in Europe, the Middle East, Africa and Asia, including training sessions, events and the establishment of new regional initiatives such as the Gulf Regional Section (the Gulf Collaborating Council countries and Egypt).

Our Training & Education activities continued to grow in both reach and relevance. Hands-on trainings and regional sessions, from Mexico to New Zealand and from Denmark to South Africa and beyond, enabled professionals worldwide to deepen their knowledge of hygienic design principles. At the same time, we took further steps in the development of our Online Examination Tool, with the project kicking off at the beginning of the year. This initiative will play a key role in harmonising knowledge assessment and supporting the professional development of hygienic design experts globally.

EHEDG also maintained a strong presence at leading international events and exhibitions, including contributions to major industry gatherings such as ProPak Asia, PPMA, DrinkTec and others. These engagements, alongside our participation in conferences and summits, continue to strengthen our role as a thought leader and facilitate knowledge exchange across the food industry.

A key highlight of the year was once again our EHEDG Online Congress 2025, which brought together a global audience in an accessible and interactive format. In addition, initiatives such as the EYE Mentorship Programme Midway Event and collaborations with partner organisations demonstrated our ongoing commitment to engaging and supporting the next generation of professionals in hygienic design.

Our communication efforts, particularly through digital channels, have further enhanced our ability to connect with a wider audience. Increased visibility and engagement, not only through the before mentioned online congress but also through 10 different webinars,

enable us to share knowledge, promote best practices and amplify the impact of our work across regions and sectors.

Promoting global harmonisation in hygienic design continues to require strong partnerships. Our collaboration with organisations such as 3-A SSI, GFSI, BRCS, FSSC, IFS, CEN and ISO remains essential in aligning guidelines, standards and advancing food safety worldwide. Likewise, our partnerships with EF-FoST, CIFST and IAFP provide valuable platforms for knowledge exchange and joint initiatives.

Looking ahead to 2026, EHEDG aims to build on this strong momentum and continue delivering value to the global food industry. I would like to highlight a number of key initiatives for the coming year:

- Strengthening EHEDG's market position and membership value, amongst others through member company landing pages, with search and filter functionalities,
- The development of new structured education, our Summer School pilot and e-learning programmes linked to our guidelines and further developments of our online central examination,
- The improvement of the governance, transparency and systems in certification,
- A standardised guideline development process and expanding topic coverage, with already six new topics proposed and approved,
- Further expanding our regional presence in strategic global markets, plus the introduction of regional landing pages in local languages,
- Increased collaboration with food safety management systems certification program owners and regulators,
- One of the year's premier events, the EHEDG World Congress, will take place in Vienna on October 7 and 8.

In summary, the progress we achieved in 2025, from the expansion of our Guideline portfolio and global events to the development of new tools and growing international engagement, is the direct result of the dedication and collaboration of our Regional Sections, Working Groups, (sub-)committees, our Foundation and Advisory Board and the marvellous team at EHEDG head office in Amsterdam. This collective effort drives our mission: to protect global food safety and quality through leadership in hygienic engineering and design.

As we look toward the future, EHEDG remains committed to support the food industry in addressing evolving challenges and opportunities. Thank you for being part of this journey ... we look forward to achieving new milestones together.

Kind regards,  
Adwy van den Berg  
Director, EHEDG

# Head Office Team



**Adwy van den Berg**  
*Director*



**Patrick Wouters**  
*Development Director*



**Cristina Annoni**  
*Communications  
Manager*



**Joshua Rodulfo**  
*Marketing & Projects  
Manager*



**Karlijn Faber**  
*Certification &  
Membership*



**Valeriia Seliverst**  
*Membership & Events  
Manager*



**Vanessa Amani**  
*Portfolio Manager*



**Brad de Souza**  
*Business Analyst*



**Joost Cras**  
*Finance Manager*



**Martina Tacconi**  
*Junior Communication  
Manager*



**Berta Szombati**  
*Digital Marketing &  
Communication intern*

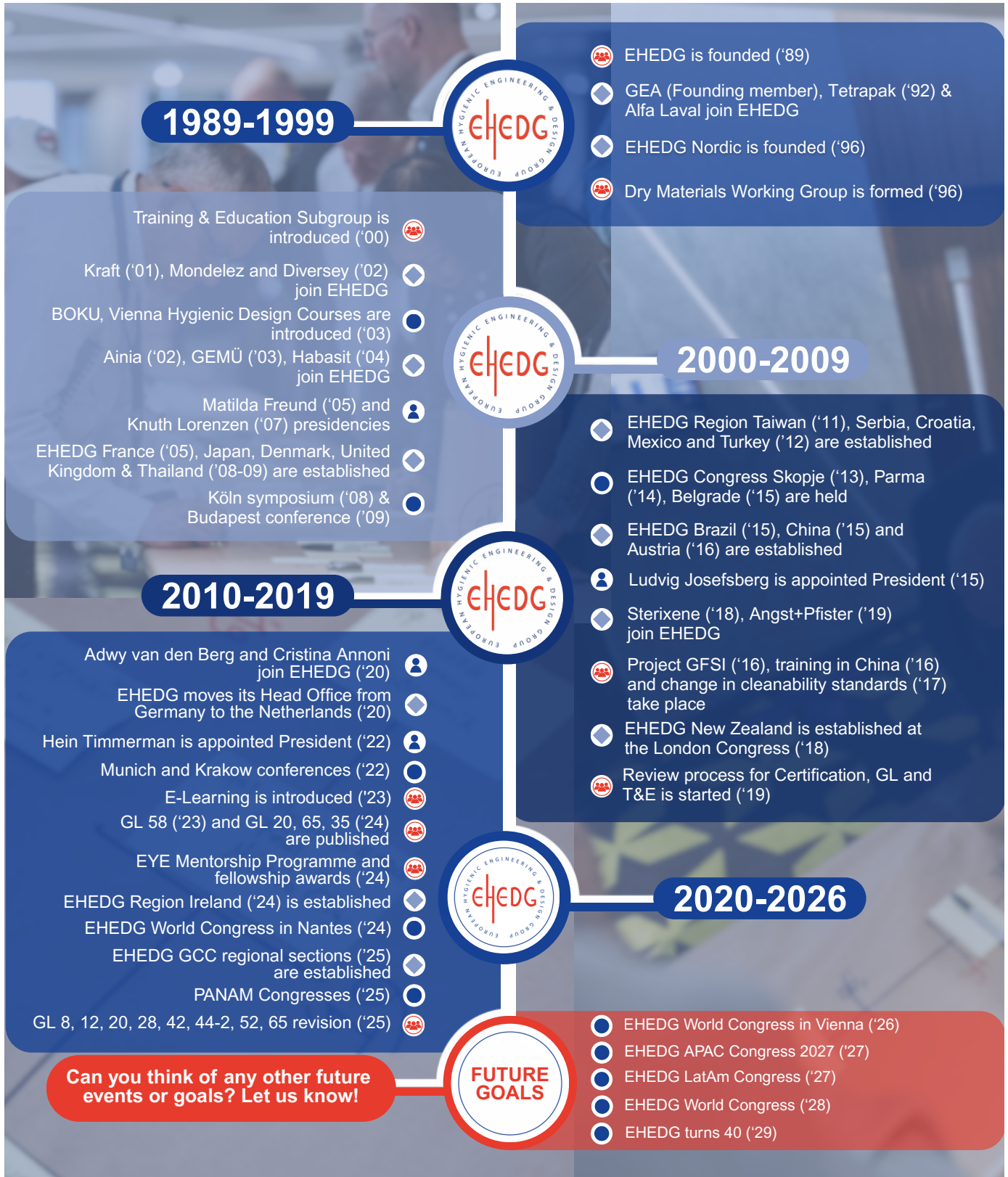
Visit [www.ehedg.org/head\\_office](http://www.ehedg.org/head_office)  
For contact details and full description of roles

# EHEDG TIMELINE

We asked all Plenary Meeting and Working Group Day participants in Krakow to write down some of their favourite memories from each decade of EHEDG.

Here are some highlights chosen by members in Krakow.

-  New members & Regions
-  Conferences & Events
-  Working groups & Guidelines
-  People



## 1989-1999

-  Training & Education Subgroup is introduced ('00)
-  Kraft ('01), Mondelez and Diversey ('02) join EHEDG
-  BOKU, Vienna Hygienic Design Courses are introduced ('03)
-  Ainia ('02), GEMÜ ('03), Habasit ('04) join EHEDG
-  Matilda Freund ('05) and Knuth Lorenzen ('07) presidencies
-  EHEDG France ('05), Japan, Denmark, United Kingdom & Thailand ('08-09) are established
-  Köln symposium ('08) & Budapest conference ('09)






-  EHEDG is founded ('89)
-  GEA (Founding member), Tetrapak ('92) & Alfa Laval join EHEDG
-  EHEDG Nordic is founded ('96)
-  Dry Materials Working Group is formed ('96)

## 2000-2009

-  Adwy van den Berg and Cristina Annoni join EHEDG ('20)
-  EHEDG moves its Head Office from Germany to the Netherlands ('20)
-  Hein Timmerman is appointed President ('22)
-  Munich and Krakow conferences ('22)
-  E-Learning is introduced ('23)
-  GL 58 ('23) and GL 20, 65, 35 ('24) are published
-  EYE Mentorship Programme and fellowship awards ('24)
-  EHEDG Region Ireland ('24) is established
-  EHEDG World Congress in Nantes ('24)
-  EHEDG GCC regional sections ('25) are established
-  PANAM Congresses ('25)
-  GL 8, 12, 20, 28, 42, 44-2, 52, 65 revision ('25)

-  EHEDG Region Taiwan ('11), Serbia, Croatia, Mexico and Turkey ('12) are established
-  EHEDG Congress Skopje ('13), Parma ('14), Belgrade ('15) are held
-  EHEDG Brazil ('15), China ('15) and Austria ('16) are established
-  Ludvig Josefsberg is appointed President ('15)
-  Sterixene ('18), Angst+Pfister ('19) join EHEDG
-  Project GFSI ('16), training in China ('16) and change in cleanability standards ('17) take place
-  EHEDG New Zealand is established at the London Congress ('18)
-  Review process for Certification, GL and T&E is started ('19)

## 2020-2026

-  EHEDG World Congress in Vienna ('26)
-  EHEDG APAC Congress 2027 ('27)
-  EHEDG LatAm Congress ('27)
-  EHEDG World Congress ('28)
-  EHEDG turns 40 ('29)

Can you think of any other future events or goals? Let us know!

## FUTURE GOALS

# 2025 Was a Year of Progress and Strategic Growth for EHEDG

## EHEDG Foundation Board

### Reflecting on a Year of Achievements

Another year has swiftly passed, marked by numerous successful initiatives at EHEDG. The team in Amsterdam has taken significant strides in professionalisation, most notably with the appointment of Patrick Wouters, a former EHEDG Vice-President with longstanding commitment and experience, as the new Development Director. Alongside him, Joost Cras has joined as the new Financial Manager. This dedicated team is fully committed to accelerating the delivery of value to our members.

Together, we uphold EHEDG's mission by actively contributing to the development of guidelines, products and training programmes. Our efforts also extend to expanding the global network and strengthening collaboration with key stakeholders. In 2025, EHEDG continues to experience robust growth, empowering members with knowledge that supports both food safety and quality. These resources enable cost-effective and sustainable manufacturing practices worldwide.

### Global Leadership in Hygienic Engineering

In 2025, EHEDG further cemented its position as the leading global reference community for hygienic engineering. The organisation connects expertise from across the globe, consistently raising standards for safe food manufacturing. EHEDG plays a vital role in helping the industry interpret requirements and transform them into practical, verifiable solutions. The organisation's impact has extended across regions and sectors - not only through the publication and enhancement of guidance, but also by emphasising effective implementation. This focus supports equipment manufacturers, food producers and service providers in consistently applying hygienic design principles, efficiently and at scale.

### Fostering Collaboration and Knowledge Exchange

A hallmark of EHEDG's progress in 2025 has been its ability to bring together a diverse network of experts and partners, ranging from multinational corporations to local stakeholders. Through these collaborations, EHEDG has broadened knowledge exchange and enhanced alignment between regulatory expectations, engineering innovations and operational realities. This spirit of cooperation underscores EHEDG's distinctive value: driving improvements in food safety, sustainability and production resilience through collective engineering excellence.



## Initiatives Shaping the Future

The initiatives that best illustrate EHEDG's direction for the coming years are those with both international scope and practical applicability. These include intensifying efforts around training and competence development, widening access to guidance and certification tools and forging stronger links between regions at varying stages of hygienic design maturity. Additionally, EHEDG's trajectory is increasingly influenced by emerging priorities such as digitalisation, environmental sustainability and the integration of hygienic design within broader ESG and risk management frameworks.

## Looking Ahead: Consolidated Leadership and Purposeful Evolution

Collectively, 2025 represented a year of consolidated leadership and intentional evolution for EHEDG. The organisation has strengthened its influence in the present while laying the foundation for even greater, measurable impact in the years to come. I am immensely proud to support EHEDG as your President and look forward to the continued progress and achievements we will accomplish together.

*Hein Timmerman, EHEDG President and Global Sector Specialist - F&B, (Diversey - A Solenis Company)*

## From Technical Expertise to Strategic Perspective: Lessons from My First Year as Vice-President

Having served EHEDG for many years as a member of the Guidelines Sub-Committee, a Working Group chair, a board member of the German Section and an authorised trainer, I thought I knew this organisation inside out. However, my first year as Vice-President has provided a much broader strategic perspective.

The most vital lesson I've learnt - and a powerful reminder - is that while our offerings, such as guidelines, certification and training are our products, voluntary engagement is our engine. EHEDG's success depends entirely on the passion of members who share their expertise. My focus has shifted from the 'how' of ensuring hygienic design to the 'why' of our collective mission.

In the coming years, I will use this insight to:

- Empower our members: prioritising tools and practices that help our community excel in food hygiene.
- Drive strategic alignment: bridging the gap between our grassroots technical brilliance and our high-level organisational goals.
- Navigate new trends: ensuring EHEDG expands its reach to meet the evolving demands of the global food industry.

It is thrilling to help steer our growth. I am committed to ensuring that, as EHEDG scales, we remain focused, agile and more connected than ever.



*Dirk Nikoleiski, Consultant, EHEDG Vice-President*



### Financial Stability, Strategic Investment and Supporting EHEDG's Mission

It is difficult to believe that another year has passed already. It has been busy over the last twelve months with many EHEDG activities. I am happy to report that the financial situation at EHEDG is still strong. Thank you, as members, for placing your trust in me as Treasurer and for your work to support the success of EHEDG.

As I have communicated before, my priorities are to provide increased transparency of our processes and to promote responsible spending so that we can support the aspirations of our members in a fair and equitable manner. Our renewed financial processes have helped us better predict spending and manage the budget accordingly. I would like to take the opportunity to welcome Joost Cras to the Head office team as Financial Manager. Joost is responsible for managing the finances of EHEDG, which includes supporting the budgeting and planning processes as well

as managing the invoicing and spending. He brings much needed financial expertise to the team.

I mentioned that we had a busy year. While we continue to support the existing activities in the areas of Guideline development, Certification and Testing, Regional Sections and Training and Education teams as before, we had the opportunity to fund some newer initiatives that will hopefully help secure the future of EHEDG.

For example, we are investing in our digital capabilities by developing more on-line training and we are centralising our training examinations. This is important as we are growing globally and want to ensure that we are consistent as well as maintaining our standards. We are also investing in the scientists of the future. We established the EYE Mentoring Programme, working with EFFoST, which pairs young professionals with experts in food science and technology and we are funding student awards at hygiene conferences. In addition, we are currently sponsoring two PhD students whose research will result in publications in hygienic design. Another area where we are investing is in the creation of a digital networking platform for our members and we are investigating how we can partner with more external organisations. These activities help drive diversity in the EHEDG membership which, in turn, strengthens our Guidelines and other offerings.

Hygienic design is a recognised pre-requisite programme in HACCP because emphasis on design is important to ensure that equipment is hygienically fit for purpose. In 2024, EFSA recognised that “poor hygienic equipment design is the most crucial risk factor for persistent pathogens in food production”. Our mission at EHEDG is to provide guidance on hygienic design and engineering to ensure food safety and quality. There is still a lot of work to do, but EHEDG, with its strong and experienced membership, is uniquely positioned to deliver our mission. We hope that our investment in modernising our deliverables means that we will be well positioned to continue to positively impact the world's food supply.

So, in closing, I would again like to thank all the members for generously sharing their time and knowledge to further the goal of safe food for all.

**Matilda Freund, PhD, Treasurer, EHEDG**



# Dirk Nikoleiski

## Vice-President

### Since 2025

#### Could you please introduce yourself and your background?

Hello, my name is Dirk. My educational background is in Food Engineering and I've spent over 35 years working in the food industry, a journey that has taken me from hands-on roles in manufacturing to leading global initiatives in food safety and hygienic design. I've worked with Kraft Foods, Mondelez International, and Commercial Food Sanitation. In the latter role, I supported manufacturers across the EMEA region through consulting and training. Today, I continue this work as an independent food hygiene consultant.

Over the years, I've contributed to industry guidelines, shared knowledge through lectures and publications, and actively supported EHEDG, including serving as a board member in Germany and as Guideline Cluster Lead for Cleaning & Disinfection. I also conduct advanced training courses and workshops as an EHEDG Authorised Trainer. What motivates me most is helping teams grow and seeing hygiene concepts come to life in real-world applications.

#### What motivated you to join the EHEDG Foundation Board and how has your first year compared to your expectations?

Joining the EHEDG Foundation Board felt like a natural step after many years of active involvement and a deep personal commitment to hygienic design. I've always admired how the organisation has evolved and the impact it continues to make across the industry globally.

My first year on the Board has been a valuable learning experience, offering deeper insight into the broad range of activities and strategic priorities that I hadn't been directly involved in before. While it took some time to settle in, I'm looking forward to contributing more actively and supporting EHEDG's mission and strategic goals in meaningful ways.

#### How do you see EHEDG's role evolving to better support industry needs in the future?

Historically, hygienic design was viewed primarily through a technical lens, focused first on equipment, and later on infrastructure. EHEDG played a key role in shaping these practices, many of which have become part of formal standards. Today, we understand that hygienic design is a holistic, risk-based approach that supports not only food safety, but also quality, operational efficiency and sustainability.

To meet evolving industry needs, EHEDG can broaden its impact by fostering cross-functional understanding, developing targeted training for diverse stakeholders, including auditors, and promoting collaboration across disciplines. Hygienic design should be seen not just as a compliance requirement, but as a strategic enabler of hygienic performance and business success.

#### What are your personal goals for your second year on the Board? Are there specific areas or projects within EHEDG that you would like to help further develop?

In my second year on the EHEDG Foundation Board, my personal goal is to find the right balance between private life, consultancy work and my engagement with EHEDG — which, as many know, has grown into a dynamic and multifaceted organisation. While I'd love to be involved in every detail, I've come to accept that even with the best intentions, there are only so many hours in a day!

What I'm truly passionate about is continuing to advance hygienic design risk management and supporting the development of training programmes that reach cross-functional teams — including those who audit, design, operate and maintain food production environments. I believe EHEDG has a unique opportunity to make hygienic design not just a technical discipline, but a shared mindset across the industry.



***Dirk Nikoleiski, Consultant, EHEDG Vice-President, Chair of the EHEDG Working Group 'Cleaning & Disinfection'***

# Advisory Board Member

## *Steve Arnold*

### **Could you please introduce yourself and your background?**

Hello, I'm Steve Arnold from SMC Corporation and I'm the Food Standards Manager for Europe and North America. My role is to educate our sales team, end users and OEM customers on the importance of hygienic design and food safety.

### **What motivated you to join the EHEDG Advisory Board and how has your first year compared to your expectations?**

I'd been involved with EHEDG UK and Ireland for many years and my move to the Food Standards role at SMC felt like it would be a natural thing to be involved with. My first year has been interesting, learning how the Advisory Board functions and understanding the long-term strategy of the ExCo.

### **Which of your contributions or achievements this year do you believe had the greatest impact on EHEDG's work and how will they support future progress?**

I think this year the Advisory Board has started to ensure that EHEDG is accountable to its membership and is developing tools and resources that are of value to that membership. We're keen that EHEDG is seen as the global resource for all manner of hygienic design and food safety issues with dynamic and engaging resources.

### **What are your personal goals for your term on the Board? Are there specific areas or projects within EHEDG that you would like to help further develop?**

I'm keen to ensure that EHEDG provides for its membership; by that, I mean services and value that both end user and OEMs feel justifies their membership fee. I'd like to see a white paper written on the benefits of hygienic design from a 'total cost of ownership' point of view.





**Steve Arnold**, Food Standards Manager for Europe and North America, (SMC Corporation), EHEDG Advisory Board Member, EHEDG UK Treasurer

# Elastomeric Seals

## Reactivated Working Group



### Could you please introduce yourself and your background?

My name is Eva Fleischmann. I currently work as an Application Engineer for Freudenberg Process Seals. Full disclosure right from the beginning: I'm not an engineer by training – I'm actually a chemist.

So, how did I end up in an engineering role? I studied chemistry and was always fascinated by how it enables us to create something new – and even better when it turns out to be useful. That's why I pursued a PhD in polymer chemistry with a focus on material science, researching materials that can be used as artificial muscles.

After graduation, I joined Freudenberg as a material developer for elastomeric seals. Elastomers are a highly versatile class of materials, with properties ranging from highly damping to extremely elastic. They can withstand both high dynamic and high static loads. Ultimately, it comes down to the material developer to engineer the elastomer's composition to achieve the desired properties.

In my current position, I use my background to advise equipment manufacturers and users on selecting the most suitable sealing material for their applications. The goal is to ensure food safety, where the seal shouldn't be an obstacle, but part of the solution.

That's why Freudenberg has been a long-time member of EHEDG. I joined the Working Group for Guideline 48 on Elastomeric Seals last year. After my colleague Angelika Ruhm stepped down as Chair of the group, I was honoured to be voted in as her successor.

**What motivated you to take on the role of Chair for this Working Group? Are there any recent trends or developments that you're particularly excited about?**

Taking on the role of Chair was an easy decision for several reasons. First, I've always enjoyed working in diverse environments, it's the best way to learn and expand your perspective. As a chemist, that means learning to speak the same language as the many engineers in the group.

Second, I believe that Guideline 48 is a fantastic way to make essential knowledge about hygienic elastomeric seal design accessible to everyone. Seals are often invisible but always essential. Choosing the wrong seal type or material can lead to leakage, contamination or hygiene issues. I'm excited that our group brings together such a breadth of expertise to create an accessible and soon-to-be-updated guideline.

**In 2023, this Working Group published EHEDG Guideline 48. What led to the decision to reactivate the group?**

We came together last year to assess whether a revision was needed. The initial consensus was that the guideline was already strong, only minor tweaks were needed. But once you gather a group of motivated experts, the discussion naturally evolves. While nothing essential was missing, new members brought fresh ideas and long-time members contributed their deep experience.

We wanted the updated guideline to reflect this combined knowledge. Starting early in the revision process helps ensure we won't need to compromise on quality. We're all looking forward to the new version.

**Looking ahead, what major challenges do you see for the industry and how can the Working Group help address them?**

As a chemist, I'm very aware of the continuous changes in chemical regulations and food contact material legislation. These directly affect which sealing materials can be safely used in food production. While these changes impact raw material and seal manufacturers first, equipment producers and food companies must also be vigilant.

It's not just about compliance, it's about improving food safety and quality. Although Guideline 48 focuses on hygienic design and cleanability, we also want to highlight the fact that elastomers are a unique and diverse class of materials, very different from metals or plastics.

For example, two black EPDM O-rings may look identical but can have vastly different properties, especially in terms of food contact safety. Our goal is to demystify elastomeric seals and materials, making them more accessible to everyone who relies on this guideline.



***Eva Fleischmann, Application Engineer (Freudenberg Process Seals), Chair of the EHEDG Working Group 'Elastomeric Seals'***



# Hygienic Integration Systems

## Reactivated Working Group

### Could you briefly introduce yourselves and your backgrounds?

**Roland Cocker:** Hello, my name is Roland. I run my own company, Cocker Consulting Limited, which originally started in the Netherlands. My background relevant to this guideline is that I have experience in building and troubleshooting hygienic systems for the food, biotechnology, pharmaceutical and (even) chemical industries. At present, much of my business is as an expert witness concerning litigation of claims in the food industry or foodservice, in which my training and experience both in technical (microbiology and engineering) and procedural (quality and safety management-systems) aspects has proved valuable. Witnessing how things have gone wrong technically and organisationally is a fertile source of insights in how to avoid these often painful and expensive mistakes!

**Carla Lima Gomes:** Hello, I'm Carla. I'm from Brazil and hold a degree in Chemical Engineering and a Master's in the Food & Beverage Industry. I began my career as a Quality Coordinator at Cutrale, an orange juice processor. Later, I joined Tetra Pak's Processing Systems division, where I held several roles including Processing Engineer, Trainer, Specialist for Heat Exchangers and Flow Handling, Maintenance Coordinator, and Project Sales Manager.

As a chemical engineer, I've always been fascinated by cleaning solutions, particularly the optimisation of industrial cleaning processes and the prevention of biofilm formation. Over time, I realised that many of these issues were linked to poor hygienic design. This led me to specialise as a consultant and trainer in hygienic design.

### What key challenges in the industry have emerged or persisted since the last edition of Guideline 34 (2020), that prompted the reactivation of the Working Group?

**Roland:** The update of Guideline 34 is part of our regular revision cycle, but it's more than just a routine refresh. This document is widely regarded as a kind of 'Swiss Army knife', a playbook for designers and builders working on hygienic applications. Its value lies in helping prevent costly surprises, performance failures, delays and overruns in hygienic design projects.

Since the last edition in 2020, there has been greater industry focus on integrating hygienic design earlier in projects and more interest from global contributors, this time we have participation from Asia and the Americas in our Working Group. In the meanwhile, new related guidelines have been released, such as Guideline 58, 'Hygienic Design Risk Management' and Guideline 44 - Part 2, 'Managing of Building Work and Equipment Installation/Removal During Food Production'. Updating Guideline 34 ensures consistency with these documents and incorporates broader perspectives from around the world.

### How is the Working Group approaching the refinement of the V-model, particularly in terms of improving its value as a communication tool for stakeholders?

**Carla:** The V-model is a central feature of Guideline 34 and this revision is giving us the opportunity to refine it further. In practice, the model helps stakeholders look beyond production capacity alone, which is often the main driver in new projects, and to integrate hygienic design requirements right from the start.

The V-model clarifies the link between user requirements, functional specifications and design criteria and then mirrors these at the verification and validation stages. By embedding hygienic design into this structured approach, projects are more efficient, require fewer revisions and provide stronger assurance of food safety compliance.

A challenge for the group has been to balance completeness with clarity. If we tried to include every single requirement in one graphic, it would quickly become overwhelming. We've therefore focused on keeping the model simple and usable, while considering whether different tailored versions might help address specific subsets of requirements for different audiences.

**How do you see Guideline 34 interacting with more recent documents like Guideline 58 on Risk Assessment? Are there opportunities for better alignment or cross-referencing?**

**Roland:** Absolutely. Guideline 34 is designed as a foundational reference for hygienic design, it establishes the framework for managing requirements and specifications across the project lifecycle. Guideline 58 provides a structured way to assess and manage risk, while guideline 44 Part 2 offers practical guidance for construction and equipment installation in operational environments.

As part of the current update, we are making sure that Guideline 34 aligns smoothly with these newer documents, with clear cross-references. This helps users navigate between them and apply the right tools at the right time. Ultimately, our goal is to strengthen the consistency and usability of the EHEDG knowledge base for engineers, designers, and operators worldwide.

**Roland Cocker, Owner (Cocker Consulting), Chair of the EHEDG Working Group 'Hygienic Integration Systems' & 'Utilities', EHEDG Authorised Trainer**

**Carla Lima Gomes, Hygienic Design Consultant (Flavour Food Consulting), member of the EHEDG Working Group 'Hygienic Integration Systems' & 'Maintenance'**





# Lubricants

## Reactivated Working Group

### Could you briefly introduce yourself and your background?

My name is Taco Mets and I studied mechanical engineering. I started my career in machine and component design and I have been working at Van Meeuwen for almost 36 years. I currently serve as the Technical Director. Our company supplies specialty lubricants as well as lubricant-related maintenance and software to a wide range of industries, including the food sector.

We were one of the first companies to draw attention to food-grade lubricants back in the 1980s. At the time, many did not yet recognise their importance, but due to a number of contamination incidents, the need for food-grade solutions became more apparent. Thanks to our experience in challenging operating environments, from wet and humid to extremely dry and dusty, we have been able to continuously develop and improve our products. Initially, replacing traditional lubricants with food-grade ones was challenging due to restrictions on the types of base oils, additives and thickeners that could be used.

Today however, it is possible to completely switch over to H1-registered food-grade lubricants for all applications. In fact, more companies are now moving away from using food-grade lubricants only in critical areas and are gradually switching their entire production to these products.

### What are some of the most common contamination risks associated with food-grade lubricants in real production environments?

Contamination risks fall into three main categories:

1. mechanical and procedural failures, 2. deterioration of lubricants during operation and 3. inadequate lubrication practices.

**1. Mechanical and procedural failures:** Leakages from bearings, hydraulic equipment and circulating oil systems are common sources of contamination. Over-lubrication can lead to drips or splashes reaching food products, especially in open lubrication points.

**2. Deterioration of lubricants during operation:** Lubricants can deteriorate or get contaminated with other conventional lubricants. If a leak occurs under these conditions, there is a heightened risk of food contamination.

**3. Inadequate lubrication practices:** Overfilling of reservoirs or improper filling procedures can result in leakage. When machines are started after maintenance, over-greasing of bearings can cause excess lubricant to be pushed out and come into contact with food.

**What technical developments or recurring industry challenges led to the decision to revise Guideline 23 (2018)?**

EHEDG guidelines are reviewed every five years and while sometimes the content is simply reconfirmed, this was not the case with Guideline 23. The revision was necessary due to two key reasons: an underrepresentation of Mineral Oil Saturated Hydrocarbons (MOSH) and Mineral Oil Aromatic Hydrocarbons (MOAH) topics and outdated photographic material and document structure. Additionally, during the review of the full document, it became clear that the content could be made more concise. As a result, several parts have been reorganised and streamlined to improve clarity and usability.

**What role does preventative maintenance, including oil analysis and trend monitoring, play in extending equipment life and maintaining food safety?**

Preventative maintenance is essential in both protecting equipment and preventing contamination, especially in food processing environments. In the past, companies typically reacted to failures, for example, replacing bearings only once something went wrong. Today, we see that leading manufacturers work with predictive tools to avoid such situations entirely.

Oil analysis is one of the most important of those tools. By regularly sampling and analysing lubricant condition (for instance once per month for critical equipment or quarterly for non-critical systems), you gain early insight into contamination levels, wear particles and oxidation of the lubricant. If the oil starts showing signs of abnormal wear metals or increasing water content, you can plan a maintenance intervention before a leak or equipment failure occurs.

Trend monitoring goes hand-in-hand with this, instead of looking at a single data point, operators compare data over time. For example, we have several customers who monitor viscosity and TAN (Total Acid Number) over the course of the year. When these values start drifting outside defined limits, production and maintenance teams immediately investigate the cause (such as a failing seal or incorrect re-lubrication event). This approach significantly reduces the chances of unplanned contamination of food.

In short, regular oil analysis and trend monitoring help to identify small issues at an early stage, extend the service life of the equipment and most importantly, ensure that lubricants stay within the process and do not become a source of contamination.



*Taco Mets, Technical Director (Van Meeuwen Lubrication), Chair of the EHEDG Working Group 'Lubricants'*

# Meat Processing



## Reactivated Working Group

### Could you briefly introduce yourselves and your backgrounds?

**Olivier Couraud:** Hello, my name is Olivier. I have worked in food safety for more than 25 years, including 18 years in sanitation with a cleaning company in France. Since 2023, I have been with CFS (Commercial Food Sanitation), first as a Food Safety Specialist and now as Technical Development Lead for the EMEA region. In this role, I support food factories in managing food safety risks, particularly in sanitation and hygienic design and in developing technical solutions to mitigate them.

I became involved with EHEDG in 2009 and became an administrator of EHEDG France the following year. In 2017, I joined the Working Group 'Meat Processing' as a member and was appointed Chair during its relaunch in 2023.

**Ester Fernández:** Hello, my name is Ester. I joined Diversey 20 years ago after completing my degree in chemistry at the University of Girona, Spain. My career initially took me through different industry sectors, but in 2005 I returned to Diversey, where I encountered the food industry and its hygiene challenges for the first time. Since then, I have mainly focused on the processed food sector, what I used to describe as 'everything that is not liquid', to distinguish it from dairy and beverages.

I began in Spain as a Sector Specialist supporting the sales team, later expanded my work to Portugal and eventually joined the European team. Today, I am part of the Global team, coordinating the technical aspects of large food industry accounts. I also lead internal trainings, webinars and project development within Diversey, now a Solenis company. Within EHEDG, I participated in some events and recently joined the Working Group 'Meat Processing'.

### What are the most critical hygienic design challenges unique to meat processing environments, compared to other areas of the food industry?

**Olivier:** Meat processing is complex because it spans a wide range of products and processes, from raw meat to cooked and ready-to-eat foods. This variability creates unique hygienic design challenges. You're dealing with raw livestock material that is inherently less hygienic, while also producing finished products that may be consumed without further processing, like carpaccio or tartare.

The risks are consistent, especially pathogens, but the way we mitigate them varies at each stage. A single facility may involve multiple processing steps, cooking or not and different ingredients. Hygienic design therefore plays a critical role in preventing contamination, ensuring cleanability, and maintaining accessibility.

In ready-to-eat meat processing in particular, the stakes are very high, as there are many steps where contamination can occur.

**In your experience, where do current equipment designs or facility layouts often fall short in maintaining hygiene standards in meat processing?**

**Ester:** Over the years I've seen significant improvements, but challenges remain. A common saying used to be: 'Equipment is designed for production, not for cleaning'. In meat processing, there are thousands of product variations, each with different sizes, shapes, and speeds, requiring dismantling or specialised equipment. This complexity makes it difficult to account for all hygienic aspects.

Often, hygiene risks hide in small details: a hole, a belt or a piece of equipment with inaccessible parts. While hygienic design principles are universal, the meat sector requires a high degree of customisation.

Another challenge comes from older facilities, which were often small operations that expanded over time. This kind of growth makes it difficult to fully adapt existing plants to modern hygienic design standards. While awareness has grown, implementation is not always straightforward in aging infrastructures.

**Why was it important to establish a dedicated EHEDG guideline specifically for meat processing and what value do you hope it will bring to the industry?**

**Olivier:** The aim was to go beyond existing EHEDG guidelines, which typically address individual equipment components. For meat processing, we needed a more holistic approach, one that integrates hygienic design principles across an entire process line.

The challenge is that even if 99% of the equipment meets hygienic design standards, the remaining 1% can still compromise the entire line. By creating a dedicated document, we provide meat producers with a clear philosophy of how to implement hygienic design throughout their process, not just at the equipment level.

This guideline also addresses equipment and practices specific to the meat sector that were not sufficiently covered elsewhere.

The ultimate goal is to give meat producers practical recommendations to improve food safety, reduce risks and ensure compliance while still meeting production demands.

*Olivier Couraud, Technical Development Lead – EMEA (Commercial Food Sanitation), Chair of the EHEDG Working Group 'Meat Processing'*

*Ester Fernández, Global Sector Specialist (Diversey, a Solenis company), member of the EHEDG Working Group 'Meat Processing'*



# Pumps, Homogenisers and Damping Devices

## Reactivated Working Group



**Could you please introduce yourself and your background?**

**Ralf Stahlkopf:** Hello and thank you for the invitation to this interview. My name is Ralf Stahlkopf. I studied mechanical engineering (turbo machines) at the Technical University of Braunschweig, Germany. For more than 30 years, I worked in pump development - from prototype manufacturing and hydraulic calculations to testing (GEA-Tuchenhagen GmbH). For the last five years, I've worked on pump development in Hamburg at an international pump manufacturer. I've been a member of the EHEDG Working Group on Pumps for many years and have served as its chair since 1998.

**Silvia Grasselli:** Hello, my name is Silvia Grasselli. I'm based in Parma, Italy, with a background in genetic engineering/biotechnology from the University of Parma. I started as a young technician in the laboratory of a company known for high-pressure homogenisers and pumps (formerly Niro Soa-vi), then led the lab, moved into R&D and innovation management and today I head

the Process Technology Centre. I joined EHEDG around 1997-1998 and have been active in the Working Group on Pumps ever since, especially on high-pressure homogenisation systems.

**What were the main drivers behind the decision to revise Guideline 17 (2020) and how does the next edition reflect current needs and technological advances in pump design for hygienic applications?**

**Ralf:** The 2020 edition already made important progress: we added more examples and drawings to make the guideline user-friendly and worked on harmonisation with 3-A, clarified definitions and cross-references. However, industry requirements keep rising. Food production demands more product-friendly operation, better energy efficiency and greater sustainability. Some users even ask about recovering energy (e.g. using pumps in turbine mode).

These trends are why we started the fifth revision last year. We're discussing how certification and test requirements can remain ambitious yet realistic for manufacturers. For example, surface-finish expectations can differ across pump types (e.g. investment-cast components in centrifugal pumps or tighter finishes for positive displacement pumps). Aseptic applications often require higher material quality. We're writing these distinctions more explicitly, so the new document reflects real-world applications and supports sustainable, certifiable pump designs.

### What are the most critical hygienic design elements that must be considered when designing pumps for CIP/SIP systems?

**Silvia:** From a design perspective, aligning with EHEDG rules is extremely valuable because it links design to cleanability and sterilisability, not just materials or geometry. If a design complies with EHEDG guidance, we can essentially guarantee our customers that the unit is self-cleaning (CIP) and self-sterilisable (SIP). That goes beyond, for example, 3-A's focus on material/design aspects alone. Another strength of our Working Group is responsiveness: we stay close to end-user needs and update the guideline accordingly, which our customers really appreciate.

### How does the guideline differentiate between hygienic and aseptic applications when it comes to seal design and material choice?

**Ralf:** In hygienic applications, components, including mechanical seals, must be fully cleanable in place (CIP). In aseptic applications, they must also be sterilisable in place (SIP). Preventing biological contamination is the defining requirement for aseptic systems.

Key differences we emphasise in the guideline:

- Geometry & drainability: no dead spaces; gaps must be appropriate; complete drainability is essential in both cases.
- Surface finish: for hygienic centrifugal pumps,  $Ra \leq 3.2 \mu\text{m}$  is generally sufficient. Aseptic pumps typically require  $Ra \leq 0.8 \mu\text{m}$  and in higher-end cases  $Ra \leq 0.4 \mu\text{m}$  with electropolishing.
- Materials: hygienic designs commonly use stainless steels such as 1.4404 (AISI 316L). Aseptic designs may impose stricter composition limits (e.g. low ferrite content, often  $<3\%$ ) and specify particular grades for housings, seal parts and springs.

- Mechanical seals: hygienic pumps often use single-acting seals (sometimes with quench) or double-acting depending on risk. Aseptic pumps more commonly use double-acting seals. Seal face pairs in hygienic service can include carbon versus hard metal; aseptic service typically uses hard metal on hard metal pairs.
- Cleaning/sterilisation regimes: hygienic CIP often uses hot water and alkaline solutions  $\sim 80^\circ\text{C}$ . Aseptic SIP typically requires  $\sim 121^\circ\text{C}$  for approximately 20 minutes.
- Elastomers: selection depends on temperature and media. Hygienic applications commonly use EPDM, FKM, NBR; aseptic applications favour EPDM at elevated temperatures and often FKM/FFKM depending on SIP conditions.



**Ralf Stahlkopf,**  
Development  
(Fristam Pumps  
KG (GmbH &  
Co.)), Chair of the  
EHEDG Working  
Group 'Pumps'



**Silvia Grasselli,**  
Director of Process  
Technology - Engineer-  
ing & Product Develop-  
ment (GEA Group),  
member of the EHEDG  
Working Group 'Pumps'



# Published Guideline

## GL65: Sampling Systems for Representative Liquid Sampling

### Could you please introduce yourself and your background?

My name is Carsten Rosendal. I am a mechanical engineer and hold an MBA from INSEAD in France. I have been working with Keofitt, a Danish company specialising exclusively in sampling valves, since 2011. From 2021 until the end of 2023, I served as Managing Director and since partially retiring, I have continued in a part-time capacity.

I have represented Keofitt in the EHEDG Working Group 'Valves' since 2013.

### What were the primary drivers behind the creation of EHEDG Guideline 65 and how does it address a gap in the current hygienic design landscape?

The key motivation was the lack of comprehensive guidance on sampling, particularly representative liquid sampling. Many food producers are not fully aware of its importance and existing resources are limited or fragmented.

Guideline 65 addresses this gap. It goes beyond equipment selection to cover proper use, installation and cleaning. Even when companies invest in suitable sampling valves, poor installation or incorrect usage can compromise sample integrity.

As a small company, Keofitt has long been committed to promoting knowledge of representative sampling. However, through collaboration within EHEDG and with other leading manufacturers of sampling valves, we have been able to produce a document with global reach and relevance.

### What innovations or design considerations make a significant difference in hygienic sampling and sample integrity?

Guideline 65 is significant because it consolidates all critical issues and practical solutions related to liquid sampling into one comprehensive and accessible document.

It highlights the importance of hygienic sampling valves and systems, which have been available for decades but are often overlooked or misapplied. Unfortunately, many non-hygienic valves are still used for sampling purposes. The document offers clear criteria to help the industry make informed decisions, implement systems correctly and maintain them properly.

### What practical advice would you give to plant engineers or QA managers when selecting or installing a sampling system?

In short: read Guideline 65. It covers all key areas, design, installation, operation and maintenance. More specifically, I would advise incorporating sampling systems early in the design phase of a new process line. Sampling is often added as an afterthought, which can limit its effectiveness. Once installed, it is essential to establish standard operating procedures and to train operators to ensure consistent and safe practices. A sampling valve is only as effective as the person using it.

Maintenance is equally important. We have observed failures simply because seals or membranes were not replaced in time. This can lead to inaccurate test results, unnecessary waste, production downtime, and substantial financial losses. All of these risks are addressed in the guideline.

*“A sampling valve is only as effective as the person using it.”*

**Any final thoughts or acknowledgements you would like to share?**

Yes. This guideline was made possible thanks to the dedicated efforts of my colleagues in the EHEDG Working Group 'Valves', as well as the valuable contributions from peer reviewers across EHEDG.

We sincerely hope that Guideline 65 will be well received by the food industry and help improve practices in hygienic sampling around the world.

***Carsten Rosendal, Former Managing Director (Keofitt), Chair of the EHEDG Guideline 65, 'Sampling Systems for Representative Liquid Sampling'***

**Access GL65: Sampling Systems for Representative Liquid Sampling**





# Published Guideline

## GL42: Disc Stack Centrifuges - Design and Cleanability

### Could you please introduce yourself and your background?

My name is Reinhard Moss and I serve as Senior Director of Design Standards within the Business Unit Separators – Product Line Separators & Decanters at GEA.

My journey began with a focus on milk separators and over time, I took on increasing responsibility in this area. As the department grew, I became more involved in the development of hygienic design standards for our machinery. This work led me to travel to the United States to gain a deeper understanding of regulatory requirements, initially focusing on USDA standards, as there was no guidance for separators at that time. I began by working on USDA acceptance procedures and as the industry evolved, I contributed to the development of the 3-A Sanitary Standards for separators. Beginning 2017 till 2022 I was member of the 3-A Board of Directors.

This marked the beginning of my long-standing engagement with hygienic design, which has since become a core aspect of my role. I was elected to serve as the Chair of the EHEDG Working Group 'Separators', which published Guideline 42, 'Disc Stack Centrifuges - Design and Cleanability' back in 2013.

### What prompted the revision of Guideline 42 and what key developments or industry needs does this new edition address compared to the original 2013 version?

The revision of Guideline 42 was primarily prompted by the five-year policy of EHEDG, which mandates regular reviews and updates of published documents to ensure they remain aligned with current industry standards and regulatory developments.

In this latest review, the main focus was on updating the references to norms, rules and regulations that have evolved since 2013. These adjustments were essential to ensure the guideline remains compliant with the latest requirements and maintains its relevance for both manufacturers and regulators. From a technical standpoint, the core design principles and hygienic engineering practices outlined in the original guideline remained largely unchanged. There were no significant innovations or changes in hygienic design for separators in the meantime. As such, the hygienic performance of the equipment described in the document has remained robust and effective over time.

Most of the feedback incorporated during the revision process came from peers and industry experts who suggested improvements in clarity and wording, rather than proposing

structural or conceptual changes. These refinements were aimed at enhancing the document's usability and interpretability, ensuring that the content is more accessible and easier to implement across the industry.

### How does the document address the specific cleanability challenges posed by high-speed centrifugal force and complex internal geometries?

Indeed, one of the core challenges in designing separators for hygienic applications lies in their complex internal geometries and the high-speed centrifugal forces they operate under. These machines often involve very compact structures with narrow internal spaces, which make cleanability a particular concern.

Early on, it was technically challenging to incorporate all the necessary radii, gasket grooves and other hygienic design features into such tight constructions. However, over time, the industry, including our own team at GEA, has developed reliable fabrication methods that enable even very small and complex machines to meet hygienic design standards effectively.

The guideline addresses these challenges by outlining specific design recommendations that take into account the intricacies of centrifugal systems. This includes best practices for ensuring that all product-contact surfaces are fully drainable,



accessible for cleaning and free of crevices or dead spaces, where residues could accumulate. Additionally, particular attention is given to the integration and positioning of gaskets, grooves and sealing elements, ensuring that these do not hinder cleaning processes and can withstand repeated cleaning cycles without degradation.

At GEA, we continuously train our design engineers, especially new team members, in the principles of hygienic design. Through dedicated workshops and knowledge-sharing sessions, we ensure that all staff is well-versed in how to apply these principles to our machinery. This structured internal education has helped us maintain a consistent and high standard of hygienic design across our product lines. While these challenges remain ongoing due to the evolving nature of machinery and product requirements, the guideline provides a solid framework that helps manufacturers like us navigate these complexities and deliver equipment that meets both performance and hygiene expectations.

**What are the most critical design features that manufacturers should pay attention to when aiming to meet the hygienic requirements outlined in this document?**

There are several critical aspects in separators, but as I already mentioned, one of the main challenges lies in the small areas that you simply can't avoid. These machines are complex by nature and there are many very tight, narrow areas inside them.

Those specific spots require special attention, they need to be closely examined and treated carefully, because that's where hygienic design can be most difficult to apply. It's essential to focus on these challenging areas to ensure that the overall hygienic requirements are truly met.

*Reinhard Moss, Former Senior Director Design Standards - BU Separators / Product Line Separators & Decanters (GEA Group), Chair of the EHEDG Working Group 'Separators'*

Access **GL42**: Disc Stack Centrifuges - Design and Cleanability





# Published Guideline

## GL44 part 2: Managing of Building Work and Equipment Installation/Removal During Food Production

**Could you please introduce yourself and your background?**

**John:** Hi, My name is John Holah. I was the Head of Food Hygiene at Campden BRI for over 25 years before becoming Technical Director at Holchem, now part of Kersia, where I worked for more than a decade. Following retirement, I've continued consulting and supporting Kersia in the development of the Pioneering Food Safety Association. I'm also an Honorary Professor in Food Safety and Hygienic Design at Cardiff Metropolitan University. I've been involved with EHEDG since its inception in 1989 and have participated in hygienic design efforts for several hundred food factories. I currently serve as Chair of the EHEDG Working Group 'Building and Factory Design'.

**Simon:** Hi, my name is Simon Burns. I have 27 years of experience in both technical and operational roles within the food industry. I'm currently based at ZERO2FIVE Food Industry Centre at Cardiff Metropolitan University, where I've worked for the past three years as the Hygienic Design Lead. My work focuses on supporting Welsh food and drink companies, particularly around factory hygiene, hygienic design and modification controls. My background includes extensive involvement in factory set-ups, refits and equipment installations.

**What prompted the decision to draft a Part 2 of the EHEDG Guideline 44, 'Hygienic Design Principles for Food Factories'?**

**John:** The industry has increasingly recognised the risks associated with conducting building work or installing equipment within active food production environments. We've seen numerous cases, especially in the UK chilled food sector, where contamination, particularly with Listeria, was linked to construction activities. One infamous case in the U.S. involved a breakfast cereal company that experienced two Salmonella outbreaks a decade apart, caused by dormant pathogens in a concrete wall disturbed during renovations.

Such events highlight the dangers of performing construction without adequate controls in food factories. GFSI's 2020 benchmark standard (Scopes JI and JII) emphasised the need for risk assessments before initiating any building or installation work in operational facilities. EHEDG's Working Group 'Building and Factory Design' aimed to build on that by developing a focused guideline. Before this, little to no guidance existed on how to safely conduct building works while food production is ongoing. EHEDG Guideline 44 Part 2 fills that critical gap and complements the broader suite of hygienic design guidelines.

**What were the main challenges the Working Group faced in developing a risk-based document that applies to such a wide range of scenarios, from new builds to live production retrofits?**

**Simon:** One of the biggest challenges was clearly defining the scope of the guideline. We were careful not to duplicate or overlap with other documents, especially the newly released Guideline 58, 'Hygienic Design Risk Management'. Our focus quickly zeroed in on building work and installations happening during live food production due to the heightened risk level these scenarios pose.

Our Working Group was relatively small but multidisciplinary, combining academic and industry backgrounds, which turned out to be a strength. This diversity enabled us to assess risks from different angles, blending theoretical insight with practical experiences. We were able to explore a wide range of realistic situations and tailor our guidance accordingly.

**Which best practices were integrated during the drafting process to manage specific risks such as pest control, pathogen persistence and contamination from construction zones?**

**Simon:** We began by identifying three key scenarios: new builds, repurposing existing sites (including non-food facilities) and live production sites undergoing building works. We examined physical hazards (tools, debris), biological and microbiological hazards (e.g., Listeria, pests) and chemical risks (e.g., lubricants, allergens).

**Key best practices included:**

- Hazard source analysis: factoring in environmental exposure, contaminated building materials like sandwich panels, and disturbances to drainage systems.
- Contractor hygiene controls: including tool cleaning protocols, entry/exit procedures and training contractors in food hygiene principles.
- Waste management: ensuring debris removal didn't cross-contaminate production areas.
- Segregation: using screening, zoning barriers and temporary enclosures with carefully chosen fixings that wouldn't create long-term hygienic issues.
- Air and liquid flow management: to prevent cross-contamination through movement of dust, aerosols or fluids.
- Verification protocols: including environmental swabbing and decontamination plans following the completion of works.

- Risk assessment example: we provided a template in the guideline to help facilities document and control building-related risks effectively.

**In your view, what are the key success factors for effectively implementing this guideline on-site? What role do multidisciplinary teams and cross-functional communication play in ensuring food safety during building works?**

**Simon:** Communication is absolutely critical. Clear and early definition of user requirements ensures that contractors understand food safety expectations. This should be part of a collaborative conversation covering feasibility, control measures and risk mitigation.

Multidisciplinary teams, including architects, OEMs, QA, production, and hygiene teams, are key to anticipating and resolving implementation challenges. Effective risk assessments, tailored to site-specific needs, are foundational. If production must continue during works, teams may need to revise or develop new prerequisite programmes, implement enhanced cleaning and monitoring and provide additional training for both contractors and in-house staff.

Strategic production pauses can greatly reduce risk. Options like stockpiling product, outsourcing production temporarily or shifting operations to a sister facility should be considered. Lastly, project closure should include a formal review: what worked, what didn't and how to improve future projects.

*John Holah, Director, Scientific Committee, Pioneering Food Safety Association (Kersia), Chair of the EHEDG Working Group 'Building and Factory Design'*

*Simon Burns, Process Operations Manager (ZERO2FIVE Food Industry Centre – Cardiff Metropolitan University), member of the EHEDG Working Group 'Building and Factory Design'*

**Access GL 44 Part 2 Managing of Building Work and Equipment Installation/Removal During Food Production**





# Published Guideline

## GL20: Hygienic Design and Safe Use of Mixproof Valves

**Could you please briefly introduce yourself and your organisation?**

My name is Uwe Heisswolf. I'm a graduate process engineer and currently the Head of Product Development at Kieselmann GmbH, a position I've held for the past 13 years. Over the course of my career, I've accumulated around 25 years of experience in the design and development of industrial valves, with more than a decade focused specifically on the food and beverage industry.

As for Kieselmann GmbH — we're a family-owned, medium-sized company based in Knittlingen, Germany, with a long-standing tradition in stainless steel process technology dating back to our founding in 1937. Over the years, we've grown into an internationally recognised supplier of stainless steel valves, components, and systems. Today, Kieselmann delivers high-quality solutions to the food, beverage, chemical, and pharmaceutical industries in over 30 countries worldwide.

Within EHEDG, I have the honour of serving as the Chair of the Working Group 'Valves' and Co-Chair of the Sub-Committee Working Groups.

**Why was a revision of Guideline 20 needed, and what are the main changes compared to the 2000 edition?**

The best way to explain the revision is to compare the original version of the guideline with the updated one. One of the most noticeable improvements lies in the graphical representations. These have been redesigned to appear more neutral and technical, making it easier to visually support and clarify the content described in the text.

Another significant change involves the topic of aseptic design, which has been separated out from the core document. This allows us to delve deeper into the functional requirements specific to hygienic design, which are the primary focus of the revised Guideline 20. In contrast, aseptic design covers more complex considerations, so the Working Group decided to address these in a dedicated supplementary guideline. As a result, both documents are now better tailored to the distinct needs of their respective audiences.

**How do seat design choices and shaft balancing influence leakage control, cleanliness and protection against pressure shocks?**

To answer this properly, we should start by distinguishing between a valve's hygienic design and its functional characteristics. Hygienic design requirements represent the baseline standards that any valve must meet, regardless of its intended application. The seat design and valve disc geometry are often a matter of engineering philosophy

— a collaborative decision between manufacturer and customer. That's why Guideline 20 outlines three common seat design variants, each of which is widely used in the industry. These designs all come with individual strengths and trade-offs, and it's up to the user to assess which one best fits their specific system. Importantly, the guideline presents these options neutrally and does not rank them.

When it comes to shaft or piston balancing, there has been much discussion. From the perspective of our Working Group, a balanced piston design is absolutely essential for double-seat mixproof valves. These valves are equipped with individually actuated pistons, which can be vulnerable to pressure surges — potentially causing unintentional openings if not properly designed. Pressure surges can occur during regular operation, such as when downstream valves close quickly. Moreover, mixproof valves themselves can cause pressure spikes if they close against the flow direction with unbalanced pistons. The solution is to use 'balanced' or pressure-equalised valve pistons, designed to distribute pressure forces evenly across the piston. This is achieved through symmetrical piston geometry, allowing pressure to act on both sides of the piston plug. Such a design greatly reduces the force required for actuation and the mechanical load on the drive, improving safety and performance.

**From your perspective, why is hygienic design so crucial in valve technology, especially in today's automated food processing environments?**

In closed process systems used for food production, hygienic design is a fundamental requirement for all components that come into contact with the product, that includes valves.

Valves play a critical role in production plants. They manage a wide range of functions: opening and shutting flow paths, switching product streams, regulating flow and pressure, safeguarding against overpressure or vacuum conditions and preventing cross-contamination between incompatible products.

Because they serve such diverse and essential functions, valves represent potential risk points in hygienic production. That's why they must meet strict design and manufacturing requirements, particularly in modern food plants that rely on automated, multifunctional piping systems.

Ultimately, all hygienic design principles focus on one goal: ensuring the cleanability of product-contact surfaces. A core principle is: the simpler the design, the easier it is to clean. However, as functional demands increase, so too does the complexity of valve design. The ongoing challenge for manufacturers is to combine functionality and hygienic performance in a way that also allows for efficient, reliable production.

***Uwe Heisswolf, Head of Product Development (Kieselmann), Chair of the EHEDG Working Group 'Valves', Co-chair Sub-Com Working Groups***

**Access GL20 Hygienic Design and Safe Use of Mixproof Valves**





# Published Guideline

## GL12: The Continuous or Semi-Continuous Flow Thermal Treatment of Particulate Foods

**Could you please briefly introduce yourself and your organisation?**

**Bengt:** My name is Bengt Eliasson and I am the Chairman of the EHEDG Working Group 'Heat Treatment', currently working as Business Development Manager for Tetra Pak Processing Solutions, in Sweden. I have spent 35 years in the food industry in both field and back-office roles. Most recently, I was responsible for Tetra Pak's portfolio of aseptic processing units. Naturally, hygienic design and food safety have always been at the core of my work.

**Ana:** My name is Ana Soares and I work at JDE Peet's as the Food Safety Excellence Lead. My responsibilities include developing protocols and ensuring that all necessary measures are in place to guarantee product safety. A significant part of my work involves heat treatment validation. This is also why I am closely involved in the EHEDG Working Group, where I contribute to developing guidance on heat treatment alongside Bengt.

**Why was it necessary to revise Guideline 12 on heat treatment of particulate foods and what were the main drivers that triggered this update?**

**Bengt:** There were several drivers. The most important is that Guideline 12 is very old, it dates back to 1994 and is one of the first EHEDG guidelines still in use. Its scope is also very narrow, as it only covers sterilisation (UHT) of low-acid foods. In fact, much of it was a copy of Guideline 6, with some additional information on foods containing particles.

However, it was not specific enough when it came to particulate foods and their unique challenges. With the revision, we broadened the scope to include pasteurisation as well as sterilisation and we made the content more focused on the actual complexities of particulate foods. The new version complements the existing documents on heat treatment but offers dedicated, practical guidance for this category of products.

**What makes particulate foods especially challenging to sterilise compared to homogeneous liquids?**

**Ana:** With homogeneous foods and fluids, you can accurately measure temperatures at the cold point and reliably apply time-temperature guidance. With particulates, the situation is much more complex.

The challenges include:

- Particle behaviour: particulates may not remain evenly distributed in the carrier liquid.
- Variability in size and shape: different particles heat differently and it is extremely difficult to measure temperature at the particle centre.
- Matrix differences: the thermal requirements of the liquid phase may not align with those of the solid particulates.

Additionally, the industry often tries to adapt equipment designed for homogeneous liquids to handle particulate foods, which can cause issues. Equipment may not be suitable for the flow behaviour, material interaction or fouling risks that particulates present. This is why specific guidance is needed, to ensure processes are designed with these unique challenges in mind.

**Which system components are most prone to fouling and how can hygienic design reduce this risk?**

**Bengt:** The main challenges are usually related to heat exchangers, but issues also arise in valves, tanks and vessels. While baseline compliance with EHEDG Guidelines 8, 'Hygienic Design Principals', and

Guideline 10, 'Hygienic Design of Closed Equipment for the Processing of Liquid Food' is essential, this is not sufficient when it comes to particulate foods.

To prevent fouling and contamination, it is important to ensure that process components allow particles to move freely, while also avoiding stagnant areas where they may accumulate. Cleaning-in-place must be designed with these challenges in mind, which can mean using longer flush sequences or even reverse-flow flushing to fully remove particulates from the system.

Maintenance is also more demanding for particulate systems. Because particles can be abrasive, wear and tear on components may require shorter service intervals. These design and operational considerations are critical to ensuring both hygienic safety and system reliability.

**Access GL12: The Continuous or Semi-Continuous Flow Thermal Treatment of Particulate Foods**



*Bengt Eliasson, Business Development Manager (Tetra Pak Processing Solutions), Chair of the EHEDG Working Group 'Heat Treatment'*

*Ana Dymond Soares, Food Safety Excellence Lead (JDE Peet's), Member of the EHEDG Working Group 'Heat Treatment'*



# NEWLY Published Guideline

## GL8: Hygienic Design Principles

### A Foundation for Safe and Efficient Food Production

In 2025, EHEDG published the updated edition of Guideline 8 Hygienic Design Principles, further reinforcing its role as the cornerstone of hygienic design within the food industry. It provides a comprehensive, risk-based framework for the design, construction and integration of equipment and facilities. The latest edition reflects the increasing complexity of modern food processing environments and strengthens the alignment between hygienic design, risk management and sustainable operations.

At its core, Guideline 8 establishes that hygienic design is not a single requirement, but a lifecycle approach. From initial concept through operation and maintenance, all elements are intended to contribute to the prevention of contamination. The guideline clearly defines three primary objectives: 1) preventing ingress of contaminants, 2) avoiding microbial growth, and 3) eliminating accumulation of residues. These objectives align directly with food safety risk management and form the basis for all subsequent design decisions.

A key strength of Guideline 8 Hygienic Design Principles, further reinforced in this update, is its structured approach to risk. Hygienic design is explicitly linked to risk assessment and management, ensuring that solutions are fit for purpose and aligned with intended use. This is particularly relevant in increasingly complex processing environments, where different cleaning regimes (wet vs. dry, CIP versus dismantling) and product characteristics demand tailored design approaches. The classification of equipment into hygienic and

aseptic classes provides practical guidance for applying appropriate design criteria.

Central to the guideline are the five hygienic design principles:

- compatibility of materials,
- ability to clean,
- ability to drain,
- ability to access,
- ability to segregate.

Together, these principles form the core of hygienic design in practice, ensuring that materials are compatible with the product and cleaning conditions and that equipment and systems can be effectively cleaned, drained, accessed for inspection and maintenance and segregated to help prevent cross-contamination.

Beyond principles, Guideline 8 translates theory into actionable criteria. It addresses materials of construction, surface finish, joint design and geometry, all of which directly influence cleanability and contamination risk. Importantly, it highlights that poor design leads not only to food safety risks, but also to operational inefficiencies, including increased downtime, higher cleaning costs and reduced performance. Hygienic design is therefore a driver of both safety and productivity.

The updated guideline also places strong emphasis on integration at system level. Hygienically designed components do not guarantee a hygienic system. Layout, utilities, supports and automation should be considered holistically to ensure that

the overall production environment supports hygiene objectives. This systems-level thinking is essential for modern food manufacturing.

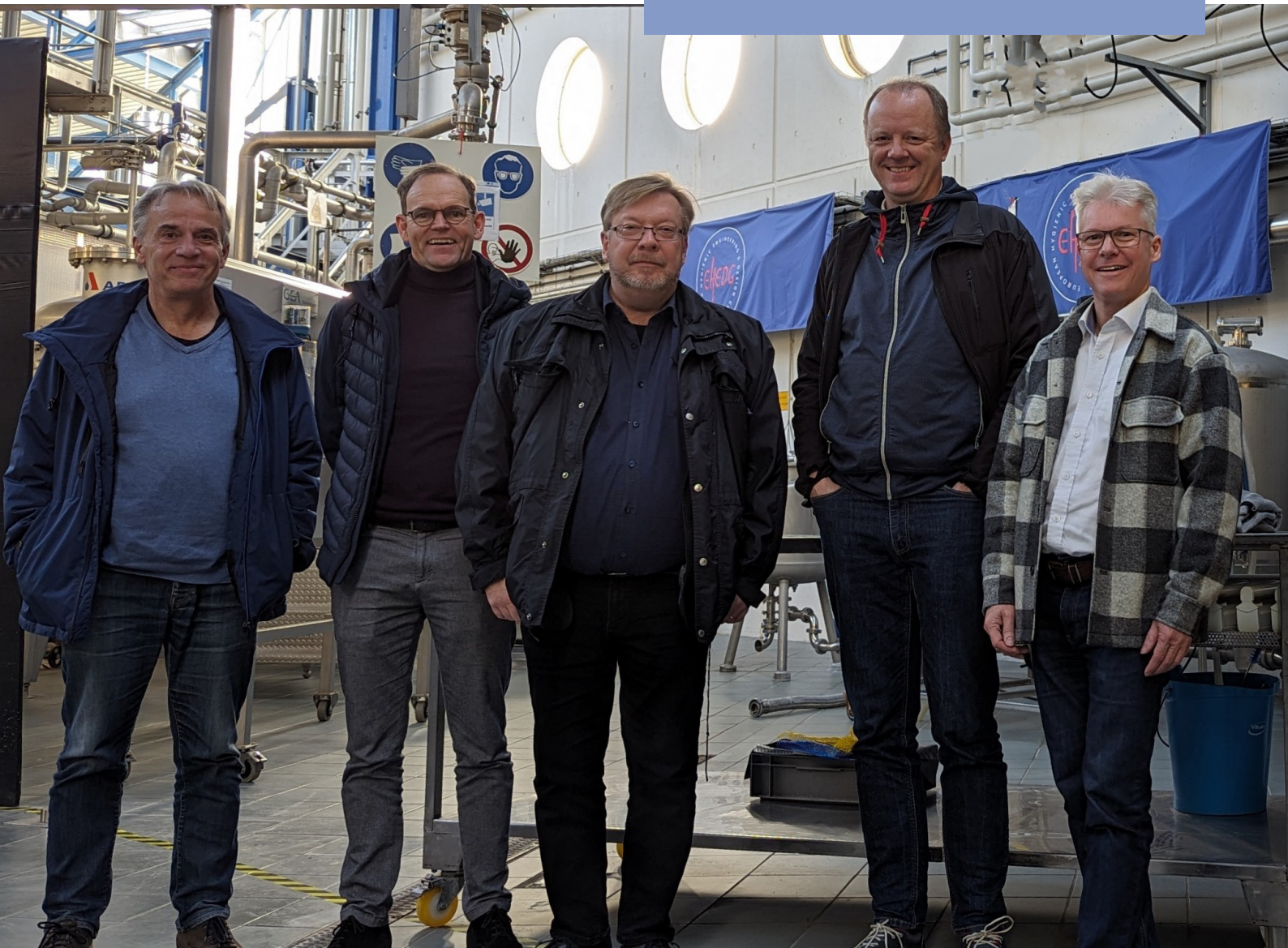
For EHEDG members, this update provides renewed guidance to align equipment design, process integration and operational practices with current hygienic design expectations.

In summary, EHEDG Guideline 8 Hygienic Design Principles provides a clear, structured and practical foundation for hygienic design. With its 2025 update, it continues to support consistent food safety, reduce operational risks, and enable efficient and sustainable production. For equipment manufacturers, engineers and food producers alike, Guideline 8 is not only a reference document, it is a guiding framework for developing future-ready food production systems.

Free  
Download GL8: Hygienic Design Principles



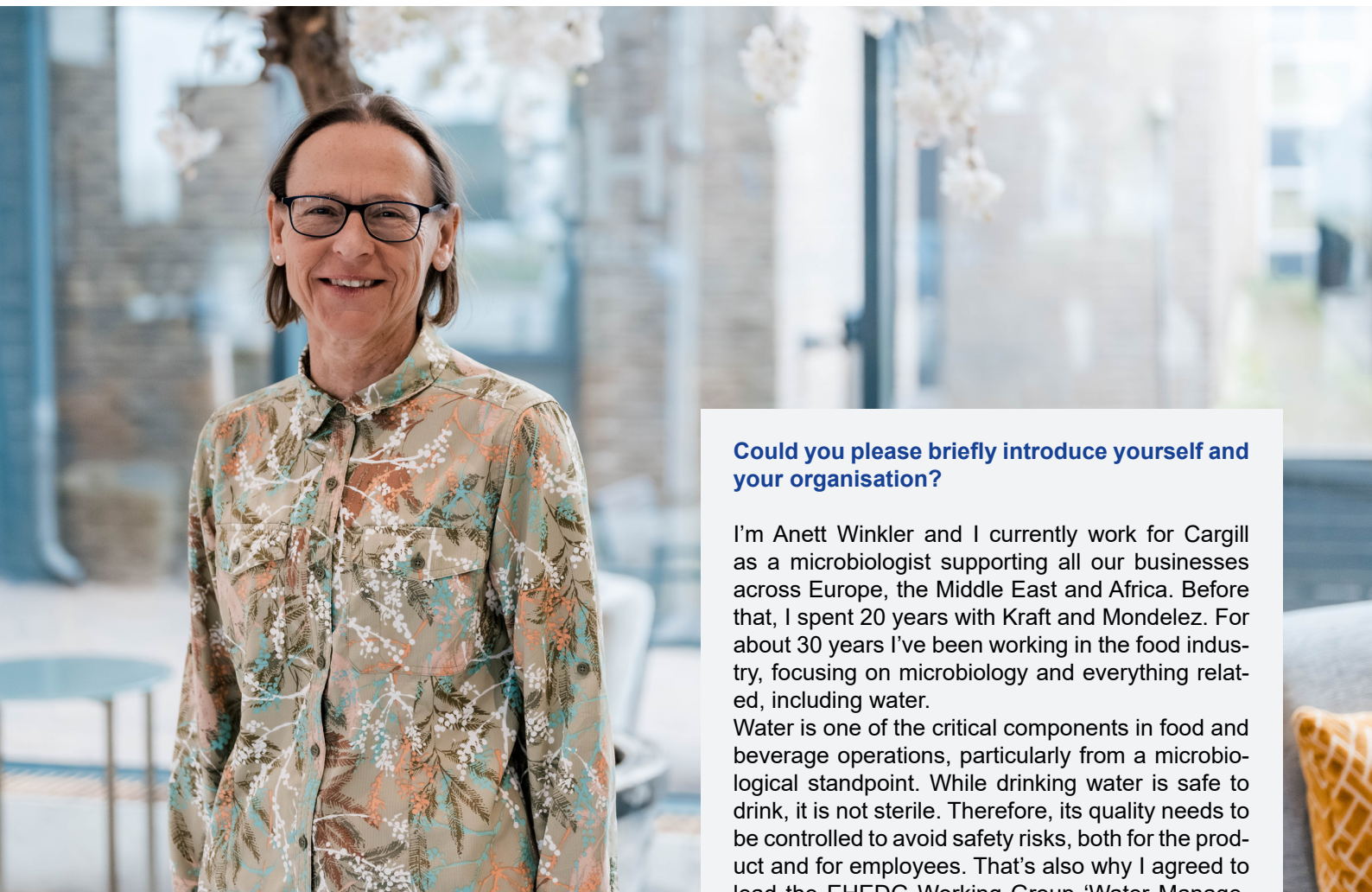
*Dirk Nikoleiski, Patrick Wouters (EHEDG Head Office), Stefan Akesson, Bo Boye Busk Jensen (Alfa Laval) and Jürgen Hofmann (Hygienic Design Weihenstephan), Chair of the Working Group 'Design Principles'*





# Published Guideline

## GL28: Safe and Hygienic Treatment, Storage and Distribution of Water in Food and Beverage Factories



### Could you please briefly introduce yourself and your organisation?

I'm Anett Winkler and I currently work for Cargill as a microbiologist supporting all our businesses across Europe, the Middle East and Africa. Before that, I spent 20 years with Kraft and Mondelez. For about 30 years I've been working in the food industry, focusing on microbiology and everything related, including water.

Water is one of the critical components in food and beverage operations, particularly from a microbiological standpoint. While drinking water is safe to drink, it is not sterile. Therefore, its quality needs to be controlled to avoid safety risks, both for the product and for employees. That's also why I agreed to lead the EHEDG Working Group 'Water Management' even though I'm not an engineer, I rely on the engineering experts for the technical parts and contribute from a microbiology perspective.

### Why was it important to revise Guideline 28 and what are the key updates compared to the 2018 edition?

Over the past five to ten years, there's been a significant shift in how we manage water, especially driven by the increasing focus on sustainability. This involves rethinking how we use resources, including the potential for water reuse. The revised document now includes considerations for water reuse and addresses water sources that weren't previously discussed. Furthermore, it was essential to include water risk assessment guidance in the guideline, as many applications do not require drinking-quality water, while others demand water of even higher quality.

We've also incorporated forward-looking insights on new technologies that, while not yet mainstream, may become important in the near future. Another major enhancement is the explicit identification of contaminants relevant to different water treatments and the addition of monitoring requirements. These were thoroughly mentioned in the previous edition and are crucial to ensure that the quality of reused or treated water matches its intended application.

### What are the main hygienic design challenges in modern water distribution systems within production environments?

Interestingly, the term 'modern' doesn't always apply well to water distribution systems in factories. In many facilities, water systems were installed when the plant was first built and have been expanded or modified over time without full renewal. This results in a patchwork of old and new components that can be difficult to manage and inspect.

The real hygienic design challenges often lie in the connections between materials of different ages and types. Changes in production layouts over time, such as adding or removing lines, create complex networks. Dead ends are a particular issue, where parts of the system are disconnected but not fully removed. Another major challenge is simply knowing where all the water lines run. Distribution maps are often outdated or incomplete, which makes monitoring and maintenance difficult. Sometimes, even basic things like sampling points are missing.

### With rising sustainability pressures, how does the guideline address safe and hygienic reuse of water from sources like condensate or reverse osmosis permeate?

We definitely address those and more. In addition to condensate and reverse osmosis (RO) permeate, the revised guideline includes stormwater, surface water and even process water from food production. The key principle is that reuse must start with a thorough risk assessment. This involves understanding the likely contaminants in a given water source, the foreseen application of the water, thereby determining the required water quality and matching both by using appropriate treatments.

The new document emphasises that there's no one-size-fits-all solution. Instead, it presents a range of treatment options, highlighting their capabilities and limitations. This helps manufacturers choose suitable solutions based on their specific situation. By doing so, the guideline supports companies in enhancing their sustainability performance, for example, enabling the reuse of water that previously would have gone to waste, as long as it's treated appropriately.

*Anett Winkler, Food Safety Advisor / EMEA Microbiologist (Cargill), Chair of the EHEDG Working Group 'Water Management'*

**Access GL28:** Safe and Hygienic Treatment, Storage and Distribution of Water in Food and Beverage Factories



# NEWLY Published White Paper

## WP2: The Impact of Hygienic Engineering and Design on Sustainability in Food Production

**Could you briefly introduce yourselves and describe your professional background and involvement within EHEDG?**

**Ludvig:** I'm Ludvig Josefsberg and I currently serve as the Chair of the EHEDG Working Group 'Sustainability'. My educational background is MSc in Chemical Engineering from the University of Technology, Lund, Sweden. I spent more than 40 years at Alfa Laval and Tetra Pak in leading positions in the food engineering and processing business.

Since retiring from my line function at Tetra Pak, I've continued contributing to the food industry through different professional tasks. One of those was serving as the EHEDG President for two terms. Altogether, I have served more than 15 years in the Executive Committee at EHEDG.

In 2023, I was invited to chair this Working Group.

**Georg:** I'm Georg Kalss, Co-Chair of the EHEDG Working Group 'Sustainability' since 2024. My background is in Technical Chemistry and Materials Science from Vienna University of Technology. I have been with the Bühler Group since 2010, where I serve as the Principal for Materials Science. My main fields of work are coating and cleaning technologies for food contact materials.

I had the honour of serving on the EHEDG Advisory Board for 2 years, representing the equipment manufacturing EHEDG members and I also participate in the Working Group 'Materials of Construction'.

**Could you tell us about the motivation behind drafting the White Paper on Sustainability and how sustainability is defined in the context of hygienic design and food processing?**

**Ludvig:** The background for the White Paper was the obvious need within EHEDG to develop knowledge in the area of sustainability in the food supply chain. Historically, EHEDG has focused primarily on hygienic engineering and design, due to its critical impact on safe food production. But the extension of the scope to include sustainability, is a distinct requirement of the industry, and should provide significant added value to the membership. And sustainability and productivity go hand in hand. A more sustainable operation will likely be more efficient. So, the natural entry point was to explore the links between hygienic engineering, design and sustainability, always taking food safety as a given. That need to explore these connections became the foundation for forming the Working Group itself.

**Georg:** To further clarify the earlier point about sustainability and productivity: sustainability ultimately means reducing the greenhouse gases needed to produce a unit of food. It's a clear metric that links directly to operational efficiency. The more efficient a process, the more sustainable it tends to be.

We began with a brainstorming session in the Working Group to identify which aspects of food production and hygienic engineering and design we should concentrate on. We were looking for the main elements that influence the interaction between hygienic design and sustainability.

Initially, we identified a wide range of topics, but after the first few rounds of meetings, we narrowed it down to four key sustainability elements: energy, water, waste and chemicals.

We found that focusing on these would allow us to address most of the interaction between hygienic engineering and sustainability, without getting lost in excessive detail. Of course, there's more out there, but this model gives us a scope that is both manageable for the team and tangible to communicate to EHEDG members.

**Ludvig:** And to carry out this project, EHEDG invited member companies to join the Working Group. We started with 13 participants, though 4 eventually stepped away for various reasons. Currently, we have 9 active contributors to the development of the White Paper. These participants represent a broad spectrum of the food industry, including Tetra Pak, Bühler, Danone, Unilever, Ecolab and ACO. In addition, The University of Natural Resources and Life Sciences of Vienna (BOKU) joined the group. So, we've built a diverse team, representing processing, production and research, which gives the project a solid grounding and a broad relevance.

#### **If you were to specify who the target audience is, who would you say this White Paper is for?**

**Ludvig:** The primary target audience are the EHEDG members. Since the inception of EHEDG the majority of our members are from the equipment manufacturing sector, but also a significant number of food producers have joined EHEDG over time. A third important group is the academic community. While we do have individual members as well, our primary goal is to engage both those who develop the equipment and systems and those who use it.

Whilst our primary target audience is our 800+ member companies, EHEDG does also reach out to companies that aren't currently EHEDG members. Thus, the White Paper might also help us to extend the EHEDG relevance beyond our existing network.

#### **Was the information in the White Paper based on best practices and case studies shared by the companies you mentioned earlier?**

**Ludvig:** Yes, exactly. The work process we introduced started with dividing the White Paper into several key sections. We began with the project objectives and scope. Then, as a team and drawing from our vast collective food industry experience,

we identified the primary environmental impact areas we decided to focus on.

The team selected four key sustainability elements, mentioned earlier by Georg: less energy, water and chemical usage, and reduction of product losses. These were selected due to the two factors, resource consumption and environmental impact.

Another important consideration was the diversity within the food industry itself. It's one of the largest industries globally, but within it you have several and very different food categories. The group made a strategic decision to focus the White Paper on the dairy category. This made sense not only because it's a significant food category, but also because much of EHEDG's existing guidance, training and expertise already leans toward liquid food processing in which dairy is significant.

Once that framework was in place, we looked at the individual expertise and company background of each Working Group member and we assigned responsibilities accordingly. One person worked on energy, another on water and so on. The content of the White Paper is built from a combination of sources: knowledge from the companies, literature reviews and to some extent, best practices.

#### **What are the next steps for the Working Group on Sustainability?**

**Ludvig:** The first and most important goal was to publish the White Paper. The Working Group also discussed how to best position it within EHEDG's existing portfolio. During this process, we identified several opportunities to expand and improve EHEDG's overall product offerings.

We agreed that the White Paper should take a generic, foundational position on the four selected key environmental impact areas. This will allow the EHEDG leadership to assess whether there is sufficient interest and need to move forward with more focused outputs. To that end, the Working Group developed a proposal for a Phase Two project. This next phase would aim to establish and quantify the link between hygienic design and sustainability, thus identifying specific opportunities to extend the EHEDG product offering.

EHEDG Guidelines with structured, sustainability-related content.

For now, our focus remains on strengthening EHEDG's core competence in hygienic engineering and design, with food safety and product quality continuing as the primary drivers. At the same time, we recognise that well-designed hygienic solutions inherently contribute to sustainability goals, for example through improved resource efficiency, reduced waste, and optimised cleaning processes. Therefore, sustainability is not positioned as a separate pillar, but as an important and complementary outcome of good hygienic design.

In line with this approach, EHEDG has agreed that sustainability aspects will be systematically addressed within relevant Guideline development activities. This is already reflected in the updated Guideline development instructions for Working Groups, where contributors are encouraged to consider sustainability implications alongside hygiene and cleanability requirements. In this way, sustainability becomes an integrated element of future EHEDG Guidelines, without compromising the organisation's primary focus on food safety.

**Georg:** Looking ahead, another important step is to further strengthen the scientific basis behind the relationship between hygienic design and sustainability. While practical experience and industry knowledge clearly indicate strong synergies, there is a need for more quantified and comparable data to support decision-making and demonstrate impact.

**Ludvig:** Therefore, EHEDG aims to actively support and stimulate scientific research in this area, in collaboration with academic partners and industry stakeholders. As a first step, a collaborative PhD project has been initiated with the University of Limerick in Ireland, focusing on the intersection of hygienic design and sustainability. By generating more tangible and evidence-based insights, we can better demonstrate how hygienic design contributes not only to safe food production, but also to broader sustainability objectives across the food supply chain. This will ensure that EHEDG continues to provide relevant, science-based guidance to its members and the wider industry.



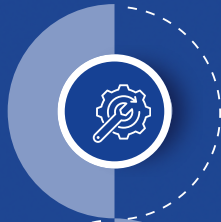
**Ludvig Josefsberg**, Chair of the EHEDG Working Group 'Sustainability', former EHEDG President (2016-2022)

**Georg Kalss**, Materials Science Principal (Bühler Group), Co-Chair of the EHEDG Working Group 'Sustainability'



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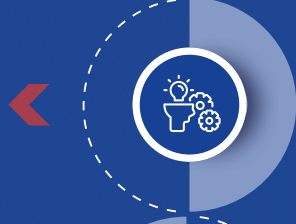


**Hygienic Maintenance & Design of Food Packaging Equipment**

by Adwy van den Berg, Tobias Braunegger & Fredrik Hansen

**AI Serving Food Safety: Bridging Knowledge Gaps in Resource - Limited Settings**

by Anthony Chemaly



25 FEBRUARY

**Optimising Equipment Cleanability and Maintenance**

by Hui Zhang & Dimitri Tavernarakis



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**Hygienic Design Considerations for Efficient CIP Systems**

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### **Could you briefly introduce yourself and your background?**

My name is Anthony Chemaly. I'm a food scientist, and I've been working in the industry for around 30 years. I started out in the meat sector, working with spices and then moved into engineering, quite an unusual shift. I joined a company that built machinery for sorting produce and spent a lot of time on farms along the Zimbabwean border, designing and implementing sorting solutions.

I was often the only food professional among engineers, which gave me early exposure to cleanability challenges. I began to realise how beautifully designed machines could still fail in hygienic environments if cleanability wasn't taken into account, especially with exposure to chlorine and other sanitation agents.

Later, I moved into auditing and have now spent the past 25 years conducting thousands of food safety audits around the world, working with major retailers. Much of that work has involved systems implementation and factory design with a strong focus on hygienic engineering, which has always been close to my heart.

Joining EHEDG in 2018 was a significant step for me. It allowed me to start introducing EHEDG documentation and best practices to South Africa. The natural next step was becoming a trainer, and that experience has been incredibly rewarding. With the support and quality of the training materials, I feel we are making real progress in the industry. I believe this work truly makes a difference, it saves lives and fills a critical gap in the broader food safety picture.

### **What inspired you to become an EHEDG Authorised Trainer?**

It was the result of spending years in food factories and repeatedly noticing a disconnection between technical and engineering teams. So many of the issues we identified during audits related to engineering, cleanability problems, pest ingress and poor design. That's what motivated me to deepen my own understanding of engineering. The EHEDG guidelines were an excellent resource for this. They helped me bridge the knowledge gap and, in turn, allowed me to share that knowledge with suppliers and factory teams in a more practical, impactful way.

This area has become a real passion for me, because I would estimate that around 80% of the food safety issues we see can be traced back to engineering design or practices. This is a global issue, not just specific to South Africa. There's a widespread skills gap in hygienic engineering, especially in the supplier base.

So being able to upskill both auditors and engineers and help them integrate food safety principles into design and maintenance has been incredibly valuable. It's one of the most effective ways we can drive meaningful change.

### **What was your experience like during your first course in Johannesburg?**

It was an outstanding experience. Having the EHEDG President with us added immense value, particularly through his expertise in CIP and related areas. I personally found it very insightful.

What was most rewarding was watching engineers make the connection between food safety and design decisions. They began to understand why certain welds can pose risks or why valve selection matters, how seemingly small technical choices have significant food safety implications.

Some of the attendees were suppliers we work with and when I visited their sites again about six months after the training, I could see the impact. They had implemented what they had learned, it was being translated into practice. There was a real sense of pride in seeing how the training had led to tangible improvements in hygiene and safety. The feedback has been incredibly positive and we're now seeing that ripple effect across other suppliers who've participated in the training.

### **Why is it important to bring EHEDG training to South Africa and the broader African continent?**

It's critically important. The technical expertise is there, most of the engineers we work with are highly skilled in their craft but many have not been sensitised to the food safety implications of their work.

The value of EHEDG training lies in bridging that knowledge gap. Once engineers understand why certain design features matter for food safety, their mindset shifts.

EHEDG World Congress 2024  
2 & 3 October | Nantes, France  
'Achieving hygienic excellence by design'

# Anthony Chemaly

## New EHEDG Authorised Trainer

They start to consider not just how to get a machine running but how to reduce contamination risks, how to ensure cleanability and how to prevent foreign object introduction.

This shift also enriches the risk assessment process. Traditionally, engineering input in food safety risk assessments has been quite limited, often due to time pressures and a lack of specific training. But now, we're seeing engineering teams provide much more detailed and valuable input. At the same time, food technologists are gaining a better understanding of engineering concepts. There's more cross-pollination of skills and that's leading to better collaboration and ultimately, safer food factories.

This is exactly what we need, both here in South Africa and across the African continent. And I'm excited to see how much momentum is already building in this space.



**Anthony Chemaly**, CEO (IBL Africa) and EHEDG Authorised Trainer

# Enrico Visconti

## New EHEDG Authorised Trainer

### Could you please briefly introduce yourself and your background?

I am a senior corporate manager at Habasit International AG, a Swiss multinational enterprise in the field of process and conveyor belting, hygienic industrial components and inline cleaning equipment for open processes.

Thanks to my job, I had the opportunity to get extensive international background and exposure in both the food processing industry and the machine components design and manufacturing, for which I hold several patents as inventor.

Finally, I am also an experienced international trainer in conveyor engineering and recently, as a EHEDG Authorised trainer, I support my peers in different countries in our common effort to diffuse the EHEDG principles and guidelines in the industry. Beside this, at EHEDG, I am also Co-Chair of the Conveyor systems working group.



## What inspired you to become a EHEDG Authorised Trainer?

With more than 30 years in the conveyor belting industry as a producer, working across progressively responsible engineering and managerial roles, in a leading multinational environment, I have seen first-hand how critical hygienic design is to operational performance and product safety.

Throughout my career, I've been closely involved in applications where conveyor systems are in direct or indirect contact with food products. This exposure highlighted how design decisions, often made early in a project, can have long-term consequences for cleanability, maintenance and contamination risk.

After several years passed "behind the curtain" of the general EHEDG membership and then, as a member of the Working Group Conveyor Systems, and finally as Co-chair, becoming a EHEDG Authorised Trainer was a natural progression for me. It provides an opportunity to share the practical insights I've gained over decades and to help others understand not just the "what" of hygienic design standards, but the "why" behind them. I am particularly motivated by the chance to bridge the gap between theoretical requirements and real-world industrial implementation.

I also managed several technical trainings in multicultural environments along the years, and this gave me the confidence to give it a try.

## What was your experience like during the process of becoming an authorised trainer and leading up to your first EHEDG course?

The process of becoming an authorised trainer was both rigorous and rewarding. It was also an occasion to further learn and consolidate my knowledge thanks to my EHEDG mentors. While I brought extensive industry experience, aligning that experience with the structured framework of EHEDG principles and guidelines required a disciplined and detailed approach.

I had first to follow the internal process, presenting some partial courses together with my mentors and then, finally evaluated and qualified. Just to make it a bit easier, I decided to make it for the 3 languages that I speak, and I am now qualified for English, Spanish and Italian.

One of the most valuable and challenging aspect of the process was combining years of practical knowledge with a format that is clear, structured, and relevant for a diverse audience but, that had not been set up from myself. Preparing for my first course involved not only mastering the training materials but also reflecting on which real-world examples would resonate most effectively with participants.

Delivering the first course was a significant milestone. It reinforced how important it is to connect technical principles with practical application, especially for professionals coming from different sectors and levels of experience. The interaction with participants also provided valuable feedback and further enriched my own background and understanding.

Overall, the experience strengthened both my technical alignment with EHEDG principles and my ability to communicate them effectively, this thanks to a continuous learning from my mentors and then my peers, once that I have been qualified and I officially started my activity as an Authorised Trainer.

## Why is it important to bring EHEDG training to a global audience?

In today's globalised food industry, equipment, components and expertise move across borders more than ever before. With over three decades in a multinational environment, I have seen how differences in hygienic design understanding can lead to inconsistencies in performance, compliance and risk management.

Bringing EHEDG training to a global audience helps establish a common, internationally recognised benchmark for hygienic design. This is particularly important for equipment such as conveyor systems and hygienic components, which are widely used and often integrated into complex processing lines across multiple regions.

Global training ensures that engineers, designers and operators share a consistent understanding of best practices, regardless of where they are based. It also supports developing markets in adopting high standards from the outset, rather than retrofitting solutions later at higher cost.

Equally important is the exchange of knowledge that global training enables. Different regions bring different challenges and innovations and sharing these perspectives helps drive continuous improvement in hygienic design worldwide.

Ultimately, expanding access to EHEDG training contributes to safer products, more efficient operations and stronger consumer confidence on a global scale.

*Enrico Visconti, Senior Corporate Manager (Habasit International AG), EHEDG Authorised Trainer, Co-chair of the EHEDG Working Group 'Conveyor Systems'*

### **Could you please briefly introduce yourself and your background?**

My name is Felix Schottroff. I am an Assistant Professor in Food Process Engineering at BOKU University in Vienna, Austria. My background is food engineering, with a focus on conventional and innovative technologies for microbial inactivation, cleaning and disinfection, as well as process design and optimisation for the processing of established and novel food raw materials.

### **What inspired you to become an EHEDG Authorised Trainer?**

Hygienic design and engineering are an integral part of my teaching at BOKU and I have been involved in the organisation of several EHEDG Austria events, so becoming an EHEDG Authorised Trainer came somehow naturally.

### **What was your experience like during the process of becoming an Authorised Trainer and leading up to your first EHEDG course?**

The process of becoming an Authorised Trainer was quite intense and I learned a lot of details relating to certain aspects of hygienic design and engineering. As I had been involved in the organisation and accomplishment of several EHEDG courses before, I knew what to expect, but especially the in-depth questions from the audience were rather challenging at the beginning. I was lucky to be surrounded by established EHEDG specialists from whom I learned a lot about these very specific practical aspects.

### **As a university professor, how do you leverage your experience into providing better hygienic design training?**

As someone teaching courses related to Food Processing at a University level, we have the duty to train the future generation of food technologists and engineers about the importance of hygienic design and engineering. Besides the basics, I think it is very valuable to also share insights from practice with the students and to emphasise that hygienic design is more than a theoretical topic, but has distinct and explicit implications for their later practice when working in the food industry. For this purpose, I am grateful for all the discussions I can regularly experience within the frame-

work of EHEDG courses, at the World Congress and when talking to company partners. This practical knowledge is invaluable - both for practice but also for in-depth training of the next generation.

### **Why is it important to bring more EHEDG training opportunities to Austria?**

In Austria, the food sector is mostly characterised by small and medium-sized enterprises. Especially in the equipment manufacturing sector, many companies that produce specialised equipment for food processing do not have a food background. Thus, many of these companies are not yet aware of EHEDG and the importance of Hygienic Design. Therefore, I consider it very valuable to have the opportunity to be involved in Fundamental and Advanced Courses in Hygienic Design in order to improve this situation in the long run.

*Felix Schottroff, Assistant Professor (BOKU University), EHEDG Authorised Trainer, Co-Chair of the EHEDG Regional Section Austria*

**Felix  
Schottroff**  
New EHEDG  
Authorised Trainer



# Training Testimonials

## EHEDG Advanced Course on Hygienic Design - New Zealand

**Can you please briefly introduce yourself and your background?**

My name is Nicole Jackson and I am a Senior Process Technologist at Fonterra. I'm based at our Lichfield site which manufactures a variety of dairy products. My background is chemical and materials engineering (University of Auckland) and I first joined Fonterra as a graduate. I have since been in several different technical roles over the past 4 years.

**What sparked your interest in hygienic design and how does it relate to your day-to-day work?**

A key part of my day-to-day work is problem solving in the plant such as inadequate CIP of equipment or poor design/layout of equipment leading to microbiological issues. Understanding hygienic design forms a key part of being able to effectively address these issues. I am sometimes involved in plant upgrades so understanding the most hygienic way of integrating these upgrades is important for long term success. The various touch points my current role has on hygienic design sparked my interest.

**As a Senior Process Technologist, how has your view on integrating hygienic design into system design or plant upgrades evolved since the training?**

The training has deepened my understanding of key factors influencing hygienic design. When I am involved in design reviews I can now pull on this knowledge to ensure we get a hygienically designed plant upgrade to minimise the chance of future issues. The knowledge I have gained from the training has reinforced that we all have a role to play ensuring our systems and processes are designed in a hygienic way to allow safe and high-quality manufacture of food.

**Nicole Jackson,**  
*Senior Process Technologist (Fonterra)*



Visit [www.ehedg.org/training](http://www.ehedg.org/training) to see the upcoming training courses around the world.

### Can you please briefly introduce yourself and your background?

My name is Chris O'Driscoll, and I am currently the Maintenance Manager for a nutritional spray dryer operated by the A2 Milk Company. I've spent the past two and a half years in the dairy processing industry, focusing on asset reliability, safety and continuous improvement within the high-specification environment of infant formula production.

Prior to this, my background was in the mining and minerals sector, where I trained as an electrician and progressed through roles in frontline leadership to middle management, eventually specialising in process safety.

Transitioning from heavy industry to food processing has presented a unique set of challenges, particularly around hygiene standards, regulatory compliance, and product quality expectations specific to the infant nutrition space. This shift has broadened my technical and leadership skillset significantly.

### What are some of the key hygienic design challenges you see in dairy processing from a maintenance perspective?

I would start with unvetted plant modifications. One of the most critical issues is when plant modifications are made without proper review through a hygienic design lens. This can introduce risks such as microbial harbourage points or compromised CIP coverage, undermining product safety and compliance.

Then I would mention knowledge gaps in assembly and component integrity. There is often a disconnect between operational and technical teams when it comes to hygienic assembly practices. For example, using incorrect seal types, misaligned gaskets or improper reassembly of equipment can significantly affect hygiene standards. We are actively addressing these gaps through targeted training and standardised procedures.

And let's not forget resource constraints. Like many in the industry, we face challenges with resourcing, both in terms of skilled labour and time allocation. Maintaining the high hygienic standards required for infant nutrition production demands a consistent and thorough service regime, which is difficult to achieve without adequate personnel and planning.

### Did the EHEDG Advanced Course in Auckland change how you work with design or engineering teams when it comes to equipment upgrades or replacements?

Yes, the training has significantly influenced how we engage with design and engineering teams regarding equipment upgrades and replacements. It provided valuable insight into the key hygienic design principles that must be considered when planning new projects or implementing process changes.

As a result, we now proactively assess the hygienic suitability of parts and spares, ensuring they align with EHEDG guidelines before installation.

There's also a stronger focus on cross-functional collaboration, where maintenance plays an active role in the early design phases to highlight potential hygienic risks.

Our team's problem-solving capabilities have as well improved, particularly when it comes to identifying root causes of plant hygiene issues. The training highlighted factors we may have previously overlooked, enabling more effective and permanent solutions.

This shift has helped embed a more preventive and hygiene-focused mindset into our maintenance and engineering practices.

**Chris O'Driscoll,**  
*Maintenance Manager (Mataura Valley Milk)*



# Training Testimonial

EHEDG Advanced Course on Hygienic Design - South Africa

## Could you please introduce yourself and your background?

I'm Juliana Chiya, a food technologist by training, with nearly 30 years of experience in the food industry. The majority of my career, approximately 80%, has been in fast-moving consumer goods, specifically in business-to-consumer (B2C) environments. I am currently based at Kerry Ingredients in Hammarsdale, South Africa. This role marks my first experience in a business-to-business (B2B) setting, which I find both fascinating and filled with continuous learning opportunities.

Throughout my career, I have held a variety of roles including Quality Assurance Analyst, Technologist and Production Team Leader. I also participated in a leadership development programme in manufacturing. My expertise spans integrated systems, covering quality, health, safety and environmental standards. The core of my professional life, however, has been dedicated to quality and food safety progressing from coordination roles to senior management positions.

I've had the privilege of working with several prominent companies. I began at National Brands, now known as AVI Limited, and later joined Coca-Cola, where I spent 15 years. I subsequently held roles at Mondelez for nearly two years, at PepsiCo for six years and at Tiger Brands for two years. Now, I'm proud to be part of the team at Kerry.

## What inspired you to attend the EHEDG Advanced Training in Johannesburg?

Over the years, I've observed a clear gap in collaboration between quality, engineering and maintenance teams, particularly when it comes to understanding equipment requirements from a quality perspective. In many cases, when operational issues arise, hygienic design isn't considered as a potential root cause. The focus often shifts to more visible or external factors instead.

During my time at Tiger Brands, I was introduced to EHEDG since the company was a member. Although I was based at the head office rather than a plant, I became aware of EHEDG's work, albeit at a very basic level. At the time, I didn't have the opportunity to attend formal training. However, once I gained a clearer understanding of what EHEDG offers, I made

a personal commitment to attend their training one day. I even encouraged my Quality and Food Safety Manager and the Engineering Lead to participate in it.

Now that I'm with Kerry, I've identified a real need to close this knowledge gap. I didn't want to go through the training alone, so I recommended that both our site hygienist and engineering manager join me. Together, we intend to establish a strong foundation for promoting awareness of hygienic design within our site.

## As the Quality Leader at Kerry, how do you plan to implement the EHEDG training within your team and organisation?

The first priority is education training our teams and fostering cross-functional awareness. It's crucial that everyone understands what hygienic design entails and why it's important. For instance, engineering teams may not always recognise the significance of a proper weld or the appropriate use of dairy couplings for specific applications. There's also a need to understand how different materials behave, their suitability for direct contact and their long-term durability.

This awareness-building effort should also include our procurement team. They need to make informed choices when sourcing equipment or components.

The second step is to embed EHEDG principles into our processes and decision-making frameworks. For example, during CapEx projects, we should use EHEDG guidelines as a reference when selecting new equipment. Similarly, during supplier evaluations whether for new installations or refurbishments we will give preference to those offering EHEDG-certified solutions.

Finally, I see great value in incorporating hygienic design into our audits and inspections. It should become a routine checkpoint in all hygiene and safety assessments. These three pillars, awareness, process integration and auditing, will guide how I implement the training within our operations.

**You've worked across various multinational companies. How have you seen hygienic design evolve during your career and where does EHEDG fit into that evolution?**

When I began my career, hygienic design was simply not part of the conversation. It wasn't on the agenda in any of the industry forums or discussions I was involved in. In most cases, it only came up as a reactive measure, after an incident had occurred. The common response was to retrofit machines with hygienic parts, but that only addressed part of the issue, especially if the original equipment wasn't designed with hygiene in mind.

Over time, however, things have started to shift. This has been largely influenced by tighter regulations and more stringent requirements from certification bodies such as GFSI. As the global focus on food safety has intensified, companies are beginning to adopt hygienic design as a proactive, rather than reactive, strategy.

EHEDG has played a pivotal role in driving this evolution. They provide not only training but also ongoing education and opportunities for member engagement. One of the things I particularly value is the ability to contribute to the development of new materials as a member.

While adoption is still progressing at a measured pace, the momentum is definitely growing. What distinguishes EHEDG is their emphasis not just on certifying equipment but on testing it too. This adds a significant level of confidence in terms of food safety assurance.

***Juliana Chiya, Quality Manager  
(Kerry Ingredients)***



# New EHEDG Authorised Evaluation Officer (AEO)

## Could you please briefly introduce yourself and your background?

My name is Natacha Holmud, I'm 28 years old and live with my husband and newborn daughter, whom I gave birth to in December, in Copenhagen, Denmark. I am a Master of Science in Engineering in Food technology, with a focus on food hygiene and microbiology. I have been employed as consultant in the Center for Hygienic Design at FORCE Technology since May 2023.

## What inspired you to become an EHEDG Authorised Evaluation Officer?

During my education, I worked in the chocolate industry and when I attended hygienic design courses, I wondered why I could not find this applied anywhere in the industry; that sparked my interest in working to improve food hygiene and safety. When I started working with EHEDG, I found that the best way for me to be able to ensure more hygienic design is by creating awareness of it and enabling production facilities to implement as much certified equipment as possible!

## What was the experience like during the entire process and what has been your favourite part of this new role?

The journey has been challenging, but fun! For more than 2 years, I have been involved with evaluating the design of various equipment at FORCE Technology which is an EHEDG Authorised Testing Laboratory, as well as being educated by all of the SubCom Certification group during meetings and discussions. The more you learn, the more you realise what you don't know! What I love most about being an AEO is the contact with our customers - learning from them and working together with them to secure the best hygienic solutions supported by our testing.

## From your perspective, what are the most common hygienic design challenges you encounter during evaluations and how can manufacturers address them early in the design phase?

Gasket design is by far the most challenging issue we find with regard to hygienic performance, either because of the design of the gasket itself or because the surrounding environment does not allow proper access. This is best solved in the early stages by reading the EHEDG guidelines on gasket design, as well as having a consultation session with an AEO.

## What aspects of the EHEDG certification process do companies often underestimate, and what advice would you give to applicants preparing for certification?

What surprises many in the evaluation process is that manufacturers often forget to share all the necessary information or details that we ask for in advance, which greatly extends the process as we have to wait for it and in some cases, it can take a long time for them to deliver it. consultant in the Center for Hygienic Design at FORCE Technology.



*Natacha Holmud, Consultant (FORCE Technology), EHEDG Authorised Evaluation Officer, member of the EHEDG Working Group 'Chocolate Processing'*

# EHEDG CERTIFICATION

**TYPE ED - Equipment dry cleaned only**

**TYPE EL - Equipment cleaned with Liquids**

**ED Class I**  
Closed equipment dry cleaned only without dismantling

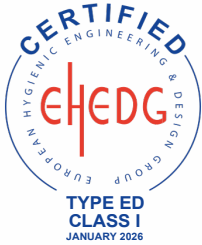
**ED Class II**  
Closed or open equipment dismantled for dry cleaning only

**EL Class I**  
Closed/open equipment, wet cleaned-in-place (CIP/OPC) without dismantling

**EL Class II**  
Closed/open equipment dismantled for wet cleaning (COP)

**EL Aseptic Class I**  
Closed equipment, wet cleaned-in-place (CIP) without dismantling, steam sterilisable, and bacteria tight

**EL Aseptic Class II**  
Closed equipment, dismantled for wet cleaning, steam sterilisable, and bacteria tight after reassembly



## 8 Testing Labs Worldwide

### AMERICAS



### EUROPE



### ASIA



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**Get EHEDG Certified today >>>**



# Regional Section Austria



## Would you like to briefly introduce yourselves and your organisations?

Gerhard Schleining. I have been an EHEDG member for more than 30 years and I am a founding member of EHEDG Austria. My background is food and biotechnology and I worked at BOKU University in the fields of food quality and food safety management until my retirement in 2020. I am still active in several international organisations: in 2022-2023, I was the President of the ICC (International Association for Cereal Science and Technology: <https://icc.or.at>) and I have been a founding board member of GHI (Global Harmonisation Initiative: <https://www.globalharmonization.net>) since 2007. In EHEDG, I am an EHEDG Authorised Trainer and a member of the SubCom Training and Education.

Felix Schottroff. I joined the EHEDG Regional Section Austria in 2019 and I have been a co-chair for several years. I am also part of BOKU University, where I hold a tenure-track professorship in Food Process Engineering, with research foci in the fields of microbial inactivation and cleaning & disinfection, amongst other things.

The EHEDG Regional Section Austria was founded in November 2016 and currently has 16 company members, two institute members and one individual member. Our activities focus particularly on knowledge transfer in order to spread the word about hygienic design and engineering and to increase the awareness of EHEDG and its activities. To do so, we offer at least one fundamental and one advanced course every year, as well as in-house training courses on request. We also organise at least one 'special course' each year on topics which are of particular relevance for our EHEDG Austria members.



## How would you describe the hygienic design landscape in Austria?

In general, the food industry in Austria is characterised by mostly small and medium-sized enterprises (SMEs). Moreover, many traditional production companies still use equipment which is not always state of the art. As a consequence, the hygienic design landscape in Austria is sometimes a bit challenging, as companies are very careful with new investments and employees frequently lack the time to take part in appropriate training courses. We see this as an opportunity, as there is still room for additional education, and we try to implement this as much as possible within the framework of in-house training courses: in this way, the knowledge of hygienic design and engineering within a company can be increased, with the special added value of being able to discuss and demonstrate aspects related to hygienic design directly using the example of the equipment existing at the respective production site.

## What are the main opportunities and challenges for hygienic design in Austria today?

As mentioned, the challenges result mostly from the fact that most companies are SMEs with a lack of resources for investments and training. As opportunities, we view the fact positively that hygienic design is increasingly considered in quality management systems, recognised by GFSI. Since many food processors in Austria are required by retail chains to be certified for IFS, the topic will automatically gain traction and will hopefully lead to more companies requesting appropriate training courses.

## What is your strategy for developing and promoting hygienic design in Austria in the coming years?

Mostly through knowledge transfer. We regularly offer fundamental and advanced courses, as well as a yearly special course on topics which are of particular relevance for our EHEDG Austria members. This year, for example, we will have a course on the hygienic design of buildings for food production. Moreover, we want to increase the awareness of hygienic design and EHEDG amongst the next generation of food science and technology professionals. Hygienic design lectures have successfully been implemented at BOKU University.

We have already started to contact Universities of Applied Sciences and Secondary Schools in order to further spread the topic of hygienic design in their lectures. Moreover, we also hope that the EHEDG World Congress will help to attract Austrian attendees and hopefully future members of EHEDG Austria.

## EHEDG World Congress 2026

### Vienna will host the EHEDG World Congress 2026: What can participants expect from the event?

The event will tackle a variety of interesting topics and activities for the participants. There will be updates on the latest developments in hygienic design and engineering, scientific presentations and industry insights, as well as plenty of networking opportunities. So everyone involved in hygienic design and engineering will benefit from attending. And, of course, there will be delicious Austrian food specialities for everyone to enjoy.

### Finally, Vienna is famous for its culture and hospitality. What should congress visitors definitely experience while they are in the city?

The city itself has a lot to offer, from traditional architecture, the look and feel of the historic imperial capital to modern and lively districts where the latest trends can be experienced. If participants have some extra time available, we recommend that they visit some of the exciting museums, palaces, classical and contemporary concerts or the world-famous Vienna State Opera. While in the city, it is a must to taste Viennese culinary specialities, such as Wiener Schnitzel or to experience the relaxing atmosphere in one of the famous coffee houses, or 'Kaffeehaus' in German.

**Gerhard Schleining**, Chair of the EHEDG Regional Section Austria, EHEDG Authorised Trainer,

**Felix Shottroff**, Assistant Professor, (BOKU University), Co-chair of the EHEDG Regional Section Austria. EHEDG Authorised Trainer

# Regional Section

# Brazil



## **Looking back at EHEDG Brazil's 10-year trajectory, what achievements stand out most to you?**

When we started promoting hygienic design, we were very well received by the industry, which was eager for information that could enhance its processes. At that time, professionals were motivated to help translate the guidelines in order to gain access to valuable content. Gradually, they began taking this knowledge back to their companies and influencing their suppliers.

It was gratifying to see participants from the advanced course sharing success stories in our seminars, sending before-and-after photos of the improvements implemented in their factories, strengthening the safety of food and beverages.

We went from knowledge that was once restricted to a few companies to a scenario in which many organisations are at least familiar with the topic, with several now using it as a benchmark.

A major driver of this awareness and implementation was the incorporation of hygienic design requirements into GFSI-recognised schemes, particularly FSSC 22000, which accelerated the industry's adoption of these practices.

## **How has awareness and adoption of hygienic design evolved in the Brazilian food industry over the last decade and what have been the biggest challenges?**

Although the knowledge generated interest, equipment users initially faced significant challenges in dealing with the legacy of machinery already installed. And when it came to future projects, justifying the cost of acquiring hygienically designed equipment always required strong technical arguments.

However, after ten years, it is now possible to state with confidence that the industry's interest in hygienic design has grown substantially. Today, it is a constant concern and one that demands appropriate, case-specific solutions.

## **The educational showroom on hygienic design at ITAL is an important recent initiative, what inspired its creation? How do you imagine this showroom will contribute to training and innovation in the sector in Brazil?**

ITAL is a well-known research and education centre in Brazil and Latin America, located in Campinas, a major hub for food and agriculture education. It receives frequent visits from university students, technicians, companies from various sectors and government agencies. Campinas is home to two food engineering programmes and two technical courses, in addition to other programmes such as mechanical engineering. The idea is to offer a permanent space for visits and learning, where anyone interested in studying sanitary design can explore the topic almost as if it were a museum.

## **Your anniversary seminar brought together 113 participants and eight sponsors, what were the main insights or results of the event?**

We have made significant progress, but we must remain resilient and continue reinforcing the same message to ensure the ongoing implementation of hygienic design throughout the food production chain.

The seminar was very well received and provided valuable insights for all players in the food production chain. It certainly sparked interest in improving existing practices and driving innovation.



**As we enter the next decade, what are your priorities and aspirations for EHEDG Brazil?**


Holding higher-visibility events, promoting the exchange of technical information and continuing to spread the importance of hygienic design, in addition to supporting problem-solving, are essential actions. Brazilians are very open to sharing information, learning and case studies and this cultural trait should be fully leveraged, together with the support offered by the EHEDG Head Office.

**Marisa Padula, Researcher, (ITAL - Institute of Technology), Chair of the EHEDG Regional Section Brazil, EHEDG Authorised Trainer**

**Juliane Dias, Food Safety and Quality Communicator (Flavor Food Consulting), Co-chair of the EHEDG Regional Section Brazil, EHEDG Authorised Trainer**



# Regional Section Gulf Cooperating Council (GCC)



**Congratulations on the establishment of the EHEDG Regional Section GCC! Could you please briefly introduce yourself, your background and the team?**

My name is Ahmad Roustom and I have the privilege of serving as Chair of the EHEDG GCC Regional Section. Dubai has been my home for more than 26 years and, during that time, I have seen the region evolve into a major hub for trade, innovation and industrial development.

My background is in civil engineering and my career began in construction. I spent seven years with Amana Buildings, working on industrial and commercial developments across the region. This experience gave me early exposure to how facilities are designed and delivered, particularly in sectors where operational efficiency, durability and hygiene are essential.

For the past 11 years, I have been with BLÜCHER, working closely with the food and beverage industry across the APMEA region. Our work focuses heavily on hygienic infrastructure solutions and a large part of our approach is built around knowledge-sharing and building strong industry networks. Through this role, I have had the opportunity to work alongside manufacturers, consultants, contractors and equipment suppliers involved in some of the region's most advanced food production facilities.

The GCC Regional Section was established with a small but experienced committee representing different parts of the food industry ecosystem. The founding members include Alexander Hoier from LAMILUX, Matej Lah from Ecolab, Nasr Mahmud from ifm and myself. Together, we bring expertise from hygienic building materials, sanitation technologies, automation systems and hygienic infrastructure.

**What does this milestone mean to you personally and how do you believe it will impact the food safety landscape in the GCC Region?**

The GCC occupies a unique position at the crossroads of global trade, connecting Europe, Asia and Africa. Over the past two decades, the region has developed some of the most modern food production facilities in the world, often built with the involvement of leading international engineering firms and technology providers.

At the same time, food security has become a strategic priority across GCC countries, with governments investing heavily in strengthening local food production and supply chains. Industries such as dairy, poultry and beverage manufacturing continue to expand as part of this long-term vision.

As production capacity grows, hygienic design becomes increasingly critical. The way facilities are designed, constructed and maintained directly affects food safety, operational efficiency and long-term sustainability.

The establishment of the Regional Section GCC also reflects EHEDG's interest in engaging with regions that have developed significant practical experience in modern food manufacturing. The scale and sophistication of many facilities in the GCC provide valuable insights that can contribute to global best practices. In this sense, the regional section allows the GCC not only to benefit from EHEDG knowledge but also to share experience and best practice with the wider EHEDG community worldwide.

## How was the experience of setting up this new team in the region with existing global EHEDG members?

The process has been very positive and collaborative. Many EHEDG member companies already operate in the GCC and the response to establishing the regional section has been encouraging.

During recent industry platforms such as Gulfood Manufacturing and the Dubai International Food Safety Conference (DIFSC), we received strong feedback from existing members as well as interest from companies looking to engage more closely with EHEDG.

Supporting current EHEDG members and strengthening their presence in the region is an important pillar of our strategy, while also gradually expanding the network with organisations that share the same commitment to advancing hygienic engineering and food safety.

## What recent advancements or trends in hygienic design have you observed in the food industry?

One of the most encouraging developments is the growing recognition that hygienic design must be considered from the earliest stages of facility and process design. Companies are increasingly integrating hygienic principles during the planning and engineering phases, rather than addressing hygiene challenges only during operations.

There is also increasing awareness that hygienic performance extends beyond processing equipment. Flooring systems, drainage infrastructure, building materials and cleaning strategies all play a critical role in maintaining safe and efficient production environments.

Another important trend is the growing alignment between hygienic design and sustainability, particularly in areas such as water management, efficient cleaning processes and durable infrastructure.



## Could you share a success story or example of effective hygienic design implementation in the GCC region?

Across the GCC, we are already seeing strong examples, particularly in large dairy and beverage facilities, where international best practice and advanced technologies are widely implemented. Many of these facilities incorporate well-planned product flows, cleanable surfaces, effective drainage systems and structured sanitation programmes.

At the same time, there remains significant opportunity to expand awareness and technical understanding across the broader food manufacturing sector.

Through training programmes, seminars and industry collaboration, the EHEDG Regional Section GCC aims to support this development and contribute to strengthening hygienic design practices across the region, while fostering closer connections between global expertise and regional experience.

**Ahmad Roustom, Head of Sales (BLÜCHER AP-MEA), Chair of the EHEDG Regional Section GCC**

# Regional Section Mexico



## Could you introduce yourself and tell us about your role at EHEDG?

Marco Antonio León Félix, Chair of the EHEDG Regional Section Mexico.

## Looking back, what do you consider to be the most significant achievements or moments of the EHEDG PanAm Congress 2025 for the region?

There were several, such as the interaction or networking between hygienic design (HD) solution providers and end users, the training experience with the participants – who were all from the food and beverage industry – and undoubtedly the roundtable discussions on current topics in HD. Special mention should be made of the presence of Hein Timmerman, our current EHEDG President, who not only delivered a conference but also put his vast knowledge into practice in the cleaning assessment course together with Alex Maroto. Finally, the visit to NUTRESA, where dialogue took place regarding HD challenges and feedback from the visitors – a great experience!

## How do you think the EHEDG PanAm Congress contributed to strengthening hygienic design practices and awareness within the food and beverage industry in the Americas?

The exchange of experiences among the congress participants set the stage for opening new approaches in the application of HD criteria; if we add training and the company visit to this, it is clear that awareness of HD received a strong boost!

## What trends, concerns or opportunities in the industry became most evident through the presentations, panel discussions and conversations with participants?

Trends: Without a doubt, AI and automation in design, operation and controls in HD.

Concerns: Avoiding the recalls that occurred in 2024 based on HD criteria, as well as increasing actions that contribute to environmental protection.

Opportunities: Undoubtedly, trends and concerns can also be interpreted as opportunities.



## What feedback or perceptions caught your attention and what do they tell us about the current needs of the Pan-American market?

The focus of certificate programme owners (CPOs) on HD criteria, the openness of the food industry to accept EHEDG recommendations and this leads us to conclude that HD is a major need, both for food safety and quality, without overlooking its relevance to the environment.

**Marco Antonio Leon Felix, Chairman (SOMEICCA), General Director (Lefix), EHEDG Authorised Trainer and Chair of the EHEDG Regional Section Mexico**



*Hein Timmerman (EHEDG President, Diversey), Adwy van den Berg (EHEDG Director), Ximena Hernández Muñoz (SOMEICCA), Marco Antonio Leon Felix (Lefix), Ingrid Paul Bravo Medina (SOMEICCA), Marlen Osorio Saavedra (ITAT), Valeriia Seliverst (EHEDG Head Office), Daniela Lozano (ITAT)*





# EYE Mentorship Programme Midway event 2025

On 22 and 23 April 2025, EHEDG welcomed mentors and mentees to the EYE Mentorship Midway Event for Round Two of the programme. Held across Amsterdam and Rotterdam, the two-day gathering provided a valuable moment to reflect on progress, exchange experiences and further strengthen the mentoring relationships that had been developing over the past months.

The event began at the EHEDG Head Office in Amsterdam, where participants took part in an interactive Knowledge Circle session. This format encouraged open dialogue, allowing mentors and mentees to share their backgrounds, areas of expertise and personal motivations. The session helped deepen mutual understanding and created a strong foundation for more meaningful conversations throughout the event. The day concluded with a group dinner, offering a relaxed and informal setting to continue discussions and build stronger personal connections.

On the second day, participants travelled to Unilever in Rotterdam, where the programme combined reflection with hands-on learning. The morning started with an introduction to the company, followed by dedicated one-on-one mentor-mentee sessions and feedback discussions. These conversations provided space to reflect on individual progress, share experiences and

explore how the programme could continue to support both personal and professional development.

A key highlight of the day was an engaging workshop led by Jocelyn Rebbens, focusing on the GROW coaching model and performance development. Building on earlier insights into communication styles, participants explored practical tools to enhance mentoring conversations and address real challenges. Through interactive exercises and a hands-on team activity, the group applied these concepts in practice, creating a dynamic and collaborative learning environment.



To close the event, participants enjoyed a guided walking tour of Rotterdam, followed by a group dinner. These moments further strengthened the sense of community and allowed conversations to continue beyond the structured programme.

The Midway Event marked an important milestone in the EYE Mentorship Programme. It reinforced the value of connection, shared learning and personal growth, while providing renewed energy and direction for the second half of the mentoring journey.

**Learn more about the EYE Mentorship Programme**



# Round Two 2024-2025



**When we first met you last year, you were completing your PhD and embarking on your EYE Mentorship programme journey. Now, one year later — and working at Tetra Pak — how would you introduce yourself today and what has changed since then?**

Well, a lot has happened over this time, to be honest but in essence, I'm still the same. Through the EYE Mentorship programme, I was able to focus my energy and gain a clearer perspective. My mentor, Lucia Portanet, helped me recognise that the skills I had developed for research could also be applied successfully in other areas. That insight made a big difference for me.

So, I would say I'm still the same Jorge, with the same energy, but now more focused and sharper in how I direct it. That's how the mentoring programme has truly impacted me.

**Congratulations on joining Tetra Pak! How did this opportunity come about and what was it like to make that leap from mentee to professional in a global company?**

It's been a great change in my day-to-day life overall. Interestingly, I had already applied for the position at Tetra Pak before joining the EYE Mentorship Programme. During the application and selection process, the mentorship really supported me. Lucia, my mentor, helped me refine my leadership skills and adjust my mindset from the academic and research world to a more dynamic, business-oriented environment.

In academia, you focus on reasoning and precision, figuring out exactly how things work. At Tetra Pak, the focus is more on effectiveness, learning and creating capabilities that help you move forward. Lucia helped me understand that difference and gave me the confidence to recognise that I had the skills to succeed. That trust made all the difference.

**Beyond technical skills, what personal qualities or leadership traits did you take away from the programme?**

Lucia helped me understand the importance of speaking up when it's needed, not being afraid to share my opinion or offer a different perspective.

She also taught me that once a decision is made, even if not everyone fully agrees, it's important to commit to it and move forward together. That mindset of compromise and shared direction has been valuable.

Beyond technical skills, I've learned to thrive in a more collaborative environment, to share my knowledge openly, ask questions without hesitation and recognise that we're all working toward the same goals. That sense of teamwork and dynamism is something Lucia truly helped me develop.

## Looking ahead

### How do you envision your professional path developing from here?

Right now, I'm in a learning phase, still adapting and growing. During my time in academia, I used to feel like a shark in a fishbowl; now, I'm a fish in the ocean. There's so much more to explore and discover. Every day brings something new to learn new skills, new tools, new challenges.

In the next few years, I see myself continuing to learn, taking on bigger projects and contributing to initiatives with greater impact. In the long term, I aspire to lead and develop business units here at Tetra Pak, always working toward protecting what's good: the food, the people and the planet

### Do you see yourself getting involved in EHEDG activities or mentoring others one day, just as Lucia did with you?

Of course. hygienic design is a key principle in my work. Whenever we design equipment, quality is never compromised and that aligns closely with what EHEDG stands for. Many of our activities are directly connected to the values and objectives of the organisation.

Even though I'm still early in my professional journey, I definitely see myself getting involved with EHEDG and, one day, mentoring others, just as Lucia did with me. I believe that growth is something we achieve together. You can't make a forest out of a single tree; you need to help others grow around you to create a bigger impact.

**Jorge Luis Rivera Azurdia, Project Manager (Tetra Pak Processing Equipment AG)**

### What advice would you give to new mentees joining the next round of the programme?

To the new mentees; first of all, enjoy it! It's a great opportunity. You'll gain valuable insights from the industry and discover new perspectives on how meaningful your research work truly is. You'll also realise that the skills you've developed through your studies are highly relevant and appreciated in the professional world.

Be brave and ambitious. Share your goals openly with your mentor and make the most of their guidance. And most importantly, listen to them! They've already walked the path you're about to take and their experience can help you navigate the challenges ahead.

### Wrap-up remarks

I would like to thank EHEDG for organising this programme. It's a wonderful opportunity for young researchers to take the leap into industry or even to confirm that research is truly their path. Either way, it serves as a real career booster and helps participants grow both personally and professionally.



# Young Researcher Award at FCFP 2025

## Can you please introduce yourself?

My name is Matti Heide. I'm a Research Associate at the Dresden University of Technology (TU Dresden). I also studied Mechanical Engineering at the same university. During my studies, I developed a strong interest in industrial cleaning processes. I supported my current colleagues with experimental work and, after defending my diploma thesis, I joined the Chair of Processing Machines and Processing Technologies. I became part of the Industrial Cleaning Technologies research group, which consists of five colleagues with various research focuses. My work concentrates on cleaning processes involving highly viscous foods, preferably without water-based cleaning agents—in other words, mainly dry cleaning processes. One prominent dry cleaning method is “flushing” or “push-through” cleaning, which involves using a secondary flushing fluid to displace product from a closed system, such as a pipeline.

## What is your award-winning research about, and what makes it innovative in the field of food safety?

The research that I presented at the Fouling and Cleaning in Food Processing 2025 conference was a collaborative effort between the Chair of Fluid Mechanics, the Chair of Food Engineering, and our own group. Our objective was to deepen the understanding of cleaning processes, specifically flushing in the chocolate industry, and identify areas for improvement.

Our focus was on analysing legacy plants—chocolate production lines not originally designed with hygienic principles and not suitable for cleaning-in-place (CIP). Currently, these lines are typically cleaned using fixed volumes of flushing fluids like cocoa butter at maximum flow rates, which leads to excessive resource consumption. We aimed to provide practical guidance and tools to optimise these cleaning procedures.

We approached the problem from three angles:

1. Simulation: to gain better insights into the cleaning process.
2. Measuring Systems: we tested several technologies at our pilot plant, including a surface acoustic wave sensor, a capacitive measurement system, and an optical sensor. These systems helped us capture the cleaning process over time and determine the actual endpoint of the flushing process. The most promising technology was the surface acoustic wave sensor, which could differentiate between similar chocolate masses effectively.
3. Process Modification: we explored two strategies. The first involved using a reverse pump at the beginning of the process to recover up to 40% of the product before starting the flush. While this didn't significantly improve cleaning efficiency, it was successful in reducing product waste. The second strategy introduced flow regimes—sequences of flushing processes with varying flow rates and durations. We tested seven regimes and achieved up to 30% resource reduction compared to the fixed-volume approach. All these strategies aim to enhance process knowledge, contributing to food safety through adaptive cleaning protocols and system modifications based on detection of critical points.

## What inspired you to explore this particular topic, and what impact do you hope it will have on the industry?

Sustainability, mostly. I believe we must all work to make processes—especially cleaning—more efficient and resource-saving. The hope is that, through our findings, the industry can reduce resource use for cleaning while increasing cleaning frequency. Additionally, our insights might help simplify validation of cleaning protocols.

**What advice would you give to other young researchers pursuing careers in food processing/hygienic design?**

Food processing and hygienic design bring together experts from diverse fields—engineering, microbiology, food chemistry, material science, and process automation. My suggestion is to choose a topic you're truly passionate about and explore its unresolved aspects. You don't need to have all the expertise at the beginning; you'll develop the necessary skills throughout your journey.

**Matti Heide, Research Associate (Dresden University of Technology – TU Dresden)**



# EHEDG Online Congress 2025

## “The Benefits of Keeping It Clean”

On 5 and 6 November 2025, EHEDG once again brought together the global food safety community for the EHEDG Online Congress 2025. Designed to accommodate participants from the Americas, Europe and the Asia-Pacific region, the two-day digital event welcomed hundreds of professionals from across the food industry.

Under the theme “The Benefits of Keeping It Clean”, the congress explored how hygienic design, effective sanitation systems and a strong food safety culture contribute to safe and efficient food production. Through practical industry examples and operational insights, speakers shared how keeping equipment, processes and environments clean directly supports product quality, consumer safety and sustainable operations.

The congress opened with a welcome address by Adwy van den Berg, Director of EHEDG, who highlighted the growing importance of hygienic design in modern food production and the value of collaboration across the global EHEDG community. The event was hosted and moderated by Patrick Wouters, EHEDG’s Development Director, who guided participants through the programme and facilitated discussions.

To encourage interaction and exchange, the congress included two panel discussions, one on each day of the event. These sessions allowed speakers and participants to reflect on the key themes of the presentations.

The first panel discussion focused on sanitation culture and operational excellence. The panel explored how successful hygiene programmes rely not only on technology and procedures, but also on leadership, training and employee engagement.

The second panel discussion looked toward the future of hygiene management, discussing the growing role of automation, digital monitoring tools and smart cleaning technologies in food production environments.

To make the congress accessible worldwide, the programme was delivered in two different time windows, enabling participants from all continents to join the event live. Through the interactive congress platform, attendees were able to participate in discussions, explore sponsor booths, access presentations and resources, and connect directly with experts and industry partners.



### “The Benefit of Keeping It Clean in Mineral Water Factories”

Sophie Daulmerie explored the unique hygienic challenges of mineral water production, where products receive no microbiological treatment. She explained how maintaining hygiene across deep boreholes, extensive piping networks and filling systems requires strict hygienic design and operational discipline. Drawing on Danone’s practices, she highlighted the importance of controlled welding, continuous water circulation, validated CIP processes and rigorous maintenance. Her presentation demonstrated that “keeping it clean” in mineral water production is a continuous effort supported by strong engineering practices and a consistent hygiene culture.

**Sophie Daulmerie**, Hygienic & Aseptic Design Manager (Danone), member of the EHEDG Working Group ‘Design Principles’

### “Effective Sanitation System Is Required for an Effective Food Safety Programme”

Oladipo Adedokun emphasised that sanitation must be implemented as a structured system to effectively manage food safety risks. Addressing microbiological, chemical, physical and allergen hazards, he showed how sanitation programmes rely on clear procedures, training, verification and validation. Using OSI Group’s global sanitation framework as an example, he illustrated how consistent sanitation practices can be implemented across multiple production sites. His presentation highlighted that sanitation is not simply cleaning, but a proactive and systematic process that forms the foundation of a robust food safety programme.

**Oladipo Adedokun**, Sanitation Program Leader Europe (OSI Group)



### “Extended Operational Run & Key Factors for Success”

Serkan Tasci shared insights into managing extended production runs in large-scale bakery operations. While longer production cycles can improve efficiency, they also introduce risks such as biofilm formation, allergen cross-contact and environmental contamination. Serkan explained how these risks are controlled through multidisciplinary teams, baseline sampling, environmental monitoring and hygienic design assessments. His presentation showed that extending operational runs requires strong sanitation performance, equipment optimisation and a culture that prioritises food safety alongside operational efficiency.

**Serkan Tasci**, Senior Director Global Quality System, Bimbo QSR (Grupo Bimbo)



### “Automation and Digitalization Tools for Ensuring Hygiene: Possibilities and Limitations”

Martin Loehrke examined how automation and digital technologies are transforming hygiene monitoring and cleaning processes. He discussed the shift from traditional fixed cleaning procedures toward sensor-supported, condition-based cleaning systems. Emerging technologies such as contamination sensors, biofilm detection and digital twins offer new possibilities for improving hygiene management and resource efficiency. At the same time, Martin emphasised that digital tools complement rather than replace fundamental hygienic design principles and human expertise.

**Martin Loehrke**, Managing Director (LOEHRKE)



### “Building a Sanitation Culture & the Key Programmes That Support This”

Jonathan Norrish focused on the role of people in building a strong sanitation culture. Using Kerry’s Sanitation Culture Wheel, he explained how expectations, communication, engagement and accountability support consistent hygiene performance. Programmes such as the Global Sanitation Standard and the Golden Guardians recognition initiative help reinforce these principles across sites. Jonathan highlighted that while systems and tools are essential, effective sanitation ultimately depends on empowered employees, strong leadership and continuous training.

**Jonathan Norrish**, Regional Sanitation Lead (Kerry)





# EHEDG Meetings in Krakow 2025

## Collaboration, Strategy and Progress in Action

In October 2025, the global EHEDG community gathered in Krakow, Poland, for a series of key events that brought together members from across the network. Spanning several days, the programme combined the Annual Regional Section Poland Meeting, the EHEDG Plenary Meeting, the Full Working Group Day and dedicated Face-to-Face Working Group sessions.

Together, these events created a unique opportunity for collaboration, strategic alignment and technical progress, reinforcing EHEDG's mission to advance hygienic design and food safety worldwide.

### A Strong Start: Regional Section Poland

The week began with the Annual Meeting of the EHEDG Regional Section Poland, welcoming both local and international participants. The event highlighted the continued growth and engagement of the Polish EHEDG community, as well as its important role within the wider network.

Participants exchanged insights on hygienic design practices, regulatory developments and industry challenges, while strengthening connections between manufacturers, suppliers, researchers and authorities. The Regional Section Day once again demonstrated how local initiatives contribute to EHEDG's global impact

by fostering knowledge sharing and collaboration at regional level.

### Plenary Meeting 2025: Shaping the Future

On 14 October, more than 100 EHEDG members gathered for the Plenary Meeting 2025, a central moment for reflection and strategic discussion.

The day opened with presentations from the EHEDG Head Office, Foundation Board and Sub-Committee Chairs, providing updates on ongoing activities, achievements and priorities. These sessions offered valuable insights into the organisation's progress and the direction of its technical and strategic work.

A key highlight of the day was an interactive "House of Commons"-style session, led by members of the Advisory Board. This format encouraged open dialogue and active participation, allowing members to share perspectives on EHEDG's future priorities. Discussions focused on the organisation's strategic goals for the coming years and will contribute directly to the further development of the OGSM framework and the EHEDG Strategy 2030.



Participants also contributed to the EHEDG Timeline, celebrating shared milestones and reflecting on the organisation's development over time.

The day concluded with the traditional Regional Section tasting, offering a more informal setting for networking and strengthening connections across the global EHEDG network.

### Full Working Group Day: Aligning Expertise

On 15 October, the focus shifted to EHEDG's technical core, as over 120 members representing 25 Working Groups came together for the Full Working Group Day.

This session provided a platform for aligning on shared objectives, reviewing working procedures and discussing the future direction of EHEDG's Working Groups. Participants exchanged ideas on how to further strengthen collaboration, improve efficiency and ensure consistency across guideline development activities.

The discussions also addressed the roadmap toward Working Group activities in 2026, with valuable input gathered from participants. These insights will support ongoing improvements in how Working Groups operate and contribute to EHEDG's technical outputs.

The Full Working Group Day highlighted the strength of EHEDG's collaborative model, where experts from different disciplines and regions work together to develop practical guidance for the food industry.

### Face-to-Face Working Group Sessions: From Discussion to Action

Following the plenary and alignment sessions, many participants

extended their stay to take part in face-to-face Working Group meetings. In total, 13 Working Groups used this opportunity to work intensively on their guideline development.

The participating groups included those focusing on Chocolate, Maintenance, Hygienic Integration Systems, Robotics, Dry Materials Handling, Packaging Machines, Heat Treatment, Materials of Construction, Valves, Utilities, Building Design, Welding and Cleaning-in-Place.

These sessions went beyond discussion. Working Group members actively reviewed progress, drafted new content, developed additional chapters and defined next steps for their respective guidelines. The in-person setting enabled efficient collaboration, faster decision-making and deeper technical exchange.

The productive working sessions demonstrated the value of bringing experts together physically to accelerate progress and ensure high-quality outputs.

### Strengthening the EHEDG Community

Across all events in Krakow, one common theme stood out: the strength of the EHEDG community. From regional engagement to strategic discussions and detailed technical work, each part of the programme contributed to a shared goal - advancing hygienic design and food safety.

The combination of formats, from interactive plenary discussions to hands-on Working Group sessions, created a balanced programme that supported both high-level alignment and practical progress.

## Looking Ahead

The outcomes of the meetings in Krakow will continue to shape EHEDG's activities in the coming years. Insights gathered during the Plenary Meeting will feed into the organisation's strategic development, while the work carried out during the Working Group sessions will contribute directly to future EHEDG Guidelines.

With strong participation, active engagement and a clear sense of direction, the different meetings in Krakow demonstrated the value of collaboration within the EHEDG network.

EHEDG thanks all participants, contributors and organisers who made these events a success and looks forward to continuing this work together in the years ahead.





# EHEDG in Krakow by ATT

## A Joint Polish–European Dialogue on Hygienic Design

The EHEDG event in Krakow brought together two complementary formats: a local conference for Polish food and beverage companies and the EHEDG Plenary Meeting. For ATT, co-organiser of the Polish conference and supporter of the plenary preparations, the event marked an important moment of collaboration between the domestic industry and the international hygienic design community.

### A Strategic Sector for Poland and Europe

Poland's food and beverage sector remains one of the strongest pillars of the national economy. It is the largest industrial sector in Poland, consistently contributing a significant share to national manufacturing output and to the country's export performance. In 2024, Polish agri-food exports exceeded EUR 53.5 billion, reaching record levels and strengthening Poland's position among the leading food suppliers in the European Union.

According to international analyses, more than 1,270 food-processing companies operate in Poland, forming one of the most diversified and competitive F&B industries in Europe. The sector plays a central role not only in domestic employment and industrial

activity but also in ensuring the stability and resilience of European food supply chains.

Against this backdrop, the promotion of hygienic engineering and design principles, central pillars of the EHEDG mission, is essential. Cleanability, risk prevention, process control and equipment design that supports food safety are no longer optional features; they are core elements of sustainable, responsible and globally competitive food production.

### Local Engagement, Global Perspective

We are proud that ATT contributed to bringing the EHEDG event to Krakow. The dual-format structure, combining a local Polish agenda with a global plenary, allowed domestic participants to engage with EHEDG in a broader and more direct way than ever before.

The Polish conference addressed practical and highly relevant topics for equipment suppliers, processors and engineering teams. Sessions focused on:



- Hygienic design of equipment and materials, including stainless-steel components, polymer coatings with antibacterial properties, and the implications of EHEDG welding guidelines for cleanability and durability.
- Designing and operating hygienic food production environments, with insights into factory construction, infrastructure elements such as floors and walls, and structural solutions that minimise contamination risks.
- Food safety, risk management and compliance, covering intelligent approaches to designing safe production systems, the impact of Hygienic Design Requirements for Manufacturers (HDRM) on auditing practices, and strategies for maintaining ageing equipment.
- Sustainability in hygienic engineering, particularly the safe reuse of water in F&B production and modernisation pathways that enhance cleanability, product safety and regulatory alignment.

The presence of international EHEDG delegates added significant value. Many contributed ac-

tively to discussions, offering insights from their respective expert groups and national experiences. This interaction helped situate local challenges within a wider European framework and demonstrated how harmonised hygienic design standards support both food safety and operational efficiency.

We extend our sincere thanks to all speakers, Polish and international, for providing clear, evidence-based content and for reinforcing the importance of hygienic design as a shared responsibility across the food supply chain.

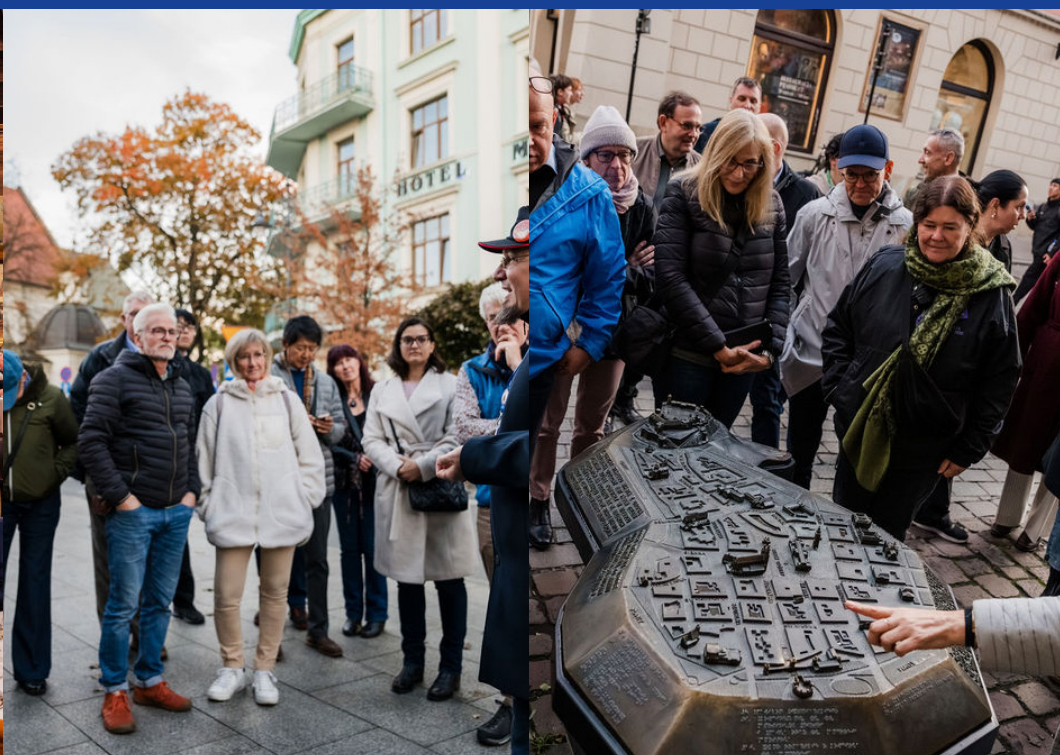
### Strengthening Connections Within the EHEDG Network

For ATT, hosting this event in our home city was an important step in strengthening the relationship between Polish companies and the global EHEDG network. We believe that the discussions initiated in Krakow will help accelerate the adoption of hygienic design standards within the Polish food industry, supporting safer production, improved efficiency and long-term competitiveness in international markets.

### Experiencing Kraków Together

Beyond the official programme, participants had the chance to experience Krakow's atmosphere during informal activities, including guided walks and a joint dinner at Wierzynek, one of Europe's oldest continuously operating restaurants, known since the 14th century as a venue for diplomatic and cultural gatherings. This setting offered an excellent opportunity for continued networking and strengthening professional ties.

### ATT Inox



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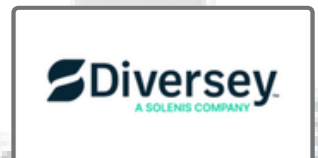
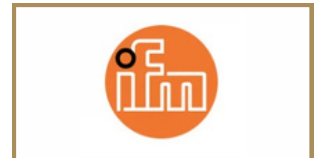
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### Introduction — Samuel Peppin & Bioscan

My name is Samuel Peppin and I am the Managing Director of Bioscan Ltd, a specialist inspection and repair services company focused on improving hygienic integrity in stainless-steel food processing equipment. Bioscan operates internationally, working primarily with infant formula, dairy, nutrition and food manufacturers sectors where hygienic design, contamination control and product safety are absolutely critical.

Our mission is simple but very focused: to reduce contamination risk in food production environments by identifying and repairing defects that traditional inspection methods fail to detect. Cracks, weld defects, impact damage and surface irregularities inside process equipment can create harborage points for microorganisms, compromise cleaning effectiveness and potentially lead to safety incidents, recalls or product loss. Our role is to help manufacturers eliminate those risks before they become failures.

Bioscan's approach bridges the gap between inspection and hygienic engineering practice. Rather than treating inspection as a standalone activity, we align our work with the principles of hygienic design, process safety and lifecycle asset management. We do this by combining advanced non-destructive testing technology, rope-access and confined-space expertise and food-grade welding and

polishing repairs, delivered by a single integrated team. This ensures that when defects are found, they are not simply recorded, they are safely repaired to hygienic standard.

### Contribution to Safer & More Hygienic Food Production

Bioscan contributes to safer and more hygienic production through three core pillars: advanced inspection technology, integrated repair capability and long-term risk-reduction programmes.

The first pillar is our electronic crack-detection technology, which allows us to identify micro-cracks and weld defects that are commonly missed by visual inspection or dye-penetrant testing. Many of our customers come to us after repeated inspections by conventional methods failed to explain elevated microbial counts, recurring contamination events or unexplained cleaning failures. In a number of cases, the defects were in fact present, but were either too small, too complex or located in areas that were difficult to access or interpret visually.

Our technology allows us to detect cracks earlier in their lifecycle, before they propagate or become major structural or hygienic hazards. This not only improves safety, it also supports predictive decision-making and helps processors plan maintenance around risk rather than reaction.

The second pillar is our capability to repair defects immediately, performing food-grade welding and polishing. In many instances, other inspection providers identify cracks but leave the repair responsibility to a separate contractor, which delays resolution and increases downtime. Our approach reduces shutdown duration and ensures repairs are delivered to a hygienic standard.

The third pillar is our development of group-wide inspection programmes for multinational manufacturers. We work with customers to standardise inspection frequency, reporting structure, repair validation and asset-risk classification across multiple sites and countries. This moves crack detection from a one-off exercise to a structured hygienic risk-management process, aligned with internal quality systems and external audit expectations.

Examples of impact include:

- Early detection and repair of cracking inside infant formula spray dryers, preventing powder retention and contamination risk.
- Full-facility inspection of tank and silo assets to support CAPEX planning and safety compliance.
- Crack-risk mapping across multiple production sites to identify systemic design and operational drivers.

In short, Bioscan helps manufacturers move from reactive repair to proactive hygienic asset integrity management.

### Measuring Impact; Safety, Efficiency & Risk Reduction

Measuring the impact of hygienic design and crack-prevention activities is essential, both for internal learning and customer confidence. We assess impact across several dimensions.

First, we track defect detection trends over time. By repeating inspections at defined intervals, we can measure whether the number and severity of cracks reduce as operational behaviours, design modifications or weld-quality improvements are introduced. For some customers, repeat-cracking locations identified during early inspections have subsequently been redesigned or cut-out and replaced, resulting in measurable reductions in recurring defects.



Second, we measure downtime and repair efficiency. Because our inspection and repair functions are integrated, repairs can often be completed in the same shutdown window in which defects are discovered. Customers regularly report reductions in total intervention duration compared to using separate inspection and welding contractors, particularly where rope access or confined-space entry is required.

Third, our work contributes to microbiological performance improvement. While inspection itself is not a microbiological control measure, cracks are well-recognised harborage points. By removing cracks and restoring food-contact surfaces to hygienic finish, our customers frequently observe improved cleaning results and reduced repeat contamination events. In several documented cases, undetected cracks were directly associated with contamination trends that had persisted despite repeated visual or dye inspections.

Finally, we support sustainability and lifecycle optimisation. Early crack detection allows for targeted intervention rather than full-component replacement, extending the service life of major process assets such as spray dryers, silos and other process vessels.

### Innovation & New Developments for Optimised Hygienic Production

Bioscan's innovation strategy is rooted in real-world plant environments, our developments focus on improving safety, accessibility, accuracy and repair quality under challenging operating constraints.

One major area of development has been our gantry and rope-access platforms designed for internal dryer work. Traditional approaches rely heavily on scaffolding, which increases downtime and complicates inspection logistics. Our engineered access systems allow technicians to work safely inside large vessels while covering a greater inspection area in less time, reducing disruption to production schedules and increasing productivity.

We are also investing in further refinement of our inspection data-capture and reporting infrastructure. Our goal is to help customers move from static inspection reports toward asset-integrity datasets that inform maintenance planning, HACCP risk assessment and long-term equipment strategy. This supports alignment with hygienic-design guidance and emerging digital-engineering expectations.

In parallel, we continue to strengthen our training and competency framework for crack detection and food-grade welding within confined-space environments. We see competency assurance as a core element of hygienic engineering, not only for our own team, but also as a standard we encourage across the wider industry.

Where relevant, we align our methodologies with EHEDG principles, particularly around surface condition, accessibility, cleanability and risk-based decision making. Future developments include expanding structured inspection methodologies for tanks, silos and ducting systems, areas that historically receive less focus in hygienic-design inspection programmes despite their role as critical product-contact or secondary-risk assets.

### Why We Are Sponsoring the EHEDG World Congress 2026

Bioscan chose to sponsor the EHEDG World Congress 2026 because we strongly believe that hygienic engineering and inspection practice need to be connected more closely in industry dialogue. Cracks and weld defects are not simply maintenance defects, they are the visible result of design decisions, operational stresses, fabrication methods and lifecycle management. Addressing them effectively requires collaboration across engineering, quality and operations.

The Congress provides a unique forum to share real-world insight from inside operational production environments, environments where theory meets the practical constraints of shutdown windows, production demand, asset age and safety risk. We see our contribution not only as a service provider, but as a partner in knowledge exchange.

Our objectives in sponsoring include:

- Engaging with equipment designers, engineers and quality leaders to strengthen the link between design intent and lifecycle integrity.
- Sharing case-based learning where undetected cracks or poor repairs created risk and demonstrating how structured inspection programmes can prevent recurrence.
- Building partnerships that support safer inspection access methods and repair standards in confined spaces.
- Raising awareness that inspection alone is insufficient, hygienic integrity requires detection, understanding and repair as a continuous cycle.

We also view the congress as an opportunity to listen, to better understand emerging expectations, regulatory direction and technological innovation across the global hygienic-design community.

### Preparing for Future Trends & Challenges

Looking ahead, Bioscan is preparing for a future where food safety expectations continue to increase, assets age further and operational environments become more complex.

Several trends are already influencing our direction.

First, climate-driven energy strategies and process optimisation are changing operating patterns, which can alter thermal stress behaviour and crack development mechanisms. Understanding how these shifts affect material fatigue and hygienic integrity will be an important area of focus.



Second, regulatory and customer-driven scrutiny continues to grow, particularly in infant nutrition, dairy and specialised nutrition manufacturing. We expect greater emphasis on evidence-based asset-integrity management, traceable repair quality and documented inspection methodology. Our work is evolving accordingly, with stronger alignment to structured risk evaluation and long-term performance tracking.

Third, supply-chain complexity means that processors must increasingly rely on assets running closer to capacity for longer periods. This reinforces the importance of early-stage defect detection, proactive repair planning and safe confined-space intervention capabilities that minimise downtime without compromising standards.

Fourth, digitalisation and data integration present opportunities to widen the role of inspection data within plant decision making. Over time, we intend to integrate inspection insights more closely into maintenance strategy, reliability engineering and hygienic-risk modelling.

Above all, our forward strategy remains grounded in a core principle: hygienic safety is not defined by design alone, it is maintained through disciplined inspection, safe access, informed engineering and high-quality repair over the entire life of an asset.

This is the space in which Bioscan operates today, and the space in which we aim to continue contributing to the future of hygienic engineering.



*Samuel Peppin, Managing Director (Bioscan)*



## Clean by design: Turning hygienic engineering into measurable food safety performance

In food and beverage plants, the hygiene battle is rarely lost in headline-making moments. It is usually lost in the quiet places: a dead leg that never drains, a seal that ages faster than expected, a cleaning programme that looks correct on paper but does not reach a critical surface in practice.

That is why hygienic design should not be treated as a static compliance label. It is an operational capability that must perform every day, across products, shifts and changeovers. Done well, it protects consumers and brand equity. Increasingly, it also protects resources, because cleaning is one of the most water-, energy- and chemical-intensive activities in many hygienic processes.

As a global technology group, GEA supports manufacturers across the food, beverage, nutrition and pharmaceutical industries with integrated plants and lines, process technology, machines, components and services. We often act as a plant engineering partner, translating hygienic principles into robust process designs, from layout and interfaces to cleaning strategies and commissioning, to help ensure safe food production at scale. In my role, I focus on flow components and cleaning technology: valves and pumps that sit at the interfaces where product streams are separated, where cross-contamination must be prevented and where

cleaning-in-place (CIP) must be both effective and efficient. In that sense, hygienic engineering is central to “Engineering for a better world”.

### Why hygienic design matters in practice

Founded in 1989, the European Hygienic Engineering & Design Group (EHEDG) connects food producers, equipment manufacturers, universities, institutes and public health stakeholders with a shared goal: advancing hygienic engineering and improving cleaning effectiveness to strengthen food safety and quality. EHEDG does this through practical guidelines, test procedures and certification, training and education and an international exchange platform.

This “from guideline to plant floor” logic is exactly why I value EHEDG’s work. Engineering teams need more than principles; they need common definitions, test methods and practical guidance that stand up in real production environments. As processes become more automated and portfolios more complex, the importance of clarity increases, not decreases.

### The risk landscape is changing fast

Microbiological hazards remain a constant concern.

But the drivers of recalls and consumer impact are broader. GEA recently cited that in 2023, almost half of food recalls tracked by U.S. agencies were linked to undeclared allergens, alongside an overall increase in food and beverage recalls compared with the prior year.

For manufacturers, this means that hygienic design must support not only clean but also validated separation between batches, recipes and allergen profiles.

At the same time, producers are asked to deliver more variety with shorter runs, tighter margins and higher expectations on sustainability. Hygienic engineering is therefore under pressure to deliver two outcomes simultaneously: reliable cleanability and separation, as well as reduced resource use during cleaning, changeovers and start-up.

### Mixproof valves: where design and safe use must meet

Double-seat mixproof valves GEA Mixproof Valve MX are a good example of why hygienic performance is both a design question and a usage question. The promise is compelling: safe separation of two different products or CIP media, enabling simultaneous production and cleaning, improved uptime and fewer changeover losses. But that promise is only realised when hygienic geometry, actuation logic, leakage detection, installation and operating procedures work as one system.



GEA VARIVENT®  
Mixproof valve type MX

This is why the updated EHEDG Guideline 20, “Hygienic design and safe use of mixproof valves,” is so relevant. It reflects today’s reality of highly automated, safety-critical environments and it underlines that safe use is not a footnote. It is part of the engineering requirement.

For equipment and engineering providers, the implication is clear: we must design for drainability, avoid entrapment zones, ensure cleanable transitions and make verification feasible. This at component level and in overall plant and line design, where layout, interfaces, automation concept and commissioning decisions determine whether hygienic intent holds true in the installed reality. For operators, the implication is equally clear: installation and programming decisions can create or eliminate hygienic risk.

### How we measure impact: from audit-ready to business-ready

Hygienic design creates value when it is measurable. While specific KPIs differ by sector and product, a robust measurement approach typically links three layers:

- Food safety and quality indicators: These include sanitation verification trends, environmental monitoring results in critical zones and changeover validation results in allergen-relevant operations. The question is not only “Did we pass today?” but “Is performance stable over time?”
- Cleaning performance and resource use: CIP time per circuit, water and chemical consumption per production hour, energy demand of hot CIP or sterilisation steps and the rate of re-cleaning due to failed verification. These metrics connect hygienic engineering to sustainability and cost.



VARIVENT®  
Shut-off valve type N

GEA Hilge NOVALOBE



- Operational reliability and yield: Hygiene-related unplanned stops, maintenance interventions driven by cleaning stress and yield losses linked to interfaces, purging and product recovery. This layer matters because food safety must be achieved without sacrificing line performance.

In our engineering work, we increasingly frame hygienic design as a “risk-and-resource management” discipline. The best solution is the one that reduces hygienic risk while also reducing cleaning intensity and variability.

- Hygienic automation as a safety layer: Sensors and control logic can support leakage detection, verify actuation cycles, monitor CIP parameters and improve traceability. This does not replace good design, but it makes hygienic performance easier to sustain over the equipment lifecycle.
- Designing for efficient cleaning: Better cleanability often means less aggressive cleaning. Engineering for drainability and cleanable geometries can reduce the need for extended cycles, elevated chemical concentration or repeated cleaning. This is where food safety and sustainability reinforce each other.



In dairy processing, hygienic design is the foundation for consistent quality –supporting reliable cleaning and rapid, validated changeovers.

### **Innovation priorities: verifiable hygiene, not just hygienic claims**

Across the industry, the next wave of hygienic innovation is moving from “believing” to “demonstrating” it is cleanable under defined conditions and in installed configurations.

- Risk-based equipment selection and verification: Hygienic performance is not achieved by a single label alone. Manufacturers benefit from a differentiated risk assessment that considers product characteristics (including allergen profiles), process conditions, cleaning strategy, installation and operating discipline. EHEDG guidelines help translate these factors into practical engineering criteria. Verification should then focus on the installed reality, so that hygienic potential is consistently achieved in daily operation.
- Supporting manufacturers beyond equipment: Many of the biggest hygiene improvements come from application engineering and know-how transfer. Training and shared standards help ensure that hygienic potential is not lost in installation or operation. EHEDG’s training culture is a strong model, because it connects design principles to everyday decisions in plants. For example, services such as GEA SAFEXPERT® can support contamination diagnostics and the validation and optimisation of CIP/SIP effectiveness, helping teams connect hygienic design decisions with measurable plant KPIs.

## Why GEA sponsors the EHEDG World Congress 2026

GEA supports the EHEDG World Congress 2026 in Vienna (October 7–8, 2026) because progress in hygienic engineering depends on collaboration. The congress brings together producers, equipment suppliers, researchers and regulatory stakeholders to align on what “good” looks like, how it can be validated and how it can be scaled.

As an industry, we need forums that allow knowledge exchange beyond individual projects. Sponsorship is therefore not only visibility; it is a commitment to contribute experience, listen to challenges and support the evolution of guidance as technology and risk profiles shift.

## Looking ahead: three challenges hygienic engineering must address

- **Product complexity and allergen matrices:** More product variants and shorter runs increase the importance of validated separation and repeatable changeovers. Hygienic design must support speed without increasing risk.
- **Climate- and supply-chain-driven pressure:** Longer logistics, variable raw material quality and changing environmental conditions can increase microbial pressure. Robust, verifiable hygienic performance becomes a resilience factor.
- **Data-driven expectations and transparency:** Food safety management is becoming more data-centric. Equipment will be expected to provide better traceability of cleaning performance and hygienic state, not only for audits but for real-time operational decisions.

## A practical conclusion

Hygienic design is not a label that can be added at the end of a project. It is a systems capability that connects geometry, materials, automation, installation, operating discipline and verification. When that capability is designed in and measured, the outcome is more stable food safety performance and increasingly, a meaningful reduction in the resources consumed by cleaning and changeovers.

At the EHEDG World Congress 2026, I look forward to exchanging lessons learned with the community and to advancing the shared goal that brought EHEDG members together from the beginning: safer food production through better hygienic engineering; protecting people, products and resources.

## Making resource impact verifiable

Hygienic design can reduce the resources required for cleaning by improving drainability and cleanability, which helps shorten cycles and avoid re-cleaning. To make such improvements comparable and transparent, GEA uses its Add Better ecolabel for solutions that demonstrate improved resource efficiency versus a defined baseline. The underlying assessment and calculations are validated by TÜV Rheinland. In addition, Add Better Consulting supports manufacturers in identifying and prioritizing efficiency and decarbonisation measures at plant level, using a TÜV Rheinland-validated methodology aligned with relevant ISO requirements.



**Bastian Tolle**, Vice President Product Management & Engineering - Valves & Pumps (GEA);  
EHEDG Advisory Board Member



## Please introduce yourself and your organisation

For over half a century, from the mobile machine to the industrial production plant, ifm, as an expert for holistic automation and digitalisation solutions, has offered the right solution for every step and stage of a value chain. Sensors in agricultural machinery and stationary manufacturing plants for production, processing, packaging and cold-chain management provide relevant data that ensure efficient and safe processes. Process data is transmitted via reliable industrial communication to higher-level systems, where our software solutions convert it into actionable insights. Maintenance requirements and process deviations can be recognised at an early stage, enabling an appropriate, planned response and significantly reducing the risk of productivity and quality losses.

As the Vice President of Global Industry Management for Food and Agribusiness, together with my worldwide team, I am responsible for ensuring that ifm supports our customers with the best service and most innovative solutions for automation and digitalisation. At ifm, we aim to ensure that food is produced **safely** and consistently at the highest **quality, cost-effectively**.

## How does your organisation contribute to safer or more hygienic food production?

First of all, at ifm, we focus on three key areas in the food and agribusiness sector: food safety, food quality and cost efficiency. Food safety is the foundation for everything else. Without safe processes, our customers cannot reliably guarantee product quality in the long term. Cost efficiency also declines when unsafe production processes increase material consumption due to increased waste.

ifm supports companies with its products and solutions to make processes safer and process environments easier to clean. One example is our IO-Link master. Thanks to its IP69 protection class and materials, it is so robust that it can withstand the mandatory cleaning processes. It can be installed in the field without additional control cabinets, i.e. on the machine itself, where it can collect sensor data decentrally and transmit it to the control system via the fieldbus. This innovation avoids control cabinets that can only be cleaned with extreme caution, as well as long, extensive cable runs, another potential breeding ground for bacteria.

In addition, ifm now offers over 800 hygienic products with more than 20 EHEDG-certified product groups. These include sensors for monitoring temperature, pressure, conductivity, flow or level, as well as inductive sensors for position detection.

However, the advantages of IO-Link go far beyond simple and hygienically safe decentralised wiring. IO-Link sensors not only transmit the actual measured value, but also the temperature at the same time. In addition, further information, such as diagnostic data from the sensor, is also available. IO-Link, therefore, also makes production processes more transparent, thereby positively affecting food safety, food quality and efficiency.

### How do you measure the impact of hygienic design within your company or for your customers?

It is not easy to give a direct answer to this question, as we ultimately supply automation solutions to our customers, manufacturers and OEMs alike. They can certainly provide more detailed insights into the improvements they achieve by using IO-Link. What we can measure, however, is the industry's continuously growing interest in IO-Link. Over the past five years, sales of our IO-Link masters have more than tripled and the market-leading food manufacturers are integrating the technology.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

As already mentioned, we offer our customers a comprehensive portfolio of EHEDG-certified products that enable them to control their processes and increase production safety. For example, we provide pressure sensors with a virtually indestructible ceramic measuring cell. Experience has shown that conventional metal membranes

are very susceptible to defects. As a result, metal parts and the oil used for pressure transmission can come into contact with the food. In addition, residues can accumulate in the defective sensor, leading to bacterial growth.

With the TCC temperature sensor, we offer a sensor that detects when the drift exceeds the defined tolerance range. This technology ensures the quality and safety of production at all times, even between calibration intervals and prevents rejects.



ifm temperature sensor TCC

thus also greater safety in applications such as the CIP process. These sensors precisely record every step of the cleaning process, helping prevent cross-contamination.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?



ifm flush pressure sensor with display

My team and I firmly believe that, by working together as one, we can achieve food safety. We can achieve food safety through joint action and continuous, open exchange among all stakeholders; producers, OEMs, and suppliers of automation solutions. EHEDG offers the ideal environment for this. Through EHEDG, we at ifm have already gained significant, relevant expertise that has greatly benefited our customers. We want to actively contribute to ensuring that this essential exchange can continue to take place at this high level in the future.

Our goal as a company this year is to further increase awareness of the relevance of food safety among our customers and, where possible, beyond. The United Nations Sustainable Development Goals (SDGs) provide us with important guidance in this regard. If, in addition to our economic goals, we can contribute to preventing contamination in food production and thus reduce unnecessary waste of raw materials through our educational work and solutions, then we consider that a success.

**Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?**

Ultimately, we can only move forward if we continue to work with associations such as EHEDG, as well as with market leaders, OEMs, suppliers and end users and if we act proactively in certain situations rather than react.

We have learned a lot from COVID, especially about the complexity of the supply chain. We have learned that we need contingency plans to deal confidently with technological disruptions, the collapse of supply chains or the loss of supply sources. After a long period in which regulations and rules were globally relevant, we are now seeing increasing regionalisation in product approvals. The regulations naturally increase the complexity of launching a product globally to improve food safety further. However, our global presence plays to our advantage here, as our national branches enable us to remain close to the target market and its requirements. The international status means we can still act quickly and appropriately.

The bottom line is that ifm is well-positioned to meet the challenges that may lie ahead.





*Johan van Niekerk, Vice President of Global Industry Management for Food and Agribusiness (ifm)*



**Please introduce yourself and your organisation**

My name is Joachim Zipp, Global Market Segment Manager Food and Pharma at WIKA.

The WIKA Group is a global market leader in pressure and temperature measurement. The company also sets the standard in the measurement of level, force and flow and in calibration technology.

WIKA combines hygienic design with high-quality measurement technology for a best fit for highest customer value in Food & Beverage processes. With application driven instrumentation we work based on strength in risk prevention and hygienic design, including global approvals supporting sustainability in customer processes by enhancing efficiency.

Today the family-run business has a global presence with 11,200 employees.

WIKA's unique experience and know-how make sensing technology smarter, add more value and prepare it for a sustainable future, This is "Smart in sensing".



WIKA PG43SA

**How does your organisation contribute to safer or more hygienic food production?**

WIKA's measuring instruments are developed with hygienic design principles to prevent microbiological contamination and ensure product quality. They comply with international standards such as:

- EHEDG, 3-A Sanitary Standards and regional Food safety legislation
- Designed for CIP (Cleaning in Place) and SIP (Sterilisation in Place) processes, ensuring easy cleanability and process safety.

WIKA offers smart sensing technology that enables real-time monitoring of key process parameters, helping maximise product quality and production efficiency. Features include:

- True Drift Detection: Advanced temperature sensors continuously monitor calibration drift, alerting operators before deviations impact product safety. This ensures compliance and supports predictive maintenance.
- Self-Diagnostics: Instruments like DMSU21SA and DMSU22SA detect diaphragm ruptures and anomalies in real time.

**Specialised Instruments for Food Safety**

- In-line Process Transmitters (DMSU22SA): Patented technology for pressure measurement in sanitary applications, reducing water and cleaning agent consumption and minimising cross-contamination risks.
- >40 different Sanitary Sensors: Approved by EHEDG and 3-A, designed for accurate pressure, level and temperature measurement in hygienic environments.
- Solutions for UHT Processes: Instruments like DMSU21SA and TR21-B ensure safe ultra-high-temperature processing.

**Beyond products, WIKA offers:**

- Calibration and maintenance services worldwide.
- Consulting for hygienic instrumentation selection and compliance documentation.
- Global service network for commissioning and lifecycle management.

**Rotary Machine IIoT Solutions**

Through collaboration with Asystem, WIKA extends its capabilities to rotary machine monitoring like pumps and agitators using IIoT technology:

- **Predictive Maintenance:** Asystem's sensors track vibration, temperature and acoustic signals to detect early signs of wear or failure.
- **Cloud-Based Analytics:** Data is processed securely for actionable insights, reducing downtime and improving reliability.
- **Food Safety Impact:** By preventing unexpected machine failures, these solutions help maintain hygienic conditions and continuous production.

### How do you measure the impact of hygienic design within your company or for your customers?

#### Dairy Industry: Reducing Cleaning Media and Water Consumption

In dairy processing, even small dead spaces can dramatically increase cleaning effort. A study conducted with the Technical University of Munich / Weihenstephan demonstrated that replacing conventional Tpieces with WIKA's in-line hygienic instruments significantly reduces the amount of hot water and cleaning chemicals required during CIP/SIP. Thanks to dead space free integration, customers achieve substantial daily savings in media consumption while improving hygiene and overall process sustainability.

#### Food & Beverage Production: Faster Cleaning and Lower Downtime

Producers who upgraded to WIKA's in-line instrumentation reported markedly shorter cleaning cycles and reduced consumption of water, energy and detergents. These improvements translate into faster batch changeovers and less downtime, contributing directly to higher production efficiency and more stable operations across food and beverage facilities.

#### Mobile Tanks: Preventing Batch Loss

For applications involving mobile pressurized tanks, often stored for long periods without supervision, WIKA's IIoT-enabled monitoring solution provides early pressure deviation alerts and automated documentation. Customers benefit from avoided batch losses, elimination of unplanned downtime and reliable data trails for regulatory compliance. These measurable gains highlight how digital and hygienic design elements jointly

strengthen process integrity.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

WIKA is driving several innovations that directly support safer, cleaner and more efficient hygienic production. These patented developments stand out for their impact on sustainability, product quality and operational efficiency in Food & Beverage processes.

#### InLine Process Transmitters (DMSU22SA)

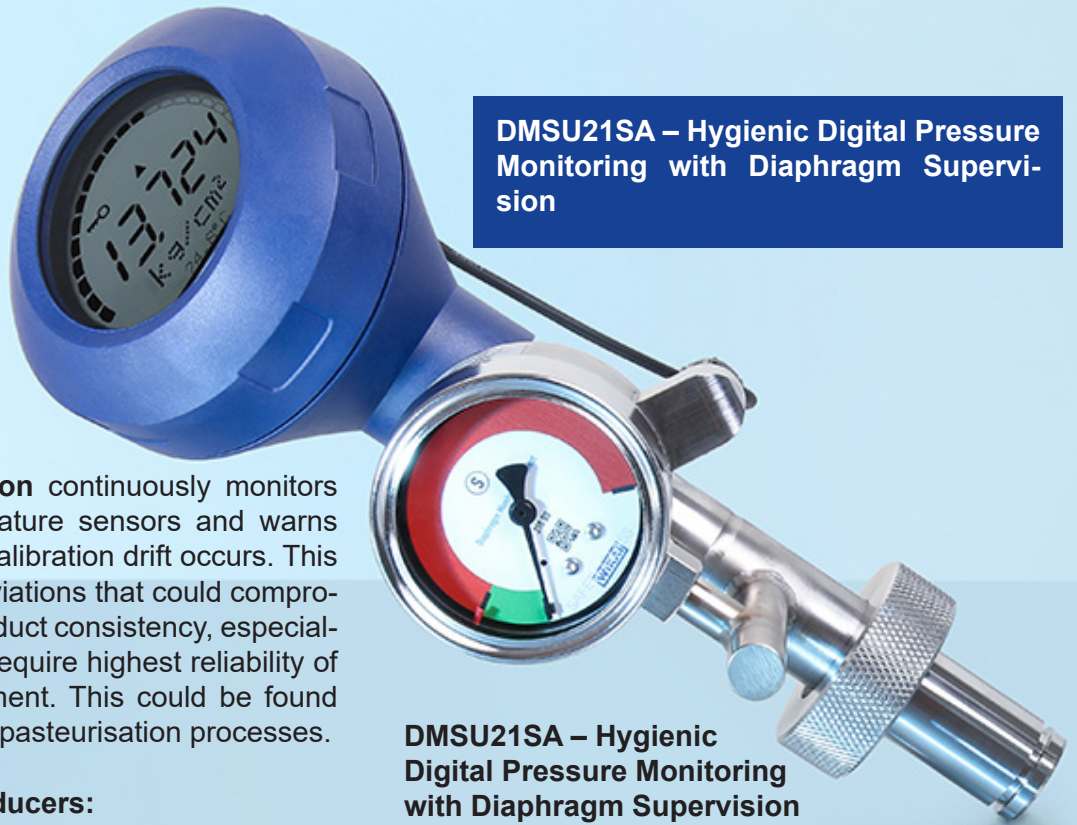


#### InLine Process Transmitters (DMSU22SA)

WIKA's patented inline pressure measurement technology enables **dead space free and fully hygienic installation**, eliminating typical contamination risks associated with conventional Tpieces. This optimised flow geometry reduces cleaning effort and supports more reliable process control.

#### Benefits for food producers:

- Shorter, more efficient CIP/SIP cycles
- Lower water, energy and detergent consumption
- Faster product change overs and more up-time
- Reduced risk of cross contamination and food downgrading



**DMSU21SA – Hygienic Digital Pressure Monitoring with Diaphragm Supervision**

**TrueDrift Detection**

The **TrueDrift Detection** continuously monitors the stability of temperature sensors and warns operators early when calibration drift occurs. This prevents unnoticed deviations that could compromise food safety or product consistency, especially in processes which require highest reliability of temperature measurement. This could be found in heat treatments and pasteurisation processes.

**Benefits for food producers:**

- Early prevention of quality deviations
- Increased process reliability and safety
- Less unplanned maintenance and fewer interruptions
- Reduced batch losses and higher consistency across production runs

These patented innovations reflect WIKA’s commitment to combining hygienic design with advanced sensing technology—helping manufacturers increase productivity while meeting the strict hygiene and sustainability requirements of modern food production.

**DMSU21SA – Hygienic Digital Pressure Monitoring with Diaphragm Supervision**

The DMSU21SA offers **continuous diaphragm monitoring** and digital pressure measurement for sanitary applications, ensuring early detection of diaphragm failures before they pose a contamination or quality risk.

**Benefits for food producers:**

- Early warning before any contamination can occur
- Increased process safety in aseptic production through realtime supervision
- Reliable pressure monitoring in UHT and other demanding processes

**InLine Thermowell TW61 in combination with temperature transmitters: TR21-B and TR22-B**

The EHEDG certified in-line thermowell design allows temperature measurement **directly in the product flow in a pipe or tube**, without creating dead spaces—ensuring hygienic compliance and excellent thermal response.

**Benefits for food producers:**

- Hygienic, dead space free installation
- Fast and accurate temperature readings
- Optimised cleanability and reduced CIP/SIP resources
- Easy to calibrate without opening the process

**Diaphragm Gauges (Hygienic Diaphragm Monitoring)**

WIKA’s patented hygienic diaphragm gauge with the dry sensing technology provides **integrated diaphragm monitoring**, immediately identifying any loss of diaphragm integrity.

**Benefits for food producers:**

- Instant detection of diaphragm damage
- No risk of contamination with a fill fluid
- Increased product safety in sensitive processes
- Reduced risk of unnoticed contamination events

## Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

WIKA prepares for future industry demands by focusing on four key areas that directly address global challenges such as climate change, evolving hygiene regulations, increasing supplychain complexity and technological disruption.

### Digitalisation & Predictive Sensing

WIKA expands its portfolio of IIoT-enabled, smart hygienic sensors that support realtime monitoring, predictive maintenance and higher process transparency which is crucial as automation and data-driven production accelerate.

### Sustainability & Resource Efficiency

Through hygienic design and inline instrumentation, WIKA helps customers reduce water, energy and cleaning media consumption. Ongoing investments in innovation centres and test labs ensure sustainability remains a guiding design principle.

### Active Standards Participation

By contributing to Standard committees, WIKA anticipates regulatory developments early and incorporates future hygienic design requirements into its instrumentation.

### Global Support & Knowledge Transfer

WIKA supports customers with globally certified hygienic equipment and shares expertise through training, guides and industry content, helping companies manage complex regulations and skills shortages.



## Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

WIKA's decision to sponsor the **EHEDG World Congress 2026** is rooted in its longstanding commitment to advancing hygienic design, food safety and innovation supported by precise, reliable measurement technologies.

WIKA's sponsorship reflects a shared mission with EHEDG: promoting safe, efficient and hygienic production within the global food and beverage industry.

- **Strengthen visibility** as a leader in hygienic design sensors
- **Showcase innovative sensing technologies** to global experts
- **Exchange knowledge** with regulatory bodies, academia and industry specialists
- **Support the global EHEDG community** and drive forward best practices and new guidelines
- **Deepen customer relationships** and explore strategic collaborations



*Joachim Zipp, Global Market Segment Manager Food and Pharma (Wika)*



# STÄUBLI



## Please introduce yourself and your organisation

My name is Sebastian Lagarde and I serve at Stäubli as Global Market Leader Food for the Robotics Division. In addition to that role, I'm also Global Market Leader for Pharma & Medical.

Stäubli is a global industrial and mechatronic solution provider with four dedicated Divisions: Electrical Connectors, Fluid Connectors, Robotics and Textile, serving customers who aim to increase their productivity in many industrial sectors. Stäubli currently operates in 28 countries, with agents in 50 countries on four continents. Its global workforce of 6,000 shares a commitment to partnering with customers in nearly every industry to provide comprehensive solutions with long-term support. Originally founded in 1892 as a small workshop in Horgen/Zurich, Switzerland, today Stäubli is an international Group headquartered in Pfäffikon, Switzerland.

Stäubli Robotics has been at the leading edge of food industry automation for decades, working with partners and customers to develop systems that automate applications from primary processing to secondary packaging and intralogistics, including pick and place, sorting, cutting, deboning, portioning, packaging and palletising. Stäubli Robotics' unique product portfolio contains 4 and 6 axis industrial robots, mobile robotics and Automated Guided Vehicles.

Automation offers clear advantages in food safety and quality, particularly with the rise of hygienic robots. Food-grade robots from Stäubli Robotics accomplish this and more, enabling new levels of efficiency and productivity with fast, ultra-precise robots.

## How does your organisation contribute to safer or more hygienic food production?

Stäubli's food robots follow European Hygienic Engineering & Design Group (EHEDG) guidelines for hygienic design, which are widely regarded as the gold standard.

Stäubli robots epitomise key aspects:

- **Cleanability:** Easy to clean and able to withstand intensive washdown processes with high-pressure water jets, detergents, and disinfectants (up to pH-value 2 – 12).
- **H1 food-grade oil compatibility:** Designed to work with H1 food-grade or "hygienic" oil (HO) with no loss in performance.
- **Surface and structure:** Smooth surface free of crevices, no external cables or connections, and non-protruding screws. Specially treated, corrosion-resistant casing with particle-repellent finish. Fully encapsulated structure (IP67).
- **Pressurisation:** Contaminants are prevented from entering the internal components.

To support the food industry's complex workflows, Stäubli Robotics offers a comprehensive portfolio of HE (humid environment) robots modified to maintain process reliability in harsh environments.

For example NOAL SA, a leading Argentinian cheese manufacturer, commissioned a fully automated production line in which Stäubli robots perform core tasks. One of the main reasons for choosing the robots is their hygienic design. In new production line, three Stäubli robots handle six tons of soft cheese per hour. The robots are directly integrated into the production of (naturally unpackaged) soft cheese.



## How do you measure the impact of hygienic design within your company or for your customers?

We use and follow EHEDG Guidelines to design our products. Our goal is to be compliant with rules and regulations concerning hygienic design. For our customer, this means improvement for

- Easy cleanability
- Resistance to cleaning and disinfection protocols
- Reduce risk of contamination
- Easier maintenance
- No cover

This drive to reduce operational downtime due to hygienic design improvement.

**What innovations or new developments are you introducing to help manufacturers optimise hygienic production?**

In adherence to EHEDG hygienic design guidelines, our R&D is dedicated to prioritising FDA-certified materials, specifically for surfaces that come into direct contact with food, such as coatings and seals. Optimising seals to prevent water retention and minimise the risk of bacterial growth is vital to us, as is ensuring waterproofing up to IP69K standards and maintaining the use of H1 food-grade oil without compromising performance. To support these goals, we have initiated an internal programme focused on validating cleaning and disinfecting protocols, working closely with leading chemical suppliers in the industry.



The TX2-200 HE robot from Stäubli is specifically adapted to production environments with high humidity and splash water.



The TS2 HE SCAQRA robots are ideally suited for pick-and-place Q, handling and sorting tasks, thus completing the product range for humid environments.

Stäubli Robotics offers a comprehensive portfolio of HE (humid environment) robots modified to maintain process reliability in harsh environments.



### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

As leaders in the food industry, we are eager to showcase our latest solutions and innovations at a globally recognised congress. EHEDG, a renowned and trusted food safety organisation, is hosting this event and it is vital for us to be present as we have been partners for over a decade. Our objectives include promoting the hygienic design of our robots, engaging with industry experts in hygienic design and food safety and reinforcing our partnerships within the food sector. This event offers a valuable opportunity to gain insights into and address the emerging challenges in hygienic design for the food industry.

### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

Continuous improvement in research and development is central to advancing hygienic design, with a particular focus on addressing customer needs and offering straightforward solutions for the food industry. Sustainability and total cost of ownership considerations are crucial aspects that are integrated into this approach. Ensuring the highest standards of hygiene and food safety involves close collaboration with partners and experts in the field. This collaborative effort not only aims to enhance product design but also seeks to meet the evolving demands of the industry efficiently and responsibly.



**Sebastian Lagarde, Global Market Leader Food - Robotics Division (Stäubli)**



**VIRAVIX**  
engineering

### Please introduce yourself and your organisation

Viravix – experts in tailor-made CIP process & data-driven CIP optimisation. We know how to solve most challenging issues related to CIP process and hygienic issues in food industry.

Simply put, Viravix is an “one-stop shop of CIP related topics”: we know exactly how to design new CIP process, redesign, upgrade and rebuild existing CIP process, modify existing process equipment to match the best CIP process, install and fine-tune cleaning systems for a specific conditions of your food or beverage factory.

Over 11 years, we have delivered:

- 70+ projects for food and beverage manufacturers.
- 17+ tailor-made CIP processes with complex hygienic issues.
- 155 000 hours of expert support for our clients.

We use best-practices in CIP process and deliver reliable, stable, sustainable and efficient cleaning.

CIP systems are often seen as simple, yet issues persist because cleaning is not only about flow, temperature, concentration and time, but also about the equipment being cleaned. Using IoT and data-driven methods, we identify and quantify issues, reengineer and validate CIP processes, and ensure controlled, deviation-free cleaning.

Our mission is to make CIP process efficient, stable and transparent. Our goals are:

1. Share 500, 000 hours of CIP expertise each year using IoT solutions and AI.
2. Save 165 million m<sup>3</sup> of water in Europe in cleaning process in food industry.

### How does your organisation contribute to safer or more hygienic food production?

Viravix approach combines engineering expertise, process knowledge and digital technologies.

Our unique recipe:

- Strong competences of our process engineers, who design, build, launch and serve different CIP systems and processing equipment.
- Years of experience with CIP process and hygienic issues.
- Capabilities in validation and testing of processing equipment related to CIP issues.
- Experienced programmers that can get the data from any CIP system.
- IoT expertise with hands-on experience in integration of IT solutions with CIP process.
- High quality of mechanical works and automation services.

First, we engineer and develop CIP process. Especially we are good at modernisation and upgrading existing CIP systems. All our solutions are designed in line with cGMP and EHEDG recommendations, with a strong focus on maximum hygiene and minimal resources consumption.

Second, we validate CIP processes, from design and installation review through verification of operational parameters and performance. As part of validation, we can perform different kinds of tests and inspections, such as inspection of tanks, heat exchangers, piping and open surfaces.

Third, we enable digital process control using IoT monitoring and data analytics. Our proprietary digital solution (software + hardware) FlowQeeper allows us to connect to any CIP system, collect quantitative equipment data (temperature, CIP phase durations, water and chemical consumption and more). This gives us real-time visibility into the CIP process, without the need to be physically present. All steps, deviations, anomalies and alarms are captured, enabling full control and fast identification of improvement opportunities with the support of our engineers.

This is our unique formula:

$$\begin{aligned}
 & \text{IoT + CIP process data +} \\
 & \quad + \text{Experienced process engineers +} \\
 & \text{+ On-site CIP Validation + Inspections CIP process Inspections +} \\
 & \quad + \text{Engineering services + Mechanical services + Automation} \\
 & \quad = \\
 & \text{Best-in-class CIP process}
 \end{aligned}$$

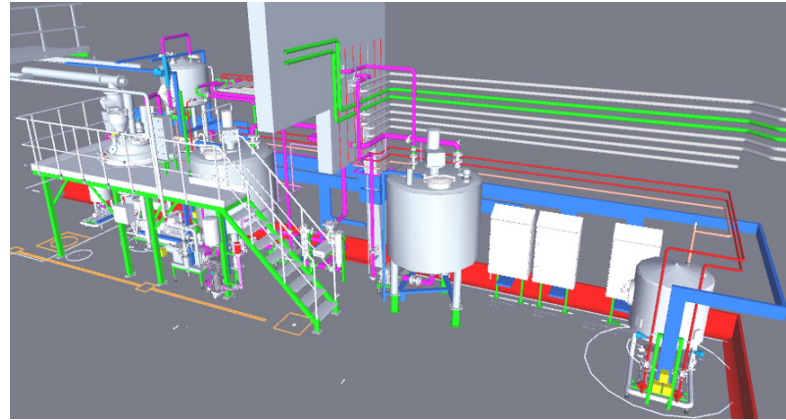
Our objective is consistent and measurable CIP performance:

- reliable hygienic effectiveness
- validated and reproducible food safety
- optimised water, energy and chemical consumption
- alignment with internationally recognized CIP best practices
- transparent benchmarks that can be objectively compared and audited

As our team puts it: “We want to make CIP process efficient for everyone. We can make it work right. We can make sure that food manufacturers sleep well at night, without worrying about hygiene and product quality. We guarantee cleanliness with top class efficiency”.

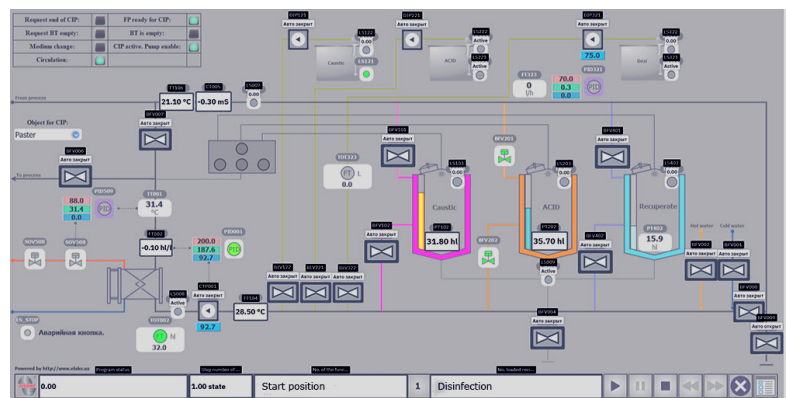
**How do you measure the impact of hygienic design within your company or for your customers?**

We measure the impact of hygienic design in two complementary ways as CIP experts.



First, through full CIP engineering or re-engineering projects. Our full solution includes full digitalisation of CIP process. We provide easy way to track and trace CIP process with all data about it. Data is prepared by our process engineers and converted into costs: time, energy consumption, water use, water waste including waste of detergents.

Second, through targeted evaluation and validation of existing CIP processes. We deliver a detailed report based on one or several CIP cycles, covering key performance metrics such as time, energy consumption, water use and waste.



The impact of our hygienic solutions is visible in two areas.

First, we reduce negative outcomes. After our work, microbiological contamination cases linked to equipment are virtually eliminated. In a beverage industry project, recurring microbiological issues caused by an improperly configured pasteuriser were resolved by modernising the CIP process. By adjusting cleaning regimes, upgrading automation and partially re-designing the equipment, contamination incidents were fully eliminated.

Second, we increase positive indicators. Plant teams gain more understanding and confidence in CIP operation: we provide training and operators or engineers become better equipped to maintain hygiene and act correctly in non-standard situations. Cleaning quality improves, each CIP cycle becomes stable and predictable, with no unnoticed unclean areas and unplanned downtime.

Thus, we measure hygienic design impact both through product safety (absence of contamination, successful audits) and operational efficiency (resource savings, cleaning stability and speed). Taking together, these metrics demonstrate that our solutions deliver real results.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

Our main innovation focus is how to share our CIP expertise with as many operations as possible.

In Q2 2026 we will launch new website [www.cipexperts.com](http://www.cipexperts.com) where professionals interested in CIP process will find solutions, examples of CIP process designs, benchmarks for CIP process and successful solutions to most common issues related to equipment.

Our dream is to create digital assistant for CIP process. Something similar to ChatGPT that knows everything about your specific CIP process.



That is why we created “FlowQeeper”. FlowQeeper —freeware for industrial cleaning that enhances human expertise and decision-making by digitising expertise of our process engineers about specific CIP process of our customer. Through project experience, we identified key challenges in industrial cleaning: the human factor

and lots of challenges related to equipment. As a result, manufacturers often face incomplete cleaning, hygiene risks, product losses, excessive resource consumption, and unplanned downtime.

At Viravix, we decided to close this gap by building a solution that combines ML, AI & our expertise to provide real-time, expert guidance for cleaning optimisation directly on the shop floor.

FlowQeeper:

1. Monitors — hardware and software that connects to PLC or collects data from IoT sensors about cleaning processes.
2. Analyses —analyses patterns and automatically generates flexible compliance-ready reports based on the knowledge and expertise of Viravix engineers.
3. Empowers — operator receives real-time alerts and simple guidance via online or on-premise application. Operator may connect with our experts for online support and troubleshooting.

This enables food manufacturers to achieve:

- Instant expert-level decision-making
- Maximum hygiene
- Minimum resource consumption

In one of pilot projects, FlowQeeper helped the plant achieve:

- -22% water consumption
- -12% energy use
- €30K savings on satellites
- <12-month payback

We see digital solutions like FlowQeeper as a new era for the food industry. Imagine a chatbot that an operator or quality manager can ask: “Why has detergent consumption increased?”, and the system analyses CIP logs and provides a concrete answer and recommendation. That is exactly what we’re building toward.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

We are passionate about CIP process. Becoming a sponsor of the EHEDG World Congress 2026 we want to share this passion and connect with like minded people who want to achieve best practice in CIP process.

EHEDG is a community of like-minded professionals and we greatly value the networking and prestige of being part of it.

Participation brings us closer to potential customers and partners for whom hygienic design is as essential as it is to us.

Our sponsorship contribution to the 2026 World Congress is a way to support industry dialogue around hygiene and safety. We strongly believe that events like the EHEDG World Congress move the industry forward, enable knowledge exchange and create space for innovation. We want not only to attend, but also to be among those who make it possible.

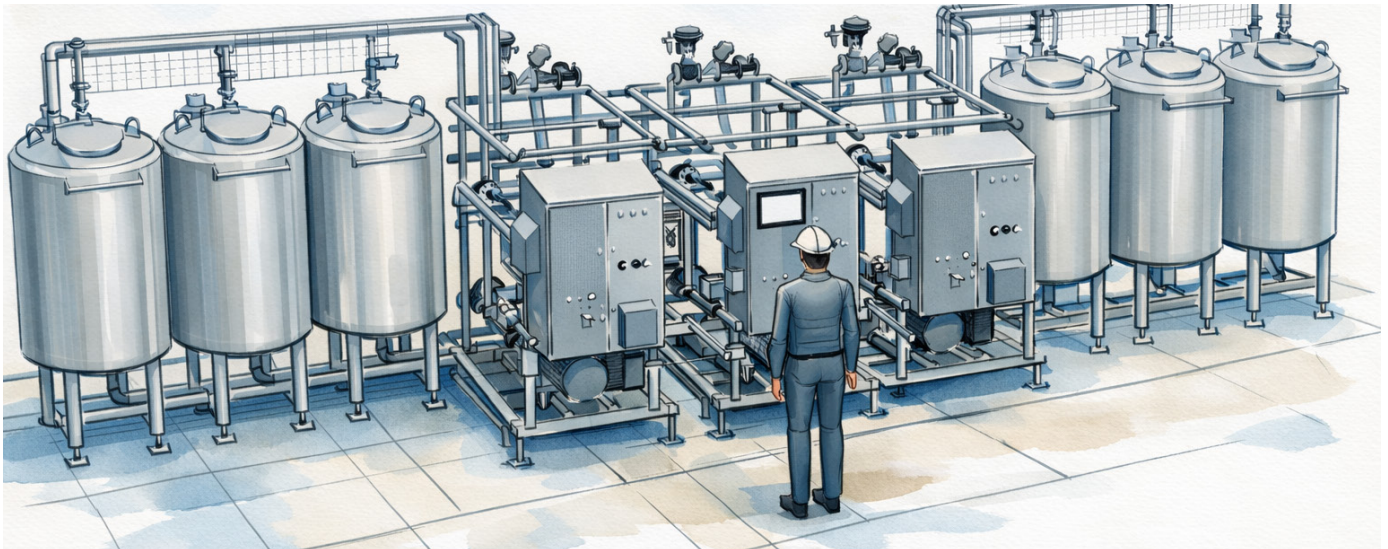
### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

We believe that recent innovations such as IoT and AI are ready for adoption in food industry. Those technologies will impact the way we run operations and hygienic standards will be adopted.

We want to enrich EHEDG library with digital solutions, continuously improve and apply them in CIP process with full compliance to EHEDG guidelines .

From a technology perspective, our key response is further digitalisation and intelligent CIP optimisation. Today, our solutions make CIP highly transparent: we see all cycle's parameters and deviations in real time. We plan to introduce ML and AI elements so CIP systems can learn and recommend optimal actions to personnel. Our goal is to turn CIP into a fully controlled, predictable and documented process, where every deviation is detected and corrected before it can create a product risk.

Finally, sustainability and resource efficiency will be defined by trends. Water, energy and chemicals are now under increasing scrutiny not only in terms of cost, but also environmental impact. We expect manufacturers to measure the true cost of each cleaning cycle; liters of water, kilowatt-hours of energy, carbon footprint and so on. These metrics will become as important as production KPIs. Viravix is preparing customers for this reality.



**Vasyl Mazov, Board Member**  
(Viravix Group OU.)





**BLÜCHER®**

A **WATTS** Brand

## Raising the Bar for Hygienic Design in the Global Food Industry

### **BLÜCHER's commitment to food safety, sustainability and EHEDG collaboration**

Hygienic design is no longer a “nice to have” in the food and beverage industry. It is a critical prerequisite for food safety, operational efficiency and regulatory compliance.

For BLÜCHER, hygienic design has been a core principle for decades and a commitment strengthened through long-standing collaboration with EHEDG.

### **A long-term commitment to hygienic engineering**

“BLÜCHER has been a member of EHEDG since 2011 and we see it as both a responsibility and an opportunity to contribute to raising hygienic standards in the food industry worldwide,” says **Bo James Andersen, Global Commercial Lead – Food & Beverage at BLÜCHER.**

BLÜCHER is an international manufacturer specialising in stainless steel pipes, fittings, channels, and drainage systems for industries where hygiene is critical, including food and beverage production. From underground pipe systems to floor-level channels and drains, BLÜCHER delivers complete stainless steel solutions designed with hygiene in

mind and aligned with EHEDG guidelines.

“Our mission is to go beyond minimum requirements and actively support the development of best practice in hygienic design,” Bo James Andersen explains. “That is why our engagement with EHEDG is so important.”



**BLÜCHER® EuroPipe**

One of BLÜCHER's key contributions to safer food production is its exclusive use of stainless steel across its product portfolio. Stainless steel is widely recognised as one of the most hygienic materials available, thanks to its smooth surface, corrosion resistance, cleanability and durability.

"We produce exclusively in stainless steel — from pipes in the ground to channels and floor drains," says Bo James. "This ensures a consistent hygienic perspective throughout the entire drainage and piping system, fully aligned with EHEDG principles."

By designing systems that minimise crevices, standing water and areas where bacteria can accumulate, BLÜCHER helps food manufacturers reduce contamination risks while maintaining efficient cleaning and maintenance routines.

### Measuring impact through sustainability and transparency

Hygienic design is closely linked to sustainability, and BLÜCHER places strong emphasis on measurable environmental performance. Stainless steel is not only hygienic but also fully recyclable, making it a long-term, responsible choice for food production facilities.

BLÜCHER has Environmental Product Declarations (EPDs) for key product ranges, including **BLÜCHER® Drains**, **BLÜCHER® Channels**, and **BLÜCHER® EuroPipe**. These EPDs document the most important environmental impacts of the products throughout their lifecycle.

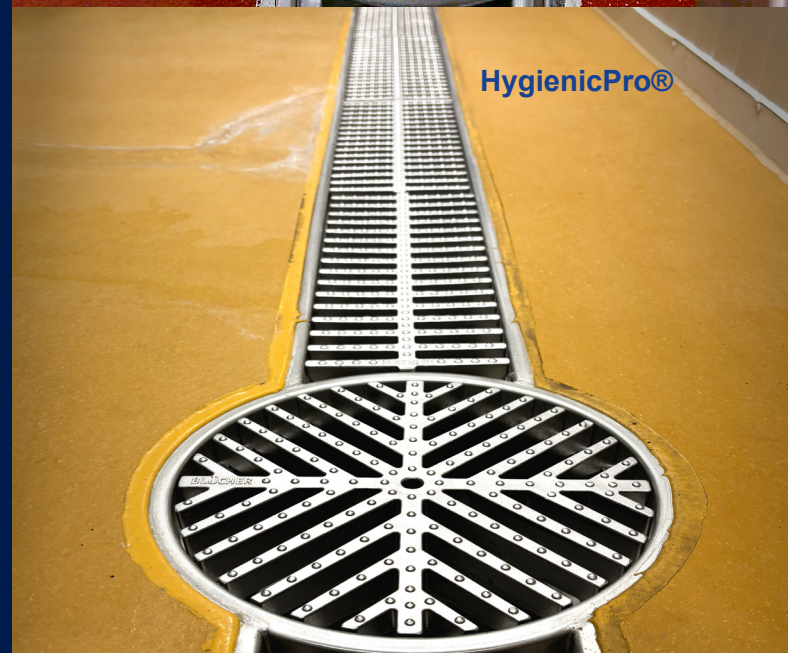
"EPDs allow us and our customers to make informed, transparent decisions," Andersen notes. "They show how hygienic design, material choice and sustainability can go hand in hand."



BLÜCHER® EuroPipe



HygienicPro®



HygienicPro®



MeatCatcher

### Innovation driven by real-world challenges

Innovation at BLÜCHER is closely tied to practical challenges observed in food production environments. One example is the introduction of the MeatCatcher, developed specifically to address issues related to meat waste and fat in processing facilities.

The solution includes large filter boxes with drain holes designed to collect meat waste and fat before it enters the pipe system.

“The purpose is simple but crucial,” Bo James explains. “By preventing meat waste and fat from entering the pipe system, we reduce the risk of blockages and hygiene-related issues further downstream.”

This type of targeted innovation supports both operational reliability and hygienic performance, helping manufacturers avoid costly downtime, maintenance issues and potential food safety risks.

### Supporting EHEDG and global knowledge exchange

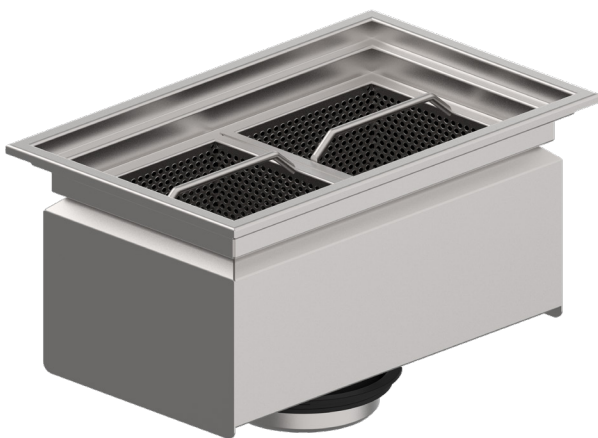
BLÜCHER’s decision to sponsor the EHEDG World Congress 2026 reflects its long-term commitment to collaboration, knowledge sharing and continuous improvement within the industry.

“We have sponsored EHEDG events before with great success,” says Andersen. “BLÜCHER is an organisation in strong forward motion, and we want to support and participate at multiple levels.”

The World Congress provides a platform for networking, exchanging knowledge and aligning on future challenges related to food safety and hygienic engineering.

“Our goal is very clear,” Bo James adds. “We want to contribute to achieving high food safety standards globally, without contamination.”

MeatCatcher



**Preparing for future challenges in food safety**

Looking ahead, BLÜCHER sees education and competence development as essential to meeting future demands in food safety and hygienic design. Regulatory requirements continue to evolve, supply chains are becoming more complex and expectations for documentation and transparency are increasing.

To address this, BLÜCHER invests heavily in training and educating employees across countries and departments. Several employees have completed dedicated courses focused specifically on hygienic design and food safety.

“We want to give customers confidence that our solutions meet the highest hygienic standards,” says Bo James. “Through training and certification of our employees, we can document our knowledge , both for our customers and in our marketing.”

This internal focus ensures that customers receive consistent, expert guidance regardless of location, and that hygienic design principles are embedded throughout BLÜCHER’s organisation.

**Setting a higher standard together**

Through its products, documentation, innovation and active engagement with EHEDG, BLÜCHER continues to play a role in advancing hygienic engineering in the global food industry.

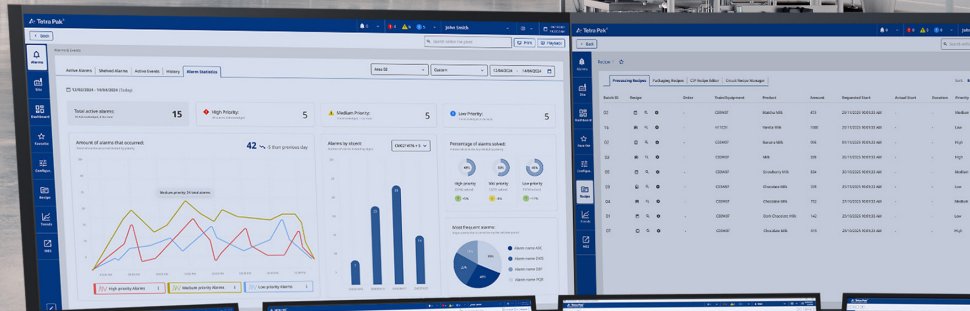
“Hygienic design is not static,” Bo James concludes. “It requires collaboration, knowledge sharing and a willingness to continuously improve. That is exactly what we aim to support, together with EHEDG and our customers.”



**Bo James Anderson, Global Commercial Lead – Food & Beverage (BLÜCHER)**

**Training courses at BLÜCHER**





## Tetra Pak – Protects What's Good

### Introduction

My name is Stefan Ståhl, I serve as Food & Equipment Safety Manager at Tetra Pak and Chair of the EHEDG Nordics Regional Section.

I lead a dedicated team of specialists, located around the world, that support our Tetra Pak® equipment product owners and solution designers in the areas of quality, food safety and hygienic design.

Our mission, 'Protects What's Good,' reflects our commitment to ensuring food safety and quality across the globe. Tetra Pak as the world leader in food processing and packaging solutions, are dedicated to advancing hygienic design and sustainability in the food industry. We strive to deliver innovative technologies that safeguard food integrity while minimizing environmental impact.

### About Tetra Pak®

Tetra Pak® is a world leader in food processing and packaging solutions. Together with customers and suppliers, we help to ensure access to safe, nutritious food for hundreds of millions of people in over 160 countries, while at the same time striving to reduce our environmental impact.

More than 70 years ago, we embarked on a journey to help make food safe and available,

everywhere. Today, we continue to innovate to protect food, people and the planet. We do this by developing food processing and packaging solutions tailored to meet the needs of global customers. Using the latest science and technologies, our dedicated team of innovators, collaborators and experts work together relentlessly to find answers to some of the biggest challenges facing the global food and beverage industry today.

We have brands in the cheese, dairy, powder, prepared foods, ice cream, beverage, plant-based beverage and 'new food' businesses to find ways to move forward.

### How Tetra Pak Contributes to Safer and More Hygienic Food Production

Tetra Pak has pioneered numerous technologies that enhance food safety and hygienic design. Our aseptic processing and packaging solutions allow food to remain safe and fresh without preservatives, reducing waste and ensuring global access to nutritious products. We collaborate with industry leaders and regulatory bodies to set benchmarks for hygienic engineering, ensuring that our design is aligned with EHEDG standards. Our partnerships with food manufacturers worldwide enable us to implement cutting-edge solutions that optimise production efficiency while maintaining the highest hygiene standards.

Tetra Pak® food safety specialists are active members of the EHEDG Regional Sections and they support delivery of EHEDG Advanced Hygienic Design Training on behalf of EHEDG. We also actively lead and support many of the EHEDG guideline developments and updates, lending our knowledge and expertise to support the industry in improving hygienic design.

Our Food Safety Specialists participate in the Global Food Safety Initiative's (GFSI) benchmarking requirements for Scope JI and Scope III and we see our commitment to EHEDG and its objectives, as a critical part of this wider industry commitment.

I am recently appointed Chair of the EHEDG Nordics Regional Section, with the ambition to further grow the engagement in EHEDG in the Nordic.

In addition to this, Dean Scopes from Tetra Pak in UK, continues as the Advisory board member.

### Measuring the Impact of Hygienic Design

At Tetra Pak, we measure the impact of hygienic design through rigorous performance metrics, including reductions in contamination risks, improvements in operational efficiency and sustainability gains. For example, our latest aseptic filling lines have demonstrated a 30% reduction in water usage and a 20% decrease in energy consumption, contributing to both food safety and environmental stewardship. We also conduct regular audits and case studies to validate the effectiveness of our solutions in real-world scenarios.

### About Food Safety and Hygienic Design at Tetra Pak®

Hygienic design is about ensuring that all equipment designed, manufactured or sold by Tetra Pak® complies with regulations and standards for hygienic design and food contact materials and articles. We provide solutions that support our customers in producing and delivering food that is safe and available everywhere.

The health and safety of the end consumer is ensured by applying the principles of hygienic design, as well as the requirements for food contact materials.



Tetra Pak®  
homogenizer

Tetra Pak® homogenizers are high-pressure systems designed for efficient food processing, improving texture, stability and shelf life in products such as dairy, sauces and plant-based beverages. Built with robust stainless-steel components and smart automation, they ensure precise pressure control and easy clean-in-place (CIP) for maximum hygiene. Their hygienic design minimizes hard-to-clean areas, reduces contamination risks and supports aseptic processing.

Sustainability is central to their design. Energy-saving technologies, optimized hydraulics, and variable frequency drives reduce power consumption, while quick CIP cycles lower water and chemical use. Long service life, recyclable materials and low-maintenance features help manufacturers cut environmental impact while ensuring food safety and quality.

Per Kempe, Food Safety Specialist Tetra Pak® and member of the EHEDG Nordics Regional Section, says: "Hygiene is a key aspect of Homogeniser in production and has increased in importance greatly over the years. Food safety is a growing concern for consumers and manufacturers alike. We need to ensure that our equipment is designed to meet the highest standards of hygienic design and that our processes eliminate risks where bacteria can grow."

Aseptic pulsation dampers are essential for process stability. They absorb pressure fluctuations during homogenization, protecting pipes and components from stress and vibration. Constructed with seamless stainless steel and hygienic seals, these dampers maintain aseptic conditions and eliminate dead zones where bacteria could grow. Automatic cleanable aseptic dampers take hygiene and efficiency further by integrating CIP/SIP functionality directly into the damper design.

## EHEDG Yearbook

This allows cleaning without disassembly, reducing downtime, water and chemical use while ensuring compliance with stringent food safety standards. Together, homogenizers and aseptic dampers deliver reliability, sustainability and uncompromised hygiene in aseptic production environments.

### Innovations and New Developments

Innovation is at the heart of Tetra Pak's strategy. We are introducing advanced digital tools for predictive maintenance, ensuring equipment reliability and minimizing downtime. Our certified hygienic components comply with EHEDG guidelines and we are investing heavily in R&D to develop next-generation packaging materials that are both safe and sustainable. Upcoming product launches will include smart packaging solutions that enhance traceability and consumer confidence.

### Tetra Pak® Tubular Heat Exchanger and EHEDG Certification

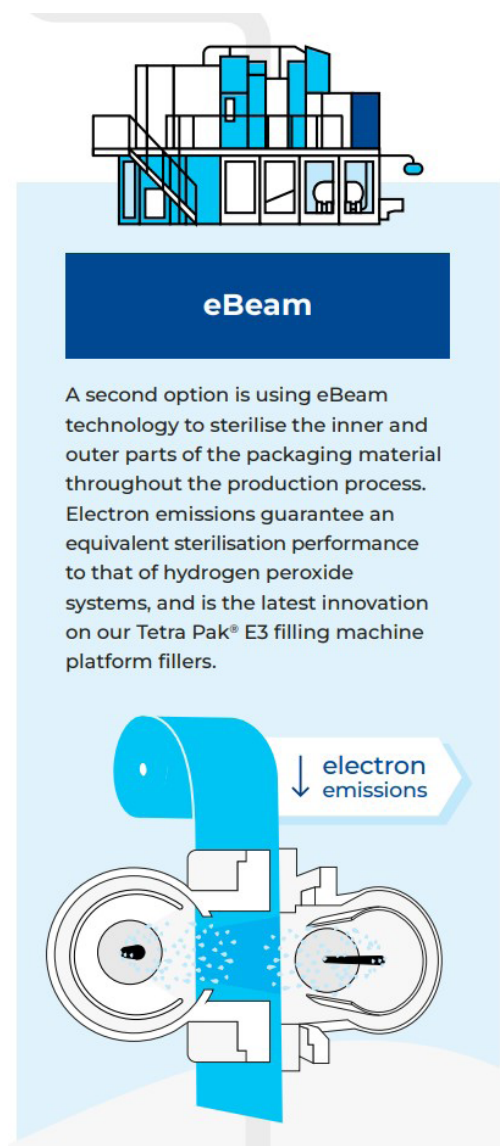
The Tetra Pak® Tubular Heat Exchanger is engineered for high-performance thermal treatment of liquid foods, including viscous products and those with particles. Its robust stainless-steel construction and modular design ensure durability, flexibility and efficient heat transfer while maintaining product quality. Floating ends are incorporated to allow thermal expansion and prevent stress on tubes, ensuring reliability and extending equipment life under high-pressure and high-temperature conditions. Insulation and optimized flow paths further enhance energy efficiency.

Hygienic design is central to its engineering. Smooth surfaces, advanced sealing technology and minimal dead zones prevent contamination and enable effective cleaning. In 2020, Tetra Pak® became the first in the industry to achieve EHEDG certification for tubular modules, validating compliance with stringent European hygienic standards. This certification confirms that the equipment can be cleaned thoroughly and supports food safety throughout processing, reinforcing Tetra Pak's commitment to innovation, sustainability and hygienic excellence.

### Food safety with sustainability performance

Using electron beams instead of traditional hydrogen peroxide, eBeam sterilization technology guarantees packaging material sterilisation performance while reducing customers' operational costs and improving their environmental performance by reducing electric power consumption.

The Tetra Pak® E3/Speed Hyper is a filling machine for aseptic packaging of liquid food, which utilises two eBeam lamps to sterilise the inner and outer part of the packaging material through the production process. Electron emission guarantees an equivalent sterilisation performance as that of hydrogen peroxide systems.



A second option is using eBeam technology to sterilise the inner and outer parts of the packaging material throughout the production process. Electron emissions guarantee an equivalent sterilisation performance to that of hydrogen peroxide systems, and is the latest innovation on our Tetra Pak® E3 filling machine platform fillers.



EHEDG Certified Tetra Pak® Tubular Heat Exchanger



## Tetra Pak® E3/Speed Hyper

The world's fastest aseptic carton filling machine



### Why We Are Sponsoring the EHEDG World Congress 2026

Tetra Pak® has a long history and a close relationship with EHEDG and this is set to continue, as we are both aligned on the significance of hygienic design aimed at the increasing industry food safety requirements.

Sponsoring the EHEDG World Congress 2026 aligns perfectly with our mission to advance food safety globally. This event provides an unparalleled platform for networking, knowledge exchange and collaboration with industry experts. We continue to sponsor the EHEDG World Congress as part of this commitment and our joint ambitions for the future. This is wholly in line with our customer-centric approach and commitment to improving our supply chain through our stakeholders.

The EHEDG World Congress is the perfect platform through which we can continue to share our mission, vision and strategic goals with the wider food industry and our EHEDG partner members, who are all committed to food safety through hygienic design.

**Stefan Ståhl**, Food & Equipment Safety Manager  
(Tetra Pak)

### Preparing for Future Trends and Challenges

#### Tetra Pak® New Food Applications and Hygiene

Tetra Pak® is pioneering solutions for the emerging New Food sector, which includes precision fermentation and biomass fermentation to produce alternative proteins and functional ingredients. Through its New Food Technology Development Centre in Karlshamn, Sweden, Tetra Pak® helps innovators scale production, optimize processes, and reduce time-to-market while ensuring consistent quality and safety. These facilities provide advanced expertise in fermentation, heat treatment, and aseptic handling for next-generation food products.

Hygiene is at the core of these applications. Tetra Pak® integrates aseptic processing and packaging technologies to maintain sterility throughout production. Automated clean-in-place (CIP) and sterilisation-in-place (SIP) systems, hygienic component design and precision aseptic dosing allow sensitive ingredients, such as probiotics and vitamins, to be added after UHT treatment without

compromising safety. This combination of innovation and hygienic design ensures that New Food products meet the highest standards for food safety, sustainability and consumer trust.

#### Closing Statement

At Tetra Pak, 'Protects What's Good' is more than a slogan, it is a promise to deliver safe, sustainable and innovative solutions for the global food industry. We look forward to continuing our collaboration with EHEDG and industry partners to advance hygienic design and ensure a safer future for all.





**elesa+Ganter**<sup>®</sup> **EG**

### **Please introduce yourself and your organisation**

My name is Uwe Klotz and I am the team leader of product development of Hygienic Design standard parts at Otto Ganter GmbH & Co KG, the German mother company of Elesa+Ganter Austria. Together with my team I am responsible for the development of new standard parts in Hygienic Design.

Elesa+Ganter is a worldwide sales joint-venture offering the widest product range of standard machine elements for the machinery industry. With its two headquarters – Elesa S.p.A, Monza, Italy and Otto Ganter GmbH & Co KG, Furtwangen, Germany – Elesa+Ganter looks back at more than 50 years of cooperation. Elesa is specialised on standard parts made of engineering plastics while Ganter has its expertise in metal parts. As already mentioned, we at Ganter, are responsible for developing standard parts in Hygienic Design. Standard parts that are designed for maximum hygiene and safety.

### **How does your organisation contribute to safer or more hygienic food production?**

Due to their very specific properties, standard parts in Hygienic Design can assist the production process in these sensitive areas and facilitate the manufacture of products with a long shelf life, which are free from preservatives. Those standard parts combine high surface quality, freedom from dead spaces, non-scooped outer surfaces and sealed bolting areas. A sealing concept based on FEM calculations ensures reliable contact pressure after installation.

Using standard parts in Hygienic Design also means that the time and material needed for regular cleaning is significantly reduced – which also noticeably lowers operating costs. Less and shorter cleaning work (that can be up to 25% of the production time) leads to: more time available for production, less fresh water consumption, lower energy consumption, less cleaning agent required, less production of waste water, lower total costs and saving of resources.

### **How do you measure the impact of hygienic design within your company or for your customers?**

Basically, all starts with the designing and developing of standard parts in Hygienic Design. It needs a lot of expertise to design new products and in the next step to produce and assemble them respectively. This can be a very cost intense process for our customers and, furthermore, needs qualified staff. Not every company has the capabilities to fulfil all standards required.

This is when Elesa+Ganter comes in. With our specialised team we concentrate on developing, producing and assembling HD standard parts. We are in steady exchange with customers and knowledge leaders of the food industry to better understand their requirements.

Furthermore, we take over the EHEDG certification process for our products. The EHEDG certification reduces the need for our customers to make special product tests before using them in their production.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

In developing new products, we deliberately go a step further to support truly hygienic production. One example is our hygienic-design screws, which are complemented by specially designed sockets that ensure the screw surfaces remain free from scratches or damage.

By combining these sockets with aluminum material and a rounded hex geometry, torque is transferred smoothly to the screw head without causing surface wear. This prevents micro-damage where contamination could accumulate, helping manufacturers maintain the highest hygiene standards while also improving durability and reliability during installation.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

For Eles+Ganter it is an honour having the chance of being a sponsor of the EHEDG World Congress 2026 in Vienna.

It is the perfect opportunity to connect, exchange insights and build relationships with leading experts of the food industry. With the sponsorship, we, furthermore, contribute to guarantee safety for products and people in the food production sector in the future.

For us, the EHEDG World Congress is the ideal platform to discuss current and future challenges, share new solutions with knowledge leaders of the industry. This is vital for us in order to be able to develop new standard components in Hygienic Design.

### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

Looking ahead, we are actively preparing for future trends and challenges in food safety and hygienic engineering by combining product innovation with knowledge transfer. A key element of this approach is our involvement in EHEDG innovation training, which enables us to stay closely aligned with the latest hygienic design guidelines, regulatory developments, and best practices.

By continuously educating both our teams and our customers, and by incorporating these insights into our product development, we help manufacturers implement hygienic solutions that are not only compliant today but also resilient to future requirements.





## Hygienic design and HACCP compliance Building food safety into every process with SMC

Food safety is a non-negotiable priority in the food and beverage industry. It protects public health, safeguards consumer trust and ensures compliance with strict legal and regulatory frameworks. Any contamination introduced during food production can severely affect product quality and may result in costly recalls and long-term brand damage. For this reason, impeccable hygiene throughout the entire production process is essential.

At SMC, food safety is understood as a holistic concept. Hygienic design, regulatory compliance and operational reliability must work together seamlessly. This approach also shapes the work of SMC, where global standards are translated into practical, application-oriented solutions for food manufacturers and OEMs.

### Regulations as a design driver, not an obstacle

The food industry is one of the most tightly regulated sectors worldwide and rightly so. Only through strict legislation and clearly defined standards can the high expectations placed on food production be guaranteed. These regulations have a direct and significant impact on the design of machinery and automation components used throughout the industry.

They influence :

- Choice of materials used in production and processing equipment
- Adoption of clean and hygienic design principles
- Total cost of ownership of the machinery

Materials must be carefully selected to ensure that no harmful or toxic substances can migrate into food products. This applies not only to components in direct product contact, but also to parts operating in hygienic zones or splash water areas. Clean and hygienic design, combined with high corrosion resistance, is essential in production areas that require regular washdown with aggressive cleaning agents.

SMC integrates these requirements directly into product development. Regulatory compliance is not treated as an afterthought, but as a core design criterion from the earliest development stages. The result is automation technology that supports food safety by design and simplifies validation and audit processes for machine builders and end users alike.

## HACCP as a cornerstone of food safety

HACCP (Hazard Analysis and Critical Control Point) is one of the most important foundations of food safety management systems worldwide. It provides a systematic approach to identifying, evaluating and controlling food safety hazards, whether biological, chemical or physical.

The seven core principles of the HACCP concept include:

- Hazard analysis
- Identification of critical control points (CCPs)
- Definition of critical limits
- Monitoring of CCPs
- Definition of corrective actions
- Verification procedures
- Documentation and record keeping

Compliance with HACCP requirements ensures the production of safe, high-quality food products that meet legal standards and protect consumer health. These requirements also place high demands on machine design and automation components. Equipment must not only perform its intended function efficiently but must actively prevent contamination and support hygienic operation.

Based on many years of experience with food industry standards, regulations and safety concepts, SMC has developed a comprehensive range of clean and hygienic design products. These solutions support food manufacturers and OEMs in meeting HACCP requirements reliably and consistently.



**Hygienic design fitting KFG2H-E series:** EHEDG-certified hygienic design for safe, easy-to-clean and reliable food processing; FDA & EU 1935/2004 compliant, IP69K

## Clean design stainless steel cylinder CG5-X2977 series:

Designed for wet areas in food and pharmaceutical production, these cylinders feature smooth, corner-free geometry for fast and reliable cleaning; FDA & EU 1935/2004 compliant



## Clean and hygienic design in practice

Clean and hygienic design goes far beyond visual cleanliness. It considers materials of construction, component geometry and surface finish in detail.

For example:

- Surfaces in contact with food must be very smooth to prevent microscopic niches where pathogens could grow
- External angles and geometries are designed to prevent liquid pooling
- Gaps, dead spaces and dirt traps are reduced to a minimum

These design principles are critical for effective, soil-free cleaning during service especially in environments where non-stop operation is common and machine availability is paramount.

SMC's clean and hygienic products meet many of the demanding requirements of the food industry. They are specifically designed for use in environments with frequent cleaning cycles, splash water zones and areas with food contact.

## Premium components for the toughest wash-down environments

Food production environments are demanding. Components must withstand high humidity, aggressive cleaning agents and continuous operation without compromising performance or hygiene.

With its range of clean and hygienic design products, SMC offers premium-quality components for the most challenging washdown applications. For the exterior of cylinders, tubing and fittings, only materials are used that are compliant with FDA (Food and Drug Administration) requirements and EU Regulation 1935/2004 for materials intended to come into contact with food.



**HF2B-SFDA in-line bacteria filter for safe food air:** 99.99% filtration (0.01 µm), LRV ≥ 9, FDA-compliant, NSF-H1 lubrication, 500 l/min flow.

This material selection provides a clear benefit for manufacturers:

- Fast and efficient cleaning
- Reliable compliance with regulatory standards
- Reduced risk of contamination

At the same time, it delivers tangible operational advantages.



**HF1-AC-D-X7000 Air Combination Unit:** NSF-H1 grease, stainless steel parts, clean design, ISO 8573-1 compliant, up to 8,000 l/min, easy maintenance with element indicator.



### Hygienic compressed air, an often-overlooked prerequisite requirement.

In modern food production, compressed air is a critical utility. Wherever it comes into direct or indirect contact with products, packaging or hygienic zones, its quality becomes a decisive factor for food safety, system reliability and compliance.

SMC addresses this with its HF1 and HF2 hygienic air preparation filters, designed for sensitive applications in the food and beverage industry, pharmaceuticals, medical technology, and clean automation.

A defining feature of the HF series is its consistent hygienic design. All materials comply with strict food-contact and hygiene regulations, including FDA requirements and the Japanese Food Sanitation Act. Antibacterial surface treatments and the

use of NSF-H1 food-grade lubricants help minimise microbial growth and contamination risks.

In terms of performance, HF1 and HF2 filters provide multi-stage filtration down to 0.01 µm. Particles, bacteria, oil aerosols, and oil vapours are reliably removed. Activated carbon elements further reduce residual oil content, supporting compliance with ISO 8573 compressed air purity classes required for high-quality food production.



**HF2-BAC Antibacterial Air Combination Unit:** Sanitised compressed air: LRV ≥ 9, JIS L 1902 antibacterial ≥ 4, oil ≤ 0.003 mg/m<sup>3</sup>, FDA-compliant, NSF-H1 grease, 800 l/min, modular design.



Clean compressed air protects both the final product and pneumatic components alike. It reduces wear, prevents malfunctions and contributes to longer service life and lower maintenance effort.

The modular HF2 system allows flexible combination with regulators, dryers and other air preparation components, enabling customised solutions tailored to specific process requirements. The compact HF1 series is ideal for space-constrained installations without compromising filtration performance.

From an economic perspective, hygienic air preparation significantly reduces Total Cost of Ownership. Cleaner air lowers the risk of unplanned downtime, costly contamination incidents, supports HACCP and FSSC 22000 compliance and strengthens confidence during audits.

## Efficiency, availability, and total cost of ownership

The use of hygienically optimised components not only improves food safety, it also enhances operational efficiency. Faster and easier cleaning processes reduce downtime, save working hours and lower the consumption of water, cleaning agents and energy.

A proactive approach to hygienic and clean design from the inception of a new process line results in:

- Higher machine availability
- Lower Total Cost of Ownership
- Reduced resource consumption
- Greater long-term process stability
- Improved product quality

In 24/7 production environments, these advantages can quickly translate into measurable economic value.

## Solutions that adapt to your processes

Food production processes are rarely static. Product variants, batch sizes and market demands change frequently. Automation solutions must therefore adapt to the process.

SMC designs its products and systems to meet the demanding requirements of continuous operation. Durable, reliable components are combined with modern system solutions in areas such as predictive maintenance and energy efficiency. This ensures stable operation even under the most challenging conditions.

SMC supports customers locally with application expertise, while drawing on the strength of a global organisation. An expert team active in 83 countries contributes specialised know-how, supported by five global technical centres, two of them located in Europe. This structure enables both standard and customised solutions to be implemented efficiently and reliably.

## EHEDG and the future of hygienic engineering

Hygienic design continues to evolve. Standards, technologies and expectations are constantly advancing. Supporting platforms such as the EHEDG World Congress is therefore a natural extension of SMC's commitment to food safety.

EHEDG provides a unique forum for knowledge exchange, collaboration and the further development of hygienic engineering principles. Participation and sponsorship reflect a clear intention: to actively contribute practical automation expertise, exchange insights with industry peers and help shape future best practices.

## Preparing for tomorrow's challenges

Climate change, stricter regulations, complex supply chains and rapid technological progress demand solutions that are flexible, robust and sustainable.

SMC addresses these challenges by:

- developing energy-efficient and resource-saving automation technologies
- supporting flexible and scalable production concepts
- closely monitoring regulatory developments
- integrating intelligent and digital solutions for greater transparency and control

Hygienic design remains a fundamental pillar of food safety, but it must be combined with innovation, efficiency and sustainability. By embedding hygiene into every component and every process step, SMC supports food manufacturers in meeting today's requirements while preparing for tomorrow.

Discover more on SMC web:  
[www.smc.eu/en-eu/solutions/food/food-safety](http://www.smc.eu/en-eu/solutions/food/food-safety)



*"With global expertise and local application know-how, SMC helps food manufacturers achieve the highest standards in hygienic production."*



**Markus Fasching, Industry Sales Development Food Expert (SMC Austria)**



Hi, my name is Deb Smith and for the last 15 years I have been the Global Hygiene Specialist for Vikan.

Founded in 1898 and headquartered in Denmark, Vikan is proudly owned by the Vissing Foundation, a non-profit charitable foundation dedicated to supporting medical research, sustainable energy and helping marginalised children and young people. Vikan Ownership - Vikan

Guided by strong ethical values, Vikan's mission is to use collective hygiene and regulatory knowledge to develop the world's most effective professional cleaning and food handling equipment and expert advisory services, while making a positive difference to people and the planet.

As the global leader in the manufacture and supply of cleaning and food handling equipment and pioneers in this field, Vikan is always seeking to develop new and improved products that support better food safety and higher food quality. Our most recent innovations have focused strongly on incorporating hygienic design principles, as promoted in Europe through the European Hygienic Engineering & Design Group (EHEDG) and in the US through 3-A SSI, into the design of our equipment.

Vikan have been company members of EHEDG since 2012 and regularly sponsors EHEDG events, both at a national and international level. Personally, I have been involved with EHEDG since 2004 and, with the sup-



port of Vikan, I am now an active member of the organisation. Currently, I sit on the EHEDG Advisory Board, am Co-Chair of the UK Regional Section, Chair of the Foreign Bodies Working Group and have presented on hygienic design many times, both on behalf of EHEDG and at EHEDG events.

Vikan take the making of effective, efficient equipment of good hygienic design very seriously, but that's more difficult than you might think. Innovative materials, patented technologies, advanced manufacturing processes, it takes all of this and more to come up with breakthroughs like our multi-award winning Ultra Safe Technology (UST) brushware range **Ultra Safe Technology - Vikan**



Everything we do features hygienic design thinking, from the safety and sustainability of the materials we use, to the functionality and hygienic design of the equipment we develop, it's right at the heart of the Vikan design philosophy.

All Vikan colour-coded tools are made with EU and FDA food contact-compliant materials and our Technical Team is passionate about driving sustainability and food safety. Over the past three years, they have worked tirelessly on two projects, The By-Products Project and The Bio-Base Project, related to the use of sustainable, food-safe plastics. **Sustainability - Vikan**

### The By-Products Project

#### Aims:

- To investigate potential sources of food contact compliant (according to EU 10/2001 and EU 2022/1616), recycled polypropylene (PP) and, if successful,
- to utilise these plastics to reduce CO<sub>2</sub> emissions and the amount of virgin plastic used by Vikan.

So far, the project has resulted in the transition of 30 Vikan products, and a saving of approximately 60 tons of virgin plastic material per year. A third-party validated review of production, to assess the impact on CO<sub>2</sub> emissions, showed a saving of approximately 32% compared to standard PP in the Eco-Invent database.

### The Bio-Base Project

#### Aims:

- To investigate the use of plastics made from used cooking oil, instead of crude oil, in Vikan food contact compliant tools.
- To utilise these materials to reduce the carbon footprint of Vikan products.
- To achieve ISCC certification for these products.

To date the Bio-Base Project has achieved ISCC certificate for four product types (34 colour variations).

All new products are developed hygienic design principles in mind, with particular focus on one-piece or fully moulded construction, making them easy to take apart and put back together again without the need for tools, having smooth, sloped surfaces and avoiding places where contamination can get trapped and be difficult to remove.

Additionally, Vikan work closely with the food industry, leading industry organisations (including EHEDG), research partners and professional networks to strengthen food safety, hygiene and best practise across the global food and beverage sector.

Our collaborations ensure that our solutions reflect the latest scientific knowledge, regulatory developments and technical innovation and demonstrates our commitment to continuous improvement, knowledge sharing and raising industry standards. You can find more about technical collaborations in our Knowledge Hub.

### Product spotlight: HyGo

Following many requests from the food industry, and 2 years of development, testing and trials, Vikan launched HyGo - a colour-coded mobile cleaning station tough enough to withstand harsh food manufacturing environments but light and manoeuvrable enough to make it easy to use.



Designed to improve hygiene efficiency and with Hygienic Design principles in mind, HyGo has proved to be hugely popular since its launch in 2024, with thousands having been sold globally to key food manufacturers **Mondelez - Vikan**. In 2025, supported by numerous customer testimonials, HyGo was named as a finalist for the Society of Food Hygiene and Technologies 'Best New Product' award and subsequently gained 'Highly Commended' status.

To discover more about Vikan please visit our stand at the 2026 EHEDG World Congress or our website [www.vikan.com](http://www.vikan.com)



**Deb Smith**, Global Hygiene Specialist (Vikan); EHEDG Advisory Board Member



## KEOFITT – Dedicated to Hygienic and Representative Liquid Sampling

For more than four decades, KEOFITT has been dedicated to one thing: improving liquid sampling. From our base in Denmark, we have focused exclusively on developing solutions for safe, hygienic and representative sampling of liquids across a wide range of industries. While we are often referred to as world leaders in sterile sampling, we see our role first and foremost as a committed partner to the industries we serve, continuously learning, refining and collaborating to improve sampling practices worldwide.

KEOFITT was founded within the brewing industry, where the need for accurate and reliable samples is fundamental to product quality and process control. From those early beginnings, our mission has been clear: to improve the sampling process itself and to develop equipment that ensures representative and uncompromised samples. Over time, our sampling valves have become widely adopted throughout the food and beverage industry and today they are also used extensively in dairy, brewing, biotechnology, pharmaceutical and other liquid-processing industries.

Accurate sampling is a critical but surprisingly often underestimated part of hygienic process design. Laboratory results are only as reliable as the samples on which they are based. Non-representative or contaminated samples can lead to incorrect conclusions, unnecessary waste and compromised product safety. At KEOFITT, we believe that correct sampling is not merely a technical detail, it is an essential part of quality assurance and food safety culture.

This conviction aligns closely with the mission of EHEDG. As an organization dedicated to advancing hygienic engineering and design, EHEDG plays a vital role in promoting best practices and facilitating collaboration across the industry. We are proud to support EHEDG as a sponsor and active contributor, and we deeply value the network, knowledge-sharing and dialogue that EHEDG fosters, particularly through initiatives such as the EHEDG World Congress and its extensive guideline work.

Our involvement in EHEDG Guideline 65, which addresses hygienic sampling of liquids, has been especially meaningful to us. KEOFITT's Carsten Rosendal has had the privilege of being the chair of the guideline working group, contributing practical insights from decades of hands-on experience in sampling technology. The work on Guideline 65 reflects a shared recognition that sampling must be considered an integrated part of hygienic process design, rather than an afterthought.

Participating in this work has strengthened our own mission. It has reinforced the importance of clear definitions, validated procedures and robust design principles to ensure hygienic and representative sampling. At the same time, it has highlighted the value of cross-disciplinary collaboration, bringing together manufacturers, end users, consultants and researchers to raise the standard for the entire industry.

Collaboration is central to how we operate. KEOFITT is represented globally through more than 50 distributors, typically each covering their own country and often neighboring markets. These partnerships are not merely commercial arrangements; they are knowledge-sharing relationships. Our distributors bring valuable local insight into regulatory requirements, customer needs and operational realities. Together, we work to adapt and refine solutions that meet both global standards and local expectations.

We also see product development as a collaborative effort. Many of our improvements and innovations have emerged from close cooperation with customers and industry partners. By listening carefully to process engineers, quality managers and operators, we gain insight into real-world challenges and can translate these into practical design enhancements. In this way, our portfolio continues to evolve always guided by the overarching goal of enabling correct and hygienic sampling in any liquid-processing industry.

Supporting EHEDG is a natural extension of this approach. EHEDG provides a structured framework for advancing hygienic design and offers a neutral platform where knowledge can be shared openly for the benefit of all. Through sponsorship and active participation, we hope to contribute not only technical input but also practical perspective from daily interaction with sampling applications worldwide.

Looking ahead, we remain committed to promoting awareness of the importance of proper sampling. As industries face increasing regulatory scrutiny, sustainability requirements and quality expectations, the availability of reliable process data becomes ever more critical. Representative sampling is a prerequisite for trustworthy data and trustworthy data is the foundation for safe and efficient production.

At KEOFITT, our purpose remains clear: to support the industry in achieving hygienic, safe, and representative liquid sampling, not in isolation, but in partnership with organisations like EHEDG, with our distributors and with the many industries we serve. We are grateful for the collaboration fostered through EHEDG and look forward to continuing our joint efforts to strengthen hygienic engineering and design across the liquid-processing world.



# SEW EURODRIVE



## Please introduce yourself and your organisation.

My name is Sarah Herberger and I'm a Solution Manager at SEW-EURODRIVE.

At SEW-EURODRIVE, our mission is simple but powerful: we aim to keep the world in motion. As a global system provider for drive and automation technology, we support industries worldwide with intelligent, sustainable and high-quality solutions, from electric motors and gear units to advanced electronics and automation systems. Quality, sustainability and safety are deeply embedded in everything we do.

In the food industry especially, manufacturers are facing growing expectations for sustainable and healthy products. This requires new production concepts that balance evolving consumer trends, like new flavor profiles or dietary preferences, with sustainability goals such as energy efficiency and full resource traceability. And all of this must be achieved while maintaining the highest standards of hygiene and product safety.

That's where our technology comes in. With our holistic drive and automation solutions, we help our customers optimise their processes so they can transform raw materials into high-quality food efficiently, safely, and reliably. Supporting hygienic production environments is one important task, therefore.

## How does your organisation contribute to safer or more hygienic food production?

We help make food production safer and more hygienic by providing drive and automation solutions designed for the strict standards of the industry. In meat processing, our systems meet the highest hygiene requirements and reliably automate demanding tasks, whether the products are fresh, frozen or marinated.

In bakery and dough production, we support manufacturers with flexible, energy-efficient and reliable technologies that enhance productivity and address challenges such as sustainability and labour shortages. Across all applications, our goal is to ensure hygienic, efficient and future-proof production.

## How do you measure the impact of hygienic design within your company or for your customers?

We measure the impact of hygienic design primarily through the demand and the operational results our customers achieve. The strong increase in requests over recent years clearly shows how urgent and relevant these specialised solutions have become for the food and beverage industry. Hygienic-design drive systems are easy to clean, which directly reduces cleaning time and lowers the risk of contamination. In addition to saving time, our customers also benefit from significant cost reductions thanks to less water usage during cleaning processes. These measurable efficiencies demonstrate the tangible value that hygienic design brings to modern production environments.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

In recent years, we have significantly expanded our stainless-steel portfolio in drive technology. Today, we offer a wide range of solutions, from servo and asynchronous motors to various gearbox types and sizes designed to meet the diverse requirements of OEMs and end users. Our stainless-steel motors from the CM2H -series , gear units of the RES.., KES.. and WES.. , and drive systems combine robust corrosion resistance with smooth, easy-to-clean surfaces to meet strict hygiene standards. With durable construction and reliable performance, these solutions ensure safe, efficient and hygienic production even under harsh cleaning conditions.

And we're far from finished. As technology advances, we continue to develop new concepts and innovations that support clean, hygienic drive solutions for future production needs.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

Manufacturers around the world face the same challenges in food production, which makes organisations and events like the EHEDG congress vital. We chose to sponsor the EHEDG World Congress 2026 because it is one of the most valuable events for knowledge exchange, sharing the latest insights and building strong networks within the industry. Hygienic design is essential, and we are proud to support this important event once again that plays such an important role in advancing global standards. This year, we hope to further strengthen industry awareness, contribute to higher safety standards and collaborate with partners to drive hygienic innovation forward.

### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

Our organisation is preparing for future hygiene trends and challenges in the food processing industry by consistently seeking direct exchange with our customers around the world. The requirements and practical challenges they face in their daily operations flow directly into our development work, enabling us to further develop and tailor our drive and automation solutions in a targeted manner. At the same time, we closely monitor technological and regulatory trends in the market in order to respond to changes at an early stage and provide innovative hardware and software solutions that meet the increasing demands for safety and hygiene.



**Sarah Herberger, Solution Manager  
(SEW-EURODRIVE)**





**Industrial tiles built for hygienic food processing**  
*High-performance industrial ceramic tiles from Zahna-Fliesen GmbH, made in Germany for demanding food production environments.*

For more than a century, Zahna-Fliesen GmbH has produced ceramic flooring solutions for demanding industrial environments. Combining long-standing ceramic expertise with modern manufacturing technology, the family-owned company, now in its sixth generation, focuses on one clear objective: delivering highly durable flooring systems that meet the strict technical, safety and hygiene standards of the food industry.

Zahna-Fliesen industrial tiles are manufactured from dry pressed, full body vitrified porcelain stoneware. Fired at very high temperatures, the ceramic body becomes extremely dense and fully vitrified. The result is a material with very low water absorption, high mechanical strength and outstanding resistance to chemicals.

These properties make fine stoneware tiles one of the most reliable flooring solutions for food processing environments, where floors are exposed to heavy mechanical loads, aggressive cleaning agents, humidity and strict hygiene regulations.

**The floor as a critical element of hygienic design**

In food production, hygienic design is often associated with processing equipment, piping systems or stainless-steel machinery. Yet the building itself plays an equally important role. The floor, as one of the largest surfaces in a facility, must meet the same hygiene and safety standards as the equipment installed on it.

Food processing floors face constant forklift traffic, heavy loads and intensive cleaning routines involving hot water, steam and aggressive detergents. Materials that absorb moisture, crack or degrade quickly become a hygienic risk.

Fully vitrified ceramic tiles offer clear advantages in this environment. Their dense, dry pressed ceramic body forms a closed, non-porous structure with extremely low water absorption, typically below 0.5 percent. This limits liquid penetration and helps prevent bacterial growth within the material.

At the same time, ceramic tiles provide excellent resistance to acids, fats, dairy residues and industrial cleaning agents. Even under demanding sanitation regimes, the surface remains stable, durable and easy to maintain, supporting safe and hygienic food production.

**Built for demanding industrial operations**

Food production facilities place considerable mechanical stress on flooring systems. Forklift traffic, heavy pallet loads and continuous movement of equipment require surfaces that maintain structural stability over time.

Industrial tiles from Zahna-Fliesen are engineered precisely for these conditions. The vitrified ceramic body provides high compressive strength and excellent abrasion resistance. Because the tiles are full body porcelain, the colour and material composition extend through the entire thickness of the tile, ensuring that performance and appearance remain unchanged even after years of use.

This durability explains why porcelain stoneware flooring is widely used in meat processing plants, dairy facilities, beverage bottling plants and large-scale food manufacturing sites.

Safety is equally important. Production areas are often wet or exposed to fats and oils. Zahna-Fliesen therefore offers a wide range of surface textures with slip resistance ratings from R9 to R13, allowing flooring systems to be tailored to specific operational zones and safety requirements.

### Long service life and lifecycle performance

In industrial construction, long term reliability often matters more than initial installation cost. Floors that require frequent refurbishment interrupt production, increase maintenance costs and create additional hygiene risks.

Fully vitrified ceramic tiles offer a decisive advantage. Unlike resin or polymer-based flooring systems, porcelain stoneware maintains its performance under heavy mechanical stress and aggressive cleaning chemicals. When properly installed, ceramic tile floors can remain operational for several decades.

Many facilities equipped with Zahna-Fliesen tiles continue operating on the same floor after twenty, thirty or even forty years. Throughout this time, the tiles retain their mechanical strength, chemical resistance and hygienic properties.

For food producers, this means reduced downtime, predictable maintenance and lower lifecycle costs.

### Functional design and colour innovation

Modern food production facilities also benefit from clear spatial organisation and structured working environments.

Zahna-Fliesen offers industrial ceramic tiles in a wide range of colours. The company is one of the very few manufacturers capable of producing highly technical tiles in strong colours such as blue, green or yellow while maintaining the mechanical strength and chemical resistance required for industrial use.

These colours support zoning concepts within food factories, helping to distinguish processing areas, hygiene zones, storage spaces or traffic routes while improving orientation inside large facilities.

### Supporting hygienic engineering initiatives

Zahna-Fliesen is a proud member of the European Hygienic Engineering and Design Group, EHEDG, actively supporting the exchange of expertise across the global food industry.

For us, hygienic design starts from the ground up. The floor is not just a structural element; it is a critical component of safe food production.

For manufacturers seeking maximum durability, chemical resistance and uncompromising hygiene, Zahna-Fliesen industrial tiles provide a proven flooring solution built to perform reliably for decades!



**Maxime Fischer**, Managing Director and Owner, sixth generation (Zahna-Fliesen GmbH)





## Driving Hygienic and Safe Food Production with Industry-Leading Flooring Systems

### Vibrofloors — Advanced Turnkey Flooring Solutions for Global Food & Beverage Environments

My name is **Alex Castro**, I am Manager at **Vibrofloors Spain S.L.**, part of the international Vibrofloors WorldGroup, headquartered in Girona, Spain. Vibrofloors is a global provider of high-performance industrial flooring systems, specialising in **fully integrated turnkey solutions** designed to meet the stringent requirements of hygienic and safe production environments across the food and beverage industry.

Our mission is to create robust, easy-to-clean, and long-lasting flooring and drainage systems that support operational efficiency, food safety, and regulatory compliance in hygienic production facilities worldwide. With decades of experience and projects delivered across multiple continents, Vibrofloors offers a **single-source, full turnkey solution** — from engineering and design to installation, maintenance, and long-term warranty — ensuring one point of responsibility for our clients and complete peace of mind.

### Supporting Hygienic Food Production with Specialized Technology

At Vibrofloors, we understand that the flooring system in a food processing plant is more than just a surface, **it is the foundation of hygiene, safety, and reliability.** Industrial floors must withstand heavy mechanical loads, frequent cleaning, aggressive chemicals and high-pressure wash-downs, while preventing microbial harborage and enabling effective drainage.

Our systems are engineered precisely for these challenges, making them ideal for environments where hygienic design is paramount.

Our offering includes fully vitrified ceramic tile flooring systems, advanced stainless-steel drainage solutions and bespoke floor designs tailored to each facility's unique needs. All elements are delivered as part of a **fully coordinated turnkey package**, including:

- Hygienic floor engineering and layout design
- Substrate preparation and slope formation
- Drainage integration
- Tile installation and jointing
- Commissioning, inspection and maintenance support

By acting as a **single responsible partner**, Vibrofloors eliminates interface risks between trades, ensures full system compatibility and guarantees long-term performance.

Our industrial ceramic tiles offer outstanding chemical and mechanical resistance, ultra-low water absorption and excellent performance under extreme temperature conditions. Our stainless-steel drainage systems ensure rapid flow and easy cleanability, eliminating standing water and significantly reducing contamination risks in high-throughput production areas.



## Measuring the Impact of Hygienic Design

We measure the impact of our hygienic flooring solutions using both qualitative and quantitative indicators. Key performance metrics include reduced downtime caused by floor damage or contamination risks, extended production cycles thanks to low maintenance requirements and improved hygiene audit scores.

Our customers frequently report measurable improvements in safety and productivity after installing Vibrofloors systems. Workplace slips account for 24% of all employee absences and our certified anti-slip flooring solutions significantly reduce this risk. In addition, efficient drainage design lowers water usage and cleaning times, a critical factor when 72% of companies rely on water as a strategic resource and recognise it as a key financial risk.

Internally, we track system performance through product longevity, lifecycle costs, warranty data, and customer feedback. Our floors are designed to perform reliably for decades, reducing refurbishment cycles and contributing directly to sustainability goals.

## Innovations and Developments for Optimised Hygienic Production

Innovation is central to Vibrofloors' approach. A key differentiator is our use of the **AKQR vibration installation method (Arbeitskreis Qualitätssicherung Rüttelbeläge)**. This advanced process embeds ceramic tiles into their bedding mortars with a level of compaction and consistency that cannot be achieved with traditional installation methods.

The result is an extremely dense, robust surface capable of resisting heavy dynamic loads, aggressive chemicals and thermal stress, while maintaining hygienic integrity over time.

To ensure maximum quality and reliability, we also deploy laser-guided installation systems and digital inspection tools. Our R&D efforts focus on enhanced jointing systems, advanced material science and modular design concepts that allow faster installation with minimal production disruption.

## Why We Sponsor the EHEDG World Congress 2026

Vibrofloors proudly sponsors the EHEDG World Congress 2026 because of our deep commitment to hygienic design excellence and food

safety. EHEDG represents the global benchmark for hygienic engineering and its mission aligns perfectly with our own values.

The congress provides a unique platform to exchange knowledge with food manufacturers, engineers and regulators, while showcasing how infrastructure elements such as flooring and drainage form the **base layer of hygienic design**.

Through our sponsorship, we aim to promote a holistic approach to hygiene, demonstrating how well-designed flooring systems play a critical role in reducing contamination risks, improving operational efficiency and supporting sustainability targets.

## Preparing for Future Trends and Challenges

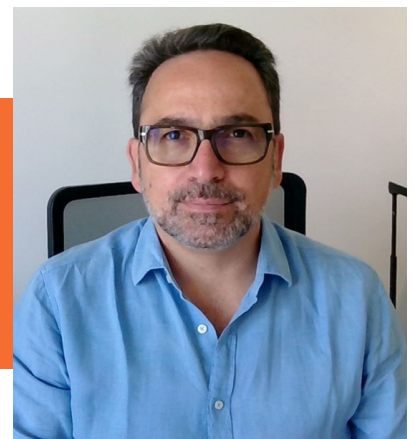
As the food industry evolves, so do the challenges of hygienic engineering. Increasing regulatory complexity, climate change, resource scarcity and rising consumer expectations demand more resilient and efficient production environments.

Vibrofloors is responding by investing in sustainable system design, advanced cleanability concepts and resilience against emerging biological and chemical threats. We are also strengthening our global service network to support multi-site facilities with consistent hygienic standards worldwide.

We apply European hygienic design philosophy across all global projects, partnering with engineering firms, certification bodies and industry experts to ensure our solutions remain at the forefront of hygienic innovation.

Through collaboration, innovation and uncompromising quality, Vibrofloors continues to support manufacturers in building safer, cleaner and more efficient food production facilities — **with one single partner, one integrated system and one clear responsibility**.

**Alex Castro,**  
Manager (Vibrofloors Spain S.,L);





**Compact Line:**  
Particularly small, exceptionally powerful: the Compact Line

In the Food & Beverage industry, excellence is defined by the ability to consistently deliver safe, high-quality products while navigating cost pressures, regulatory demands and rising expectations for sustainability. As Regional Industry Manager F&B Europe at Endress+Hauser, I work closely with manufacturers across the continent who face these challenges daily. Our mission is simple but powerful: empower producers with hygienic, reliable and intelligent process instrumentation that strengthens process capability, increases operational efficiency and elevates food safety.

At Endress+Hauser, we believe that measurement excellence is fundamental to ensuring food quality. Accurate data enables stable processes, optimised resource use and early detection of deviations. Through this, we help customers enhance output, reduce downtime and make confident, data-driven decisions, all while supporting sustainability and ESG goals that are reshaping the global food ecosystem.

### Driving Food Safety Through Hygienic Innovation

For decades, Endress+Hauser has been a pioneer in hygienic measurement technology. One of our early breakthroughs was the condensate-tight pressure sensor, initially created for harsh, moisture-rich environments and later embraced across food applications for its robustness.

Building on this, we developed multifunctional instruments like **Promass F** and **Promag H**, which combine several measurement parameters in a single device. Promass F supports mass flow, density, and viscosity measurement, while Promag H adds conductivity measurement on top of flow metering—allowing producers to reduce instrumentation complexity without compromising on data quality.

To support hygienic processes even further, we

**Endress+Hauser** 

People for Process Automation

introduced a **glassfree pH electrode** and revolutionised calibration with **Memosens technology**, enabling safe, reliable laboratory calibration instead of onsite procedures.

Heartbeat Technology, integrated across many of our devices, enables continuous self-verification, reducing maintenance work while supporting audit readiness. Today, more than **35** of our instruments carry EHEDG certification, over **10% of all EHEDG certified devices worldwide**, a strong testament to our commitment to hygienic design. Complementing this, our own hygienic testing facility ensures we can validate solutions under EHEDG similar conditions and accelerate hygienic innovation.

### Measuring the True Value of Hygienic Design

Food producers and equipment builders around the world increasingly rely on hygienic certified components to ensure product safety. Yet, the true value of these devices becomes visible only in daily operations: fewer contamination risks, reduced cleaning times, lower product losses and greater process stability.

A compelling example of measurable impact comes from our **Fermentation Monitor project at the Flensburger Brewery**. By implementing advanced inline measurement solutions, the brewery gained deeper process insight, reduced batch variability and improved consistency in one of its most critical production steps. Also sustainability goals have been achieved by reducing the beer loss of 1.000 hl per year through manual sampling and optimised utilisation of fermentation tanks.

This case illustrates how hygienic measurement technology contributes not only to safety but also to operational excellence.

### Solutions for Tomorrow's Hygienic Production

As the industry evolves, so do our solutions. In recent years, we have introduced several innovations that support safer, more flexible and more sustainable production environments.

**The new Compact Line** is designed for essential food applications, offering hygienic, cost-efficient instrumentation that is easy to select and integrate.

The redesigned **Promag H with ODN installation** unlocks full measurement performance without requiring inlet or outlet runs. This is especially valuable in compact skids or retrofits where space is limited but hygienic compliance remains nonnegotiable.

Our enhanced **TrustSens** now features a **39°C calibration point**, aligning even closer with biological processes such as fermentation and dairy applications. This improvement strengthens accuracy exactly where temperature management has the highest safety relevance.

Together, these developments reaffirm our commitment to enabling the next generation of hygienic production.

### Why We Sponsor the EHEDG World Congress 2026

We are proud to continue supporting the EHEDG World Congress in 2026, following our sponsorship in 2020 and 2024. This commitment stems from our role as ambassadors of hygienic design. We firmly believe that collaboration across the industry is essential for driving food safety forward.

Being part of the EHEDG network allows us to contribute our expertise, exchange knowledge with leading professionals and help advance global standards. In 2026, we aim not only to present our innovations but, more importantly, to listen, learn, and help shape solutions that address the realworld challenges faced by manufacturers.

### Preparing for the Future of Food Safety

Looking ahead, manufacturers face a landscape shaped by climate change, emerging regulations, supply chain volatility and rapid technological advancements. At Endress+Hauser, we are actively preparing for these shifts.

Our instruments are becoming increasingly intelligent, offering enhanced diagnostics, digital communication and seamless integration into advanced automation and cloud environments. Heartbeat Technology lays the foundation for predictive maintenance and smarter process control.

We anticipate a future where hygienic engineering is combined with digital process understanding to create systems that are safer, more transparent and more resilient.

### Hygienic design is not merely a requirement — it is a responsibility.

At Endress+Hauser, we are committed to helping shape a safer and more sustainable future for global food production through expertise, innovation and partnership.

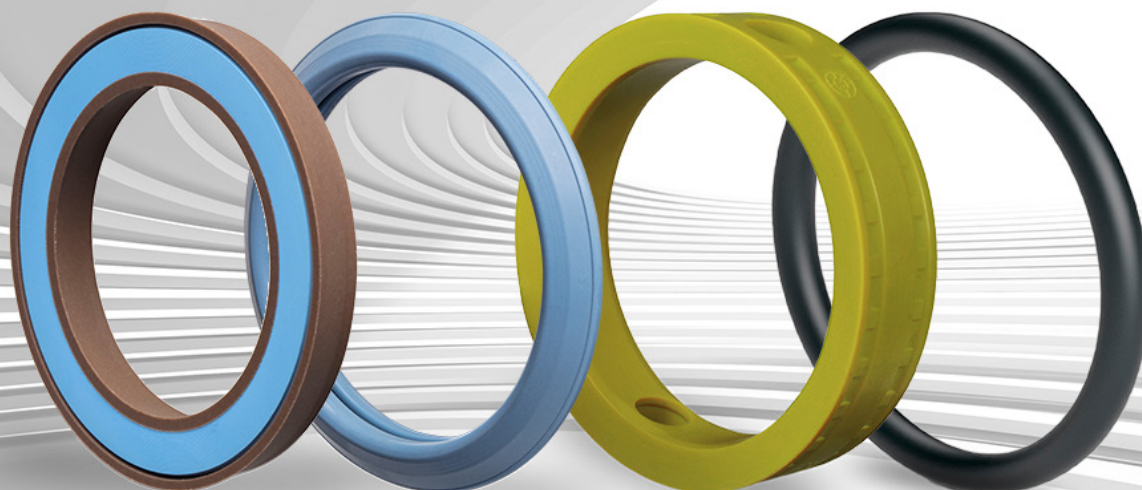


**Tim Schrodt**, Regional Industry Manager F&B Europe, (Endress+Hauser)

#### Fermentation Monitor

Measures continuously all parameters relevant for the fermentation process of beer.





### Please introduce yourself and your organisation.

Mark Boggasch, mechanical engineer and Eva Fleischmann, PhD in chemistry, work as Application Engineers at Freudenberg Sealing Technologies (FST), supporting the development of sealing solutions for the process industry. Eva also chairs the EHEDG working group “Elastomeric Seals”.

FST contributes to food safety through innovative sealing and material solutions that help customers meet high hygiene requirements and minimise risks in sensitive production processes. As an active EHEDG member, the company supports the ongoing development of hygienic standards.

### How does your organisation contribute to safer or more hygienic food production?

The design of hygienically safe equipment requires seals that withstand extreme conditions such as aggressive media, high temperatures, and intensive cleaning cycles, while fully complying with all relevant food contact regulations.

Our elastomer development team plays a significant role in achieving this. With their extensive expertise in elastomer design, they develop high-performance sealing materials aided by our in-house analytics for food contact compliance. Our close collaboration with scientific institutes, associations and our suppliers ensures that these materials meet both regulatory and functional demands.

In developing hygienic seals, we adhere to the EHEDG recommendations. Knowledge transfer is also an important part of our work. We regularly provide training on Hygienic Design, food contact regulations and elastomer behavior. In addition, we actively contribute to EHEDG working groups and task forces, supporting the advancement of hygienic standards and strengthening safety in food production.

### How do you measure the impact of hygienic design within your company or for your customers?

Since we are not equipment operators ourselves, customer feedback on the performance of our seals is particularly important. Although it is often difficult to quantify, we regularly receive confirmation that our products perform reliably in the field or have been certified in customer applications . for example, our PTFE radial shaft seal Radiamatic® HTS2 in servo motors or a special seal used in the first EHEDG compliant Tetra Pak® tubular heat exchanger.

Our in-house CIP/SIP test bench also plays a key role. Long term endurance tests help us evaluate and optimise service life, as only solutions that are both hygienic and robust remain hygienic over time.

One example is the design optimisation of butterfly valve seals for a key customer. Using 3D FEM optimisation loops, we refined the design and validated it on our test bench before it successfully entered serial production.

Another example is the development of a new food grade HNBR material. Through several formulation iterations and CIP/SIP validation, we were able to demonstrate roughly double the service life compared with the previous material. Link: Virtual Tour Test Bench

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

The newest addition to our Hygienic Line is the Hygienic Clamp Seal, which allows the widely used DIN 32676 clamp connection to be converted into a truly hygienic flange connection. The well known hygienic drawbacks of DIN 32676, especially in larger nominal sizes, are the missing metallic stop and insufficient centering of the metal parts and the seal. In real applications with temperature changes, this often leads to unhygienic seal deformation and even material extrusion.

The Hygienic Clamp Seal eliminates these issues, ensuring that the product contact surface always remains flush with the internal pipe diameter, regardless of the tightening torque during assembly. This two component solution features a reusable stainless steel ring, meaning only the elastomer component needs to be replaced when necessary. An EHEDG certification is planned as the next step.

A brief note on our Hygienic Line: It includes standard products such as the Hygienic Usit®, Radimatic® HTS2 and hygienic O rings, which are specifically adapted to the revised DIN 11864 which came into effect in 2025. Additionally, we offer further products such as the Hygienic Pressure Seal and Hygienic Forseal, which are custom designed in many variations. Each solution is precisely tailored to the installation conditions and customer requirements, these are the keys to achieving a truly Hygienic Design and each case represents a small development project of its own.

Finally, the core requirement for Hygienic Design is always the right material. That is why we continuously advance our materials to meet evolving regulations and to further optimise properties such as chemical resistance, mechanical performance and aroma transfer. Currently, new food contact materials from the HNBR, EPDM, Fluoroprene® XP and FKM material families are under development.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

We are sponsoring the EHEDG World Congress 2026 because EHEDG is central to advancing Hygienic Design standards. The event lets us connect with manufacturers, suppliers and users, helping us improve our products through real-world feedback and collaboration. It is also a chance to learn about innovative technologies and industry trends, ensuring we keep pace with developments in hygienic engineering.

### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

There is a strong demand for smart seals that integrate additional functions in the process line. A good example of this are integrated sensors that monitor the condition of the seal, enabling the implementation of predictive maintenance. Another key element is our simulation tool for service life prediction for seals, taking our customers' specific application parameters into account.

We keep a close eye on changes to global regulations for food contact materials to ensure that materials can be further developed at an early stage. An important aspect here is certainly the evaluation of PFAS-free solutions for targeted applications, as well as the use of "clean" materials such as fluor surfactant-free FKM materials.



Mark Boggasch & Eva Fleischmann, Application Engineers at Freudenberg Sealing Technologies (FST)



## Please introduce yourself and your organisation.

Fabrizio Tardioli – Associate Director, Global Sector Marketing - Processed Food

Diversey (a Solenis Company) is a global leader. Our singular strength to act as ONE Global Team is reflected in the close partnerships we have with our customers. A founder member of EHEDG, we deliver everything in one place, offering a distinctive integrated total solution to hygiene and water treatment. This encompasses chemicals, equipment, engineering, knowledge-based services (KBS) and training.

Our innovative pipeline of sustainable solutions is designed to optimise operational efficiency, food safety and compliance. Each innovation contributes to our commitment to save resources, energy, time, and labour, to add value and enhance productivity, while protecting our customers, consumers, and the planet.

## How does your organisation contribute to safer or more hygienic food production?

Our hands-on technical approach ensures the adoption of innovative solutions is a success, with Diversey's experience and application support delivering optimum hygiene results and sustainable footprint reduction.

This guarantees reliable outcomes through reliable dosing, monitoring and validation, overcoming assumptions, over/under use of resources, and risks to hygiene standards from microbial contaminants.

Open Plant Cleaning (OPC) is key to maintaining consistent hygiene standards, ensuring safe and

successful food production. Efficiency depends on repeatability and hygienic compliance to the validated procedure. We are reinventing this from the ground up, challenging the status quo and, through innovation, setting new standards for sustainable hygiene.

Diversey's approach is built on measurable results, efficiency and sustainable innovation, achieving incremental gains while retaining OPC virtues. Insight and data-driven analysis deliver broader business benefits. Each innovation is a step forward, eliminating trade-offs between savings, sustainability, compliance and hygiene. Each forms part of a formula reshaping performance, raising expectations for:

- Delivering OPC with more efficiency, consistency and reliability.
- Saving time, water, and chemicals.
- Ensuring stricter compliance, protecting food safety, consumers, brand reputation and assets.
- Helping drive sustainable cleaning solutions, profitability, and reduce Total Cost of Ownership (TCO).

## How do you measure the impact of hygienic design within your company or for your customers?

Our engineering team work to EHEDG guidelines. Our focus is on driving optimisation of hygienic production, and the relationship between hygienic design and cleanability is critical to our solutions and services.

OPC is time and resource intensive. Typically, there's no continuous performance overview or reporting system. Applying an Intelligent OPC

solution collates data for analysis and parameter verification. It monitors and tracks utility and chemical consumption, compares data to hygiene protocols for compliance reports, while highlighting variances for optimisation and continuous improvement. The key challenge is consistently measuring variability of cleaning parameters - rinse time, pressure, product concentration, and contact time - to create a record of each clean.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

Time is one of the golden parameters. Soaring utility and labour costs make any reduction in cleaning process length significant. Our innovations target each end of the process, gaining precious time to sharpen competitive edge, free up workers, and unlock valuable production capacity.

Diverclean Sonic's novel pre-cleaning technology significantly reduces overall cleaning time and labour requirements, along with downtime, without impacting hygiene standards, for savings in four key areas:

- Time (Cleaning) – Up to 35% savings
- Water and Wastewater – Up to 20% savings in each
- Energy – Up to 20% savings
- Chemicals – Up to 20% savings

Divosan Dew and Protect deliver rinse-free application, achieving up to 20% time, water, and wastewater treatment savings. Their fully compliant formulations are just part of our game-changing developments in phosphate-free and QAC-free, with no trade-offs between savings, sustainability, compliance, and hygiene. While Intelligent OPC investigates data in-depth to ensure the highest standards of clean. Evidence of how we are striving for zero compromise, environmentally harmful chemicals, inefficiency, or gaps in compliance.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026, and what do you hope to achieve this year?

The World Congress brings together all aspects of the F&B industries with the shared goal of improving hygiene. Our sponsorship helps ensure that as a community we can meet, discuss and

share knowledge to further advance this common aim.

We've been committed to EHEDG since its inception. Many of our colleagues have been involved with EHEDG throughout its history, contributing to its growth and maturity as a recognised authority. Our consistent overall aim is to further the basic principles, procedures and understanding of the role that hygiene plays in ensuring the highest standards of food safety.

### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

The global food industry faces many challenges as climate change and resource scarcity grow. From supply chain instability and ingredient shortages to persistent labour issues, there's much to balance. Cultural shifts are influencing retailers, consumers and regulatory bodies, driving demands for sustainability and higher standards.

We're confronting these in the context of tight margins and pressure to maximise production time, helping customers become more flexible and sustainable. The need to do more with less and meet profitability and sustainability goals requires cleaning processes that run at peak performance. Current cleaning systems are being exposed. Innovation is key to meet expectations, get more from less, and reduce downtime without compromising hygiene or food safety.



*Fabrizio Tardioli – Associate Director, Global Sector Marketing - Processed Food (Diversey, a Solenis Company)*



## ACO – Advancing Hygienic Infrastructure for Safer Food Production

For decades, hygienic design has focused primarily on equipment in direct contact with food. Yet the broader production environment—floors, drainage and water management systems—plays an equally critical role in maintaining hygienic conditions. At ACO Group, we believe that hygienic performance must extend beyond machines to encompass the entire processing environment.

ACO is a family-owned water-technology company founded in Germany in 1946 and active in more than 50 countries. Across all industries, our mission is guided by the principle “we care for water,” developing solutions that manage water safely, efficiently and sustainably throughout its lifecycle. Within food and beverage production, this translates into hygienically designed drainage and water management systems that support food safety, operational reliability and environmental responsibility.

### **A long-standing commitment to hygienic design**

Our collaboration with EHEDG reflects this commitment. ACO joined EHEDG in 2011 as the first drainage specialist within the organisation. This step recognised drainage infrastructure as an integral part of hygienic design.

### **HygieneFirst: applying hygienic principles to drainage**

At the core of ACO’s approach is our **Hygiene-First philosophy**, introduced to ensure that hygienic performance is prioritised from the earliest design stage of every drainage solution.

The objective is to minimise areas where residues can accumulate, enable effective cleaning and prevent drainage systems from becoming potential sources of contamination.

This approach has shaped the development of ACO’s hygienic drainage portfolio, including stainless steel channels, gullies and modular drainage systems specifically engineered for demanding food production environments. By integrating hygienic design principles with robust hydraulic performance and durable materials, these systems support reliable cleaning processes while maintaining long-term operational performance.

### **Identifying the hidden risks in drainage infrastructure**

While production equipment typically undergoes strict hygienic validation, drainage systems are sometimes treated as secondary technical installations.

In reality, poorly designed or inadequately maintained drainage systems can create hidden risks. Residues may accumulate in inaccessible areas, stagnant water can occur due to insufficient slopes or installation defects may compromise hygienic performance. Over time, such conditions can influence cleaning efficiency, operational reliability and ultimately food safety.

To address this challenge, ACO developed the Drainage System Assessment (DSA), a structured methodology that evaluates drainage systems within their real production environment. The assessment analyses drainage components together with surrounding floors, walls and installation details influencing hygienic performance.

Applied across numerous food and beverage facilities worldwide, this approach enables manufacturers to systematically identify vulnerabilities, prioritise corrective actions and strengthen their HACCP strategies.

### Measuring the impact of hygienic drainage design

The benefits of hygienically designed drainage systems can be demonstrated both through controlled testing and operational experience.

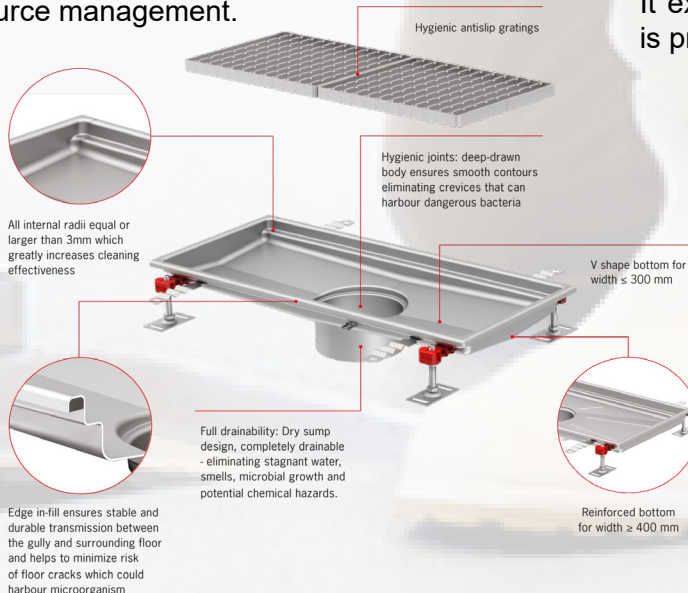
Independent studies conducted by the Fraunhofer Institute IVV in Dresden have shown significant differences in cleaning efficiency between conventional drainage systems and hygienically designed channels. Under controlled test conditions simulating food production contamination, hygienically designed drainage channels were fully cleaned within approximately 8–10 minutes, while conventional systems still retained residues even after extended cleaning cycles of up to 180 minutes.

Beyond laboratory testing, field observations from drainage system assessments further illustrate how correct design, installation and maintenance contribute to improved hygienic performance, more efficient cleaning processes and reduced consumption of water and cleaning chemicals.

### Innovation supporting safer and more sustainable production

As a water-technology company, ACO continues to develop hygienic drainage solutions that improve cleanability and hydraulic performance while supporting more sustainable water management in food production environments.

ACO also supports industry discussions on sustainable water use. Our experts have contributed to EHEDG initiatives addressing water reuse and sustainable hygienic engineering practices, recognising that future food production must balance strict safety requirements with responsible resource management.



### Supporting collaboration at the EHEDG World Congress

ACO's sponsorship of the EHEDG World Congress 2026 reflects our long-standing partnership with the organisation and our commitment to collaborative progress in hygienic engineering.

The congress provides a unique platform where food manufacturers, equipment suppliers, researchers and regulators exchange knowledge and practical experience. By participating, we aim to contribute insights from drainage infrastructure and water management while learning from the broader hygienic design community.

Ultimately, improving food safety is a shared responsibility. Progress depends on collaboration across disciplines, open exchange of experience and the continuous evolution of hygienic design standards.

### Looking ahead

Food manufacturers today face increasing complexity: stricter safety expectations, sustainability targets, water scarcity concerns and evolving regulatory frameworks. Addressing these challenges requires a holistic view of hygienic engineering, one that includes both processing equipment and the surrounding infrastructure.

At ACO, we believe that hygienic drainage systems will play an increasingly important role in this broader perspective. By combining hygienic design expertise with advanced water management technologies, we aim to support food producers in building production environments that are not only safe, but also resilient, efficient and future-ready.

Because in modern food production, hygiene does not end at the machine.

It extends to the entire environment where food is produced.



**Javier Lemus,**  
Global KAM & BDM (ACO)



## CSF Inox S.p.A. – Reliable Flow Technology for Hygienic Excellence

### **Please introduce yourself and your organisation.**

My name is Francesco Donati, I am R&D and Engineering Manager at CSF Inox S.p.A.

For over five decades, CSF Inox has been a reference point in Europe for hygienic pumps and flow-technology solutions serving food, beverage, dairy, pharmaceutical and chemical industries. Our approach is rooted in a clear commitment: to ensure safe, efficient and reliable product handling through high-quality engineering and continuous innovation.

Since 1970, the company has grown into one of Italy's and Europe's leading manufacturers of centrifugal, self-priming, progressive cavity, twinscrew and air-operated piston pumps. Our solutions are designed to support customers in processes where hygiene, performance and durability are essential.

### **How does your organisation contribute to safer or more hygienic food production?**

At CSF Inox, hygienic design is the foundation of our engineering philosophy. Each pump family is developed to guarantee product integrity, safety and ease of cleaning, whether handling delicate ingredients, viscous media or high-value pharmaceutical fluids. Our portfolio includes self-priming, centrifugal and volumetric technologies, offering flexibility for every application across food, beverage and pharma sectors.

Among our flagship solutions, the CSA certified centrifugal pumps represent an excellent example of our design approach. Manufactured in AISI 316L

stainless steel, with electropolished wetted surfaces, modular components and certified mechanical seal, they offer outstanding cleanability and operational reliability. The clampcasing design facilitates quick inspection and fast installation, minimising downtime and supporting safe operation, even in demanding environments.

Our engineering teams work side by side with OEMs, integrators and processors to evaluate process needs and optimise pump selection. This collaborative method ensures efficient flows, stable operations and adherence to the highest hygienic standards.

### **How do you measure the impact of hygienic design within your company or for your customers?**

The impact of hygienic design is measurable and our customers experience improvements across multiple dimensions:

- longer production cycles, thanks to reduced fouling and optimised internal finishing
- lower water and chemical usage during CIP, due to cleanable geometries and polished surfaces
- increased uptime, supported by modular assemblies that simplify maintenance
- reduced energy consumption, enabled by carefully engineered hydraulics and low NPSH requirements

These improvements reinforce the principle that good hygienic design is not only a safety enabler but also a driver of sustainability and operational efficiency.

To support customers throughout the lifecycle of their installations, we recently introduced **FLOW**, our new digital portal. It provides immediate access to product documentation, performance information and service resources, helping users manage their equipment with transparency, precision and speed.

### What innovations or new developments are you introducing to help manufacturers optimise hygienic production?

Hygienic innovation is central to our R&D roadmap. Today, CSF Inox is focusing on:

- hygienic design of new centrifugal pumps for high pressure and low roughness surfaces
- centrifugal pumps with zero-dead leg draining systems for high hygienic-demanding applications
- next generation twinscrew pumps capable of handling multiphase products with exceptional smoothness
- automated pumping systems optimised on performance and easy to clean
- digital integration, enabling pump monitoring and smart maintenance strategies in our platform FLOW

Many of our newest developments continue to align closely with **EHEDG guidelines**, reinforcing our position as a trusted supplier for sanitary processing.

### Why did your organisation choose to sponsor the EHEDG World Congress 2026 and what do you hope to achieve this year?

Our sponsorship of the EHEDG World Congress 2026 stems from our strong belief in the importance of hygienic engineering as a shared discipline, not just a company practice.

Participating as a sponsor offers us the opportunity to:

- engage with global leaders in hygienic design
- contribute technical expertise and exchange knowledge
- strengthen partnerships with manufacturers and processing companies
- increase visibility for our latest technologies and design approaches
- support the development and dissemination of harmonised hygienic standards

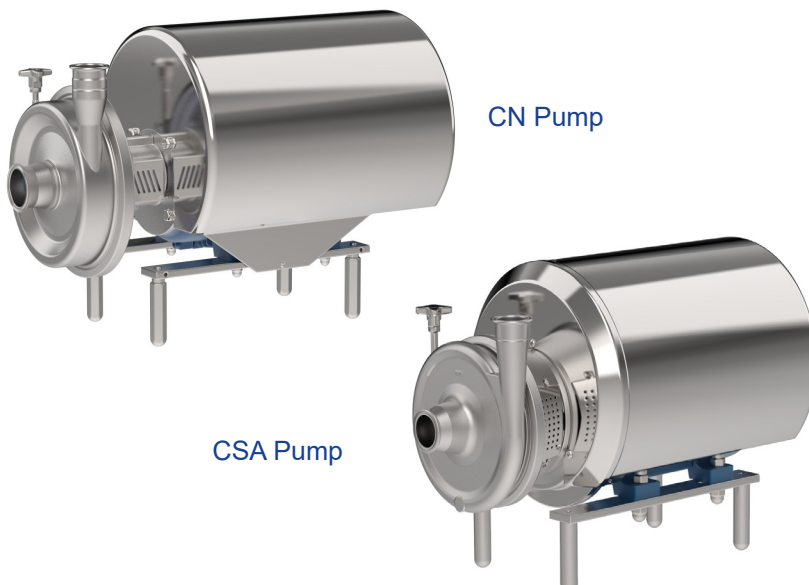
We view the congress as a strategic stage for dialogue, collaboration and advancing the culture of hygienic excellence.

### Looking ahead: How is your organisation preparing for future trends and challenges in food safety and hygienic engineering?

The next decade will require companies to respond to evolving expectations in food safety, sustainability and supply chain resilience. At CSF Inox, we are preparing for these trends by investing in:

- energy efficient hydraulic designs
- sustainable manufacturing practices
- digital transformation, centred around better data availability and smarter service tools
- international training and support programmes, ensuring consistent expertise worldwide

Our goal is to remain a long term technological partner and reference for customers navigating increasingly complex hygienic requirements.



**Francesco Donati**, R&D and Engineering Manager (CSF Inox S.p.A)

# Other EHEDG World Congress 2026 sponsors

## Gold

### Ammeraal Beltech

Founded in 1950 in the Netherlands, Ammeraal Beltech is a leading provider of premium Food Grade conveyor belting solutions across a wide range of industries. A member of the Ammega Group, Ammeraal Beltech has the largest selection of high-performance conveying solutions for every Food Segment from Dairy to Confectionary. Employing over 3,000 people and operating 10 manufacturing sites in Europe, the USA, Canada and Asia, Ammeraal Beltech have sales and fabrication centers at over 80 sites worldwide. This ensures consistent and fast customer support at all stages of cooperation.



## Silver

The logo for ECOLAB, consisting of the word "ECOLAB" in a bold, blue, sans-serif font with a registered trademark symbol (®) to the right. A stylized blue star or asterisk is positioned between the 'O' and 'L'.



The logo for STONHARD, consisting of the word "STONHARD" in a bold, blue, sans-serif font.

## Bronze

The logo for Stainless Steel Engineering, featuring a stylized line drawing of a mechanical part (possibly a shaft or pulley) above the text "Stainless Steel Engineering" and a registered trademark symbol (®).

The logo for METTLER TOLEDO, featuring the words "METTLER" and "TOLEDO" in a blue, sans-serif font, with a green and white graphic element above them.

The logo for POLYSTO, featuring a stylized red and blue circular graphic to the left of the word "POLYSTO" in a bold, blue, sans-serif font, with the tagline "strong in hygienic construction" below it.



## SPONSORSHIP OPPORTUNITIES

### As a sponsor you...

- Engage with an audience where **70%+ influence purchasing decisions**
- Showcase your brand during the **Official Sponsor Tour**
- **Strengthen industry relationships.**
- Network with exhibitors, partners, and global EHEDG stakeholders.
- **Access an international audience** with participants from 50+ countries.
- **+1 year of promotional exposure** through EHEDG communications.



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## RESEARCH POSTER OPPORTUNITIES

### Stand out with industry leaders...

The **Research Poster Competition** takes place at the EHEDG World Congress. Master's and PhD students in relevant disciplines are invited to submit their academic research posters.

€2000

Showcase your research. Make an impact.

€1000

**1**

**2**

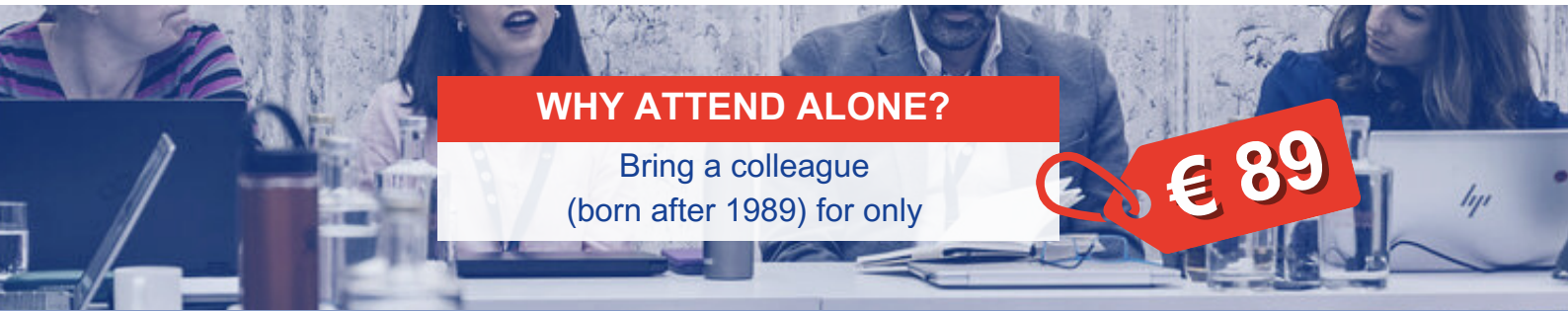
€500

+ popular vote also gets a prize **3**

### WHY ATTEND ALONE?

Bring a colleague (born after 1989) for only

**€ 89**



# Cornell University

## Could you start by introducing yourself and your background?

I'm Abby Snyder. I'm an associate professor of microbial food safety in the Department of Food Science at Cornell University. I lead a research lab focused on preventing cross-contamination of foodborne pathogens, spoilage organisms, and allergenic residues through sanitation programmes.

In addition to research, I teach both undergraduate and graduate courses such as Food Microbiology and Food Safety Assurance. I'm also leading a journal club this fall which is centred on peer-reviewed literature about sanitation in food manufacturing environments. Cornell's Food Science department is quite diverse — we cover everything from chemistry and nutrition to engineering, sensory science, food microbiology, and food safety.

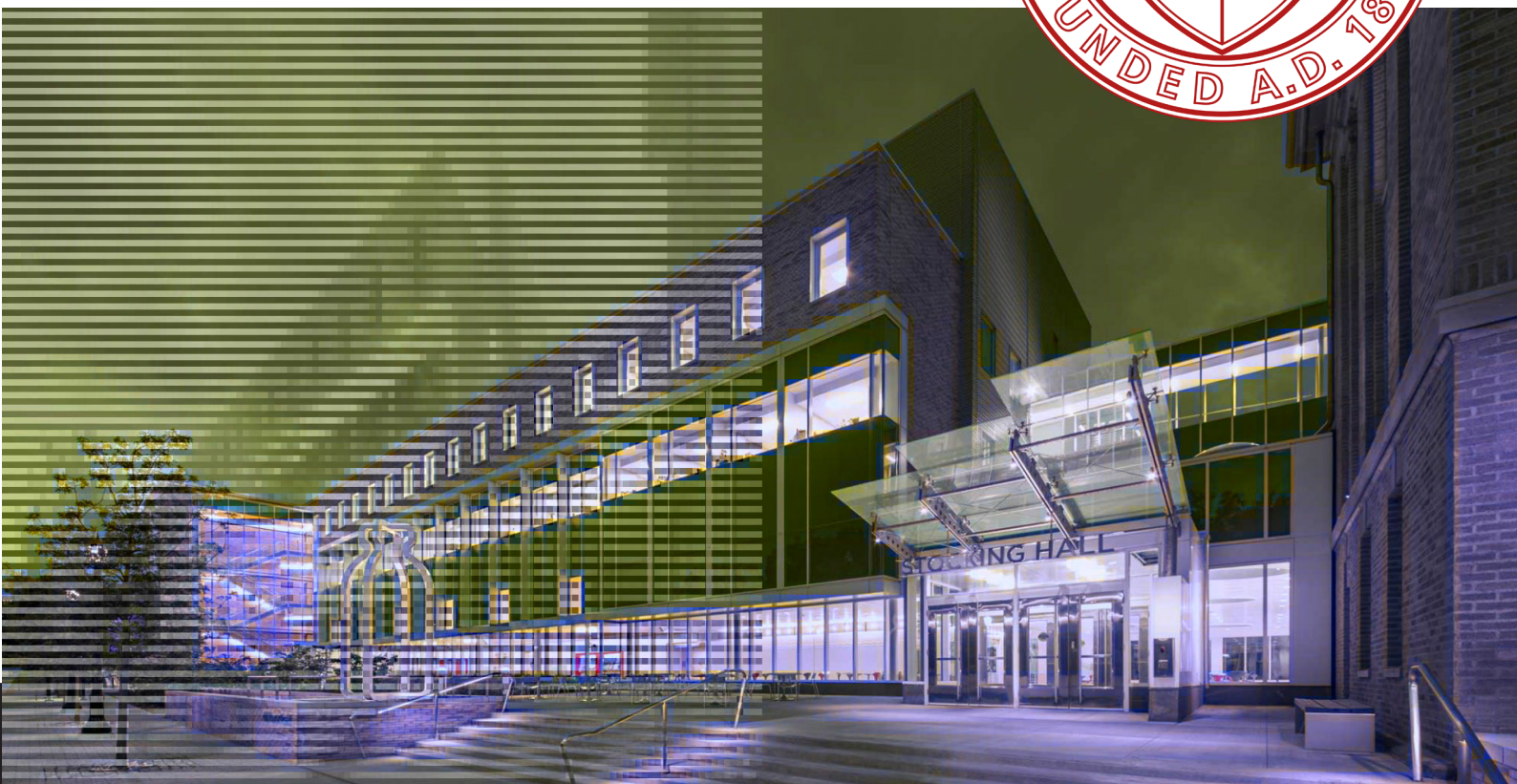
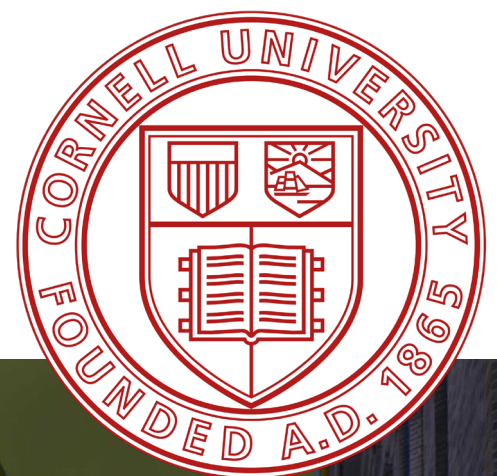
## What motivated your department to join EHEDG, and how does this membership bring value to your Food Science programme?

Because of our focus on sanitation research, we've become deeply interested in the principles of hygienic design — both for equipment and facility construction. There's a strong connection between sanitation outcomes and how easy or difficult a surface is to clean. So, it made perfect sense for us to learn from organisations like EHEDG, which have been focusing on hygienic design principles for a long time.

I've noticed a gap between food safety professionals, who are often microbiologists, and hygienic design experts, who tend to be engineers. Both fields are critical to effective sanitation programmes, yet they can be quite siloed. My main motivation in joining EHEDG was to help bridge that gap — to bring both areas of expertise together and improve cross-contamination control.

## Can you share any current research in your department that aligns with EHEDG's focus on hygienic design and food safety?

Of course. In my research lab, one of our primary focuses right now is dry sanitation — particularly in facilities that produce low-moisture foods like dairy powders, spices or cereals. These environments often use dry cleaning techniques instead of wet washes. One such technique involves material flushes (also known as purges or pushes), where a dry material is flushed through a line to physically remove residual product and microbial contaminants.





## New Institute Member

There's limited research on how to optimise these flushing techniques, so we've been conducting microbiological challenge studies, risk modelling, and field sampling with industry partners. Through this work, it has become very clear that hygienic design plays a significant role in the effectiveness of dry sanitation. That's why we're closely following EHEDG's work on hygienic design in low-moisture food systems — particularly around equipment like dry blenders, valves, fillers and augers.

### **How do you prepare your students to tackle real-world food safety challenges once they enter the workforce?**

PhD students in my group take on research projects that mirror the challenges food manufacturers face, using both applied and fundamental scientific approaches. These projects help them develop problem-solving skills that are directly transferable to industry roles.

In the classroom, I ensure the same principles apply. For instance, I teach a course where students must develop a comprehensive food safety plan. They also conduct mock audits — including an on-site audit at our on-campus dairy plant. These hands-on experiences are practical and industry-relevant, preparing students to transition smoothly into their professional roles.

### **That's inspiring. Students often appreciate practical experiences — do you see strong engagement from them in these real-world applications?**

Yes, absolutely. The mock audit, in particular, is often one of the students' favourite parts of the course. They gain real insight into how food safety principles play out in operational settings. I genuinely appreciate initiatives like GenEHEDG — bringing the next generation into hygienic design is both timely and vital.

*Abigail Snyder, Associate Professor, Food Science (Cornell University)*



*Abigail Snyder, Associate Professor, Food Science (Cornell University)*

## Could you briefly introduce yourself and your organisation?

My name is Vesela Tseneva and I'm the Food Safety Expert at OFI, responsible for the EMEA region and Oak Olamcocytes. I began my career by obtaining a PhD in Microbiology from Wageningen University in the Netherlands, followed by several roles at research institutes and later as an R&D Lead at a commercial laboratory.

I joined OFI over three years ago, where I've been enjoying the opportunity to apply and further develop my expertise. OFI stands for Olam Food Ingredients, we are a global leader at the forefront of trends in the food and beverage industry. We deliver sustainable, natural and plant-based ingredients and solutions, serving large, high-growth end-use categories.

As a food ingredient supplier, our goal is to delight both our customers and their consumers with products of superior quality and unquestionable food safety. At OFI, we are committed to being a force for positive change, working toward good food and a healthier future. We see it as our responsibility to protect our brand, thereby also protecting our customers' brands and ensuring consumer safety. Our purpose is to source, grow and produce ingredients that are beneficial for consumers, farmers and the world around us.

## What motivated your company to join EHEDG?

EHEDG offers a valuable network, knowledge base and expert working groups in the field of hygienic design and engineering, areas that are highly relevant to the food industry.



This foundation is essential for enhancing food safety and quality during the processing of raw materials. Being a member of EHEDG provides us with access to working groups, where we can contribute to the development of important documents such as guidelines and practical protocols, resources that are directly applicable to our business. Furthermore, EHEDG offers a variety of training and certification programmes that help us continuously update and improve our knowledge on hygienic design and engineering in food production environments.

## With such a diverse product portfolio, what are the biggest hygienic design challenges you face across different facilities?

Operating production sites all over the world with a very diverse product portfolio naturally comes with challenges. These are further amplified by the varying ages of our facilities. Some of our sites are state-of-the-art, while others, such as our cocoa factory in the Netherlands, are over a century old.

Despite these differences, we work hard to ensure all sites are regularly updated and that all our products meet the highest standards of quality and safety, in line with current legal and customer expectations. We achieve this through strong collaboration across multifunctional teams of experts in engineering, food safety, process technology, and operations. By sharing our experience and knowledge, we ensure that our factories meet today's requirements and wherever possible, are designed or updated with hygienic principles in mind.

Hygienic design is the essential first step in ensuring the consistent production of food-safe, high-quality products.

## How do you ensure consistency in hygienic design practices across your global operations, especially in regions with varying regulatory requirements?

One of the key advantages of being a large global company is the wealth of expertise we have across different regions and disciplines. As mentioned ear



## New Company Member

lier, we can form multifunctional, multi-regional teams that allow us to align on specific regulatory and operational requirements.

We gather and analyse regulatory information across markets and use it to develop a harmonised approach. Our Global Regulatory Team at OFI is responsible for developing internal guidelines that are designed to meet the most stringent international standards.

This enables us to maintain a consistent approach across our operations while still complying with regional regulations. Our goal is to provide the same high level of food safety and quality to our customers, no matter where they are in the world.

**Sustainability is a big focus for OFI, how do you see hygienic design contributing to more sustainable food production and ingredient processing?**

At OFI, sustainability is part of our foundation, we aim to cultivate it from the ground up.

We have a dedicated team called AtSource, which provides sustainable sourcing solutions, enabling traceability of product origin and transparency across key supply chains. They tackle sustainability challenges using data and insights. In parallel, our global Quality and Food Safety team ensures that our ingredients meet consistent, high safety and quality standards.

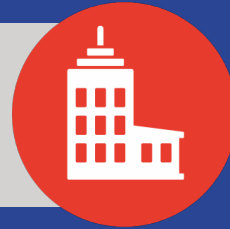
Producing food of high quality reduces waste, which in turn contributes to a more sustainable global food chain.

Factory design plays a crucial role in food safety, quality and sustainability, and that responsibility begins even at the planning stage. Well-designed factories that allow for effective cleaning and sanitation are a key factor in long-term sustainability. Hygienic design isn't just about compliance; it's about creating the conditions that support safe, efficient, and sustainable production over time.

*Vesela Tzeneva, Food Safety Specialist (OFI)*



# New Company Member



**BUILDING TRUST**

## Could you please introduce yourself and your company?

Hi everyone, my name is Rod Benson and I lead the Industrial Manufacturing Team within Sika's Global Project Support organisation. Our team of construction experts is based across Europe and the United States, and we support multinational companies in the food and beverage, pharmaceutical and related manufacturing sectors.

We provide tailored expertise, system solutions, educational content and guidance on supply chain topics. We collaborate closely with building owners, investors, designers, engineers, architects and other stakeholders involved in both new construction and renovation projects worldwide.

So who is Sika? We are a global leader in construction chemicals, specialising in the development and production of systems and solutions for various elements of building infrastructure, including flooring, roofing, waterproofing, sealing and concrete technologies, among many others. With more than 100 years of experi-

ence, Sika operates in over 100 countries and manages more than 400 production sites worldwide. Our commitment is to deliver innovative technologies that help build a more sustainable future.

## What innovations or new technologies is Sika bringing to the food and beverage sector?

Innovation at Sika often comes not only from developing brand-new solutions but also from evolving and aligning our existing systems to better meet industry needs. A great example of this is our Sika Ucrete brand. While already well-known, we've expanded its portfolio to address previously unmet needs, for instance, with UV stability, new cleanable surface finishes and conductive flooring systems.

In addition to Ucrete, our Sarnafil roofing membranes are another flagship product where we are driving innovation. Across the board, we focus heavily on sustainability and performance, aiming to provide systems that not only solve technical challenges but also help our clients reduce total cost of ownership. This is particularly important in modern industrial construction, where the complexity of projects can become a real challenge for many organisations. Our goal is to make the process as reliable and informed as possible.

## How does being a member of EHEDG support your mission to deliver safe and hygienic solutions?

Becoming a member of EHEDG represents a very exciting new step for us at Sika. We view it as a valuable opportunity to further our mission of delivering effective hygienic solutions to the market. Through EHEDG, we can engage with a broader network of peers, share experiences and gain deeper insights into the common challenges our industry faces. It's a platform that truly fosters collaboration in key market sectors.

We're especially looking forward to contributing to the EHEDG community and connecting with member organisations we haven't worked with before. For us, this membership is more than symbolic, it's a strategic move to reinforce our role in supporting safe, hygienic and sustainable construction solutions.

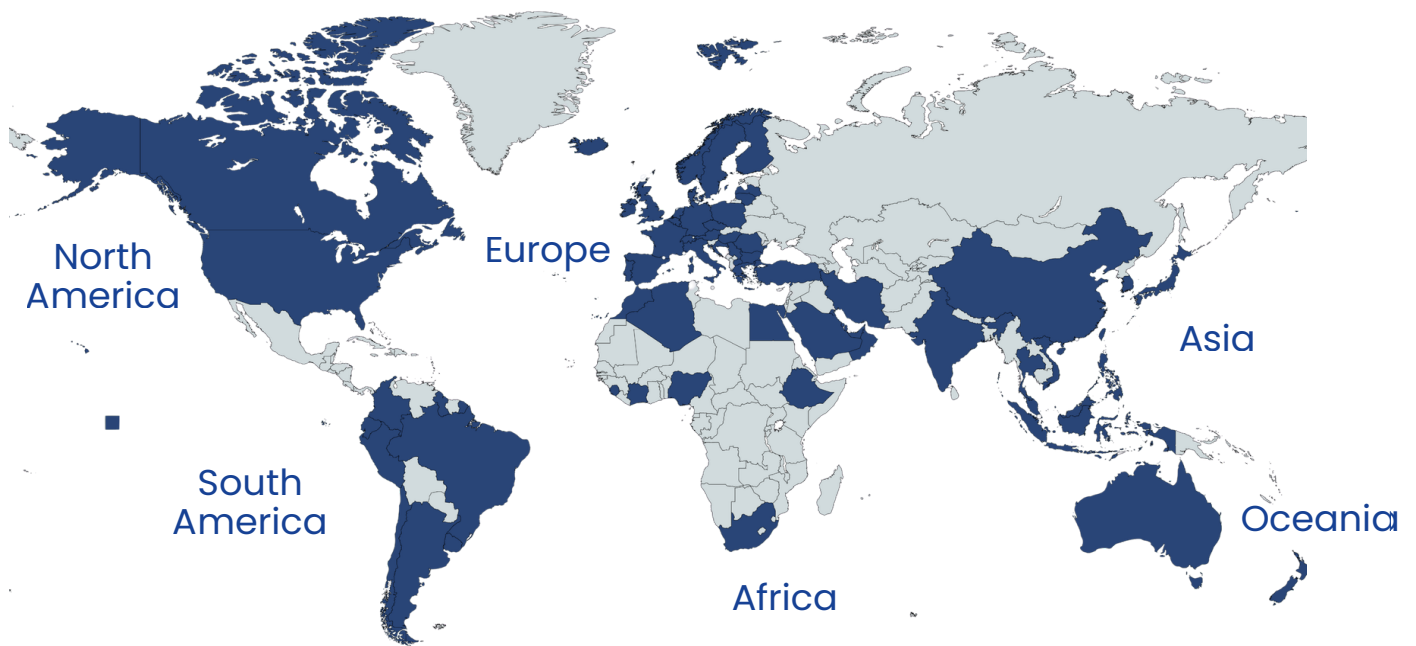
















**Rod Benson, Global Market  
Manager-Industrial  
Manufacturing (SIKA)**



# NEW EHEDG MEMBERS

## Around the World



AMERICAS	AFRICA	ASIA	OCEANIA
 		  	
 		  	
 		  	

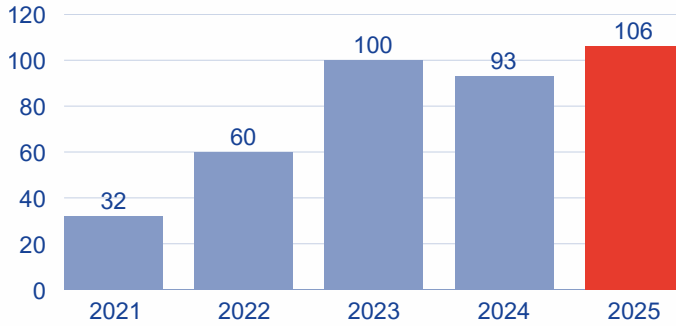
# EUROPE



# EHEDG MEMBERSHIP

## Growth Overview 2025

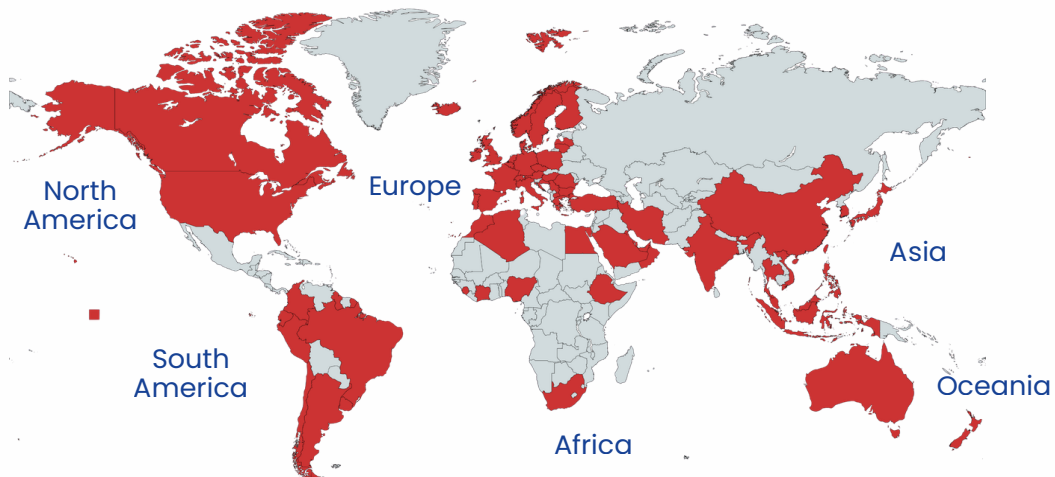
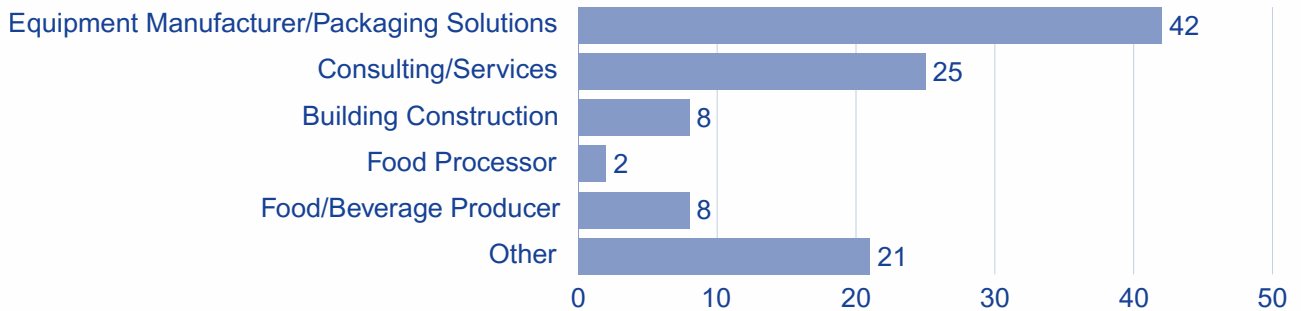
### NEW MEMBER GROWTH TREND 2021-2025



 **800+**

Currently, 826 members worldwide collaborate within our community to drive innovation in hygienic design and food safety

### INDUSTRY DISTRIBUTION





## OUR TRAININGS AND ATTENDANTS



**57**

Authorised  
Trainers

3 new trainers in 2025



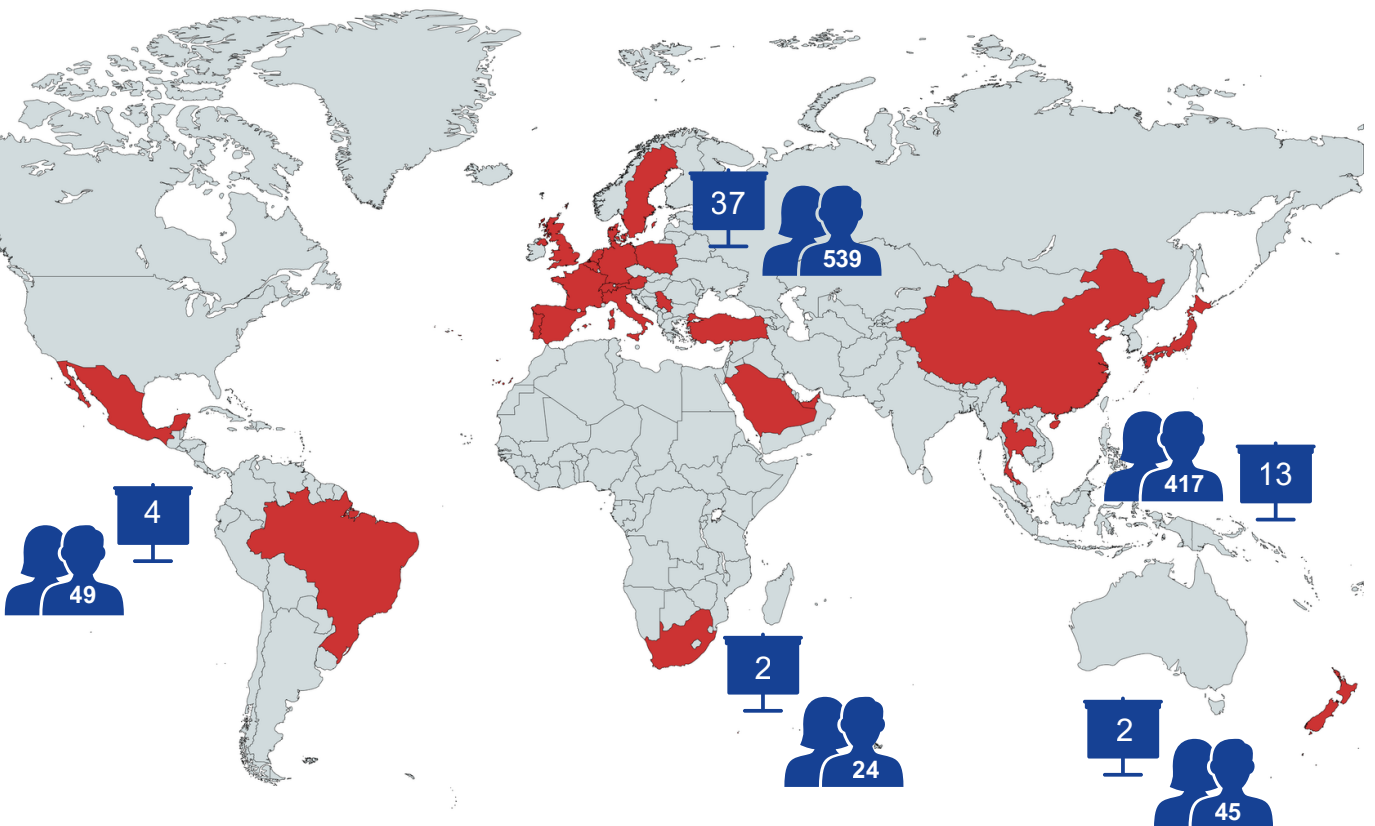
**1300+**

Hours  
Delivered



**1115+**

Trainees



42



4

## OUR E-LEARNING

**495**  
Enrolled

**307**  
Completed

**83.46**  
Average Score

**250**  
Certificates

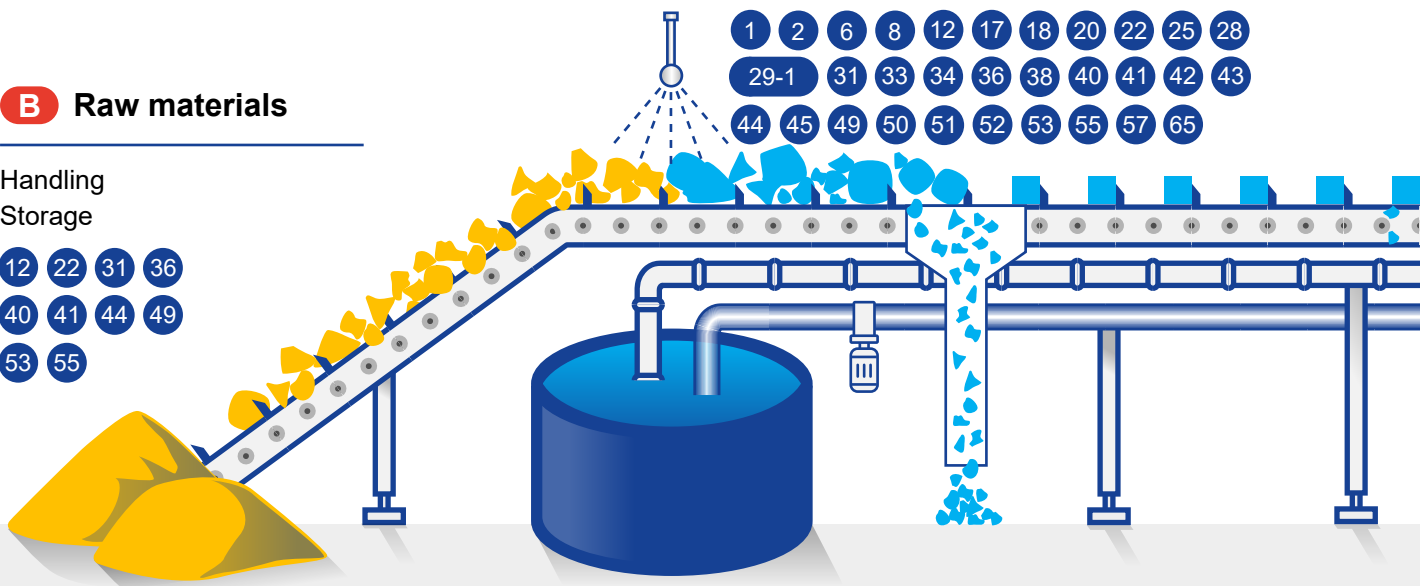
\*E-learning catalogue is currently available for members and on request; contact us at [office@ehedg.org](mailto:office@ehedg.org).

## C Processing

## B Raw materials

Handling  
Storage

12 22 31 36  
40 41 44 49  
53 55



1 2 6 8 12 17 18 20 22 25 28  
29-1 31 33 34 36 38 40 41 42 43  
44 45 49 50 51 52 53 55 57 65

## A Building, Utilities

Drainage    Doors    Water  
Zoning    Filters    Construction  
Floors    Air handling    Materials  
Walls    Steam

5 6 7 8 12 13 14 17 19 28  
31 32 34 35 44 47 49 50 51 58

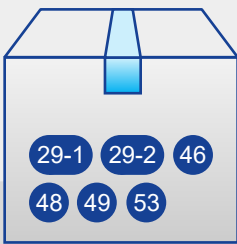
## G Tanks

6 12 20 28 49 50 51  
52 55 65

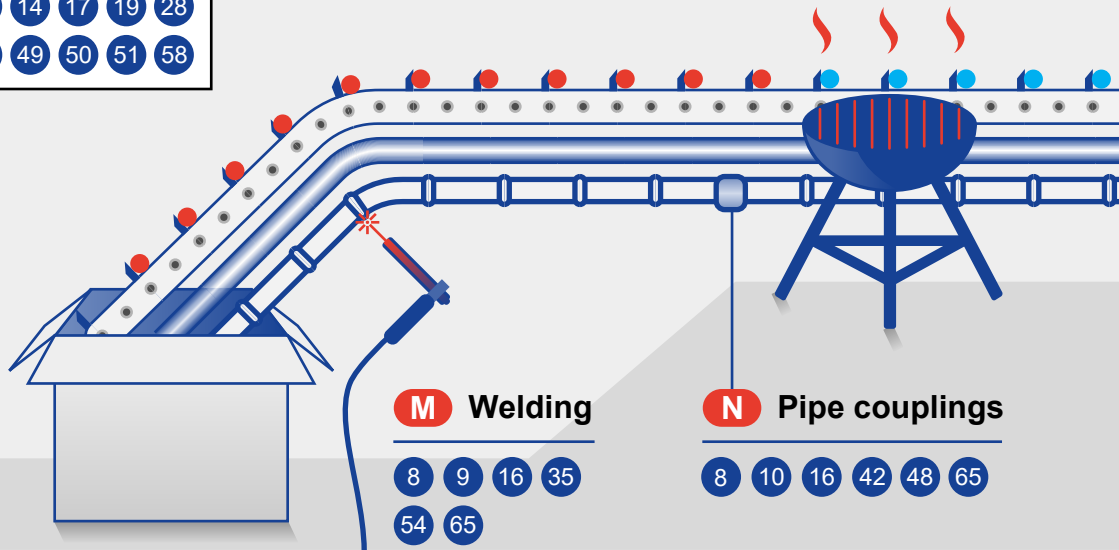
## K Heating

Baking  
1 8 6 12 28 31 55

## L Packing



29-1 29-2 46  
48 49 53



## M Welding

8 9 16 35  
54 65

## N Pipe couplings

8 10 16 42 48 65

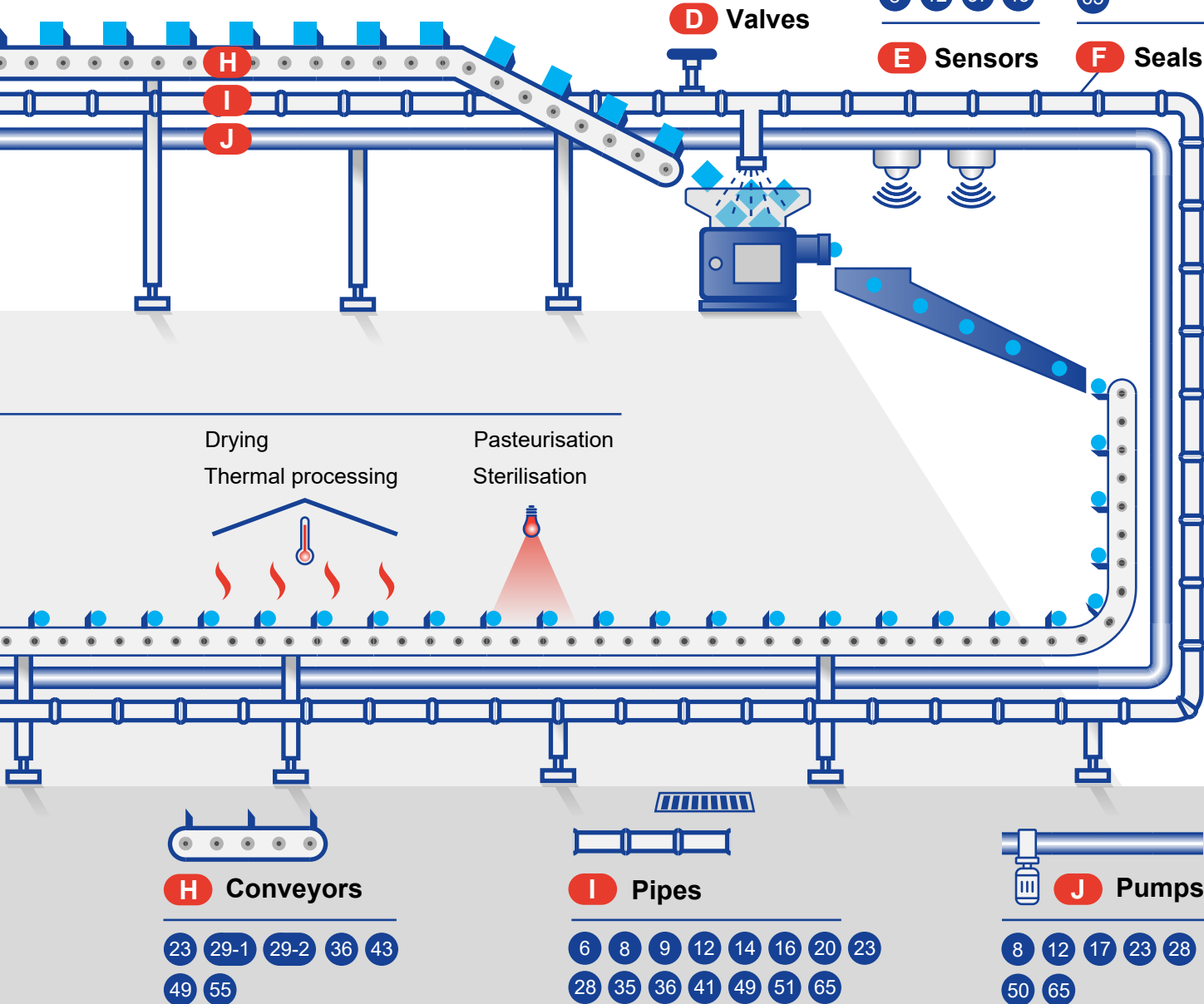
## PUBLISHED GUIDELINES 2025

WORKING GROUP	GL	GUIDELINE NAME
Design Principles	8	Hygienic design Principles
Heat Treatment	12	Continuous or Semi-Continuous Thermal Treatment of Liquid Particulate Foods
Valves	20	Hygienic design and safe use of Mixproof valves
Water Management	28	Safe and Hygienic Treatment, Storage and Distribution of Water in Food and Beverage Factories
Separators	42	Disk Stack Centrifuge - Design and Cleanability
Building Design	44-2	Managing of Building Work and Equipment Installation/Removal During Food Production
Valves	65	Sampling Systems for Representative Liquid Sampling
Sustainability	WP	White Paper on Sustainability

# EHEDG Guideline Overview

- 1 5 6 7 12
- 14 17 20 28 38
- 40 41 49 50 55
- 65

- 8 12 13 14
- 16 17 20 22
- 25 29-1 29-2
- 40 42 43 48
- 65



## 2025 HIGHLIGHTS

Working Groups & Guideline publications



**30+**

Working Groups



**300+**

Active Members



**8**

Published Guidelines



**39**

Peer Reviewers

### WORKING GROUPS

### AUDIENCE DEMOGRAPHICS



**86%**  
Male



**14%**  
Female

**352 MEMBERS**



**<10%**

RISING PROFESSIONALS  
BORN AFTER 1989

**>90%**

ESTABLISHED EXPERTS  
BORN BEFORE 1989

# Financials 2025

We are pleased to present the annual financial results of the EHEDG Foundation, a not-for-profit organisation dedicated to advancing awareness and application of hygienic design and engineering across the global food processing industry. Our mission continues to be realised through the development of practical guidelines, training courses and the provision of a trusted international platform for knowledge exchange and professional collaboration.

## Memberships, Trainings & Guidelines

This year has been marked by strong progress and meaningful achievements. We proudly welcomed 106 new members, further expanding our global community and reinforcing our shared commitment to hygienic design excellence.

The participation in our training programmes grew by nearly 20%, demonstrating a sustained and increasing demand for high-quality education in hygienic design.

## Working Groups

EHEDG placed a strong emphasis on enhancing its product portfolio, with a focused effort on the development and revision of hygienic design guidelines tailored to industry needs. By allocating additional resources and hosting both Chair and Full Working Group Days, we significantly accelerated project delivery. These well-attended events brought together co-chairs and working group members to strengthen alignment and collaboration.

In total, 33 Working Groups were actively en-

gaged across 40 guideline topics. This collective effort led to the publication of seven new guidelines and one position paper on sustainability. With several more nearing completion and more new topics being developed.

## Regional Development

We continued to strengthen our global footprint by investing in our Regional Sections, participating in more regional third-party exhibitions and congresses. We launched of a new Regional Section in the GCC and we developed local teams to both establish new regions and revitalise existing ones. These regional hubs play a vital role in disseminating EHEDG knowledge, particularly supporting local initiatives, SMEs and educational institutions in adopting hygienic design principles.

## Major Events, Marketing & Communication

EHEDG hosted its first LatAm Congress in Mexico-City with the support of the Regional Section Mexico, welcoming over 150 participants from across the region.



The event fostered dynamic discussions on key topics such as Food Safety, Quality, Productivity, and Sustainability, encouraging active knowledge exchange among industry experts. We also organised our Full Working Group Days again with the help of the Polish Regional Section in Krakow. We brought together more than 150 dedicated volunteers to align on objectives, share progress and enhance future collaboration, setting the first steps in an enhanced Guideline Development Process.

To engage and inspire the next generation of professionals, we further developed the EYE Mentorship Programme in partnership with Young EFFoST.

Additionally, our ongoing webinar series continued to highlight critical topics in hygienic design, supporting continuous learning and dialogue across the community.

In October we held our EHEDG Online Congress again, focusing on how hygienic design, structured sanitation systems and strong organisational culture together form the foundation of effective food safety, illustrated through real-world case studies from global food and beverage operations. It also explored future-oriented topics such as extended production runs, digitalisation, automation and smart cleaning technologies, highlighting both their potential and the importance of maintaining human expertise and disciplined processes.

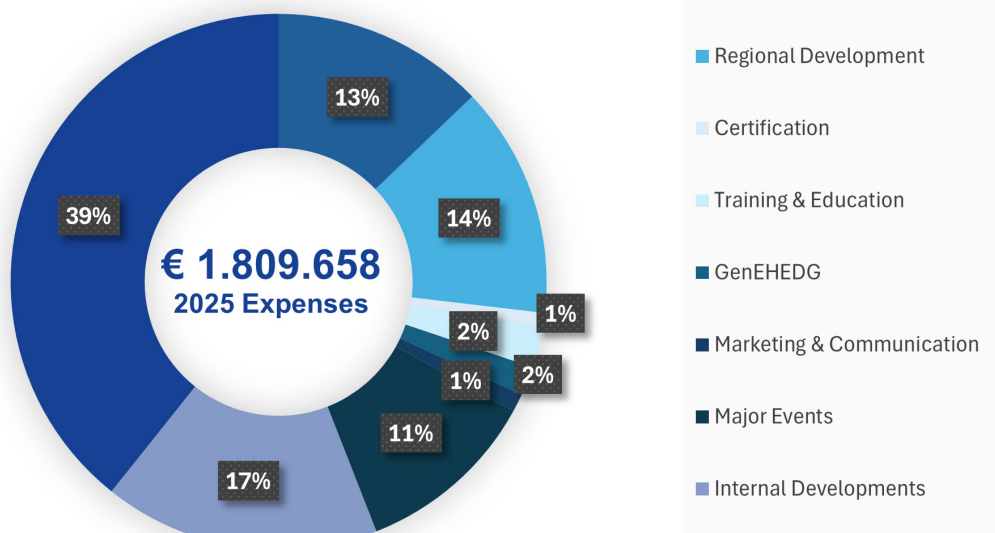
### Internal Developments

Strategic investments in IT infrastructure have delivered tangible improvements, including our new central online examination, enriched website content and expanded capabilities to support key events such as the World Congress and events organised in the EHEDG regions all around the world.

### Administration, Governance & Overall Support

Our commitment to collaboration across the food industry remains unwavering. EHEDG continued to partner with fellow not-for-profit organisations and actively participated in major global food congresses. These efforts contribute to the harmonisation of hygienic design and food safety standards, ensuring our stakeholders remain well-informed and that our mission continues to grow and create impact worldwide.

## Expenses





Working Group meetings: Chocolate Processing, Elastomeric seals, Air handling, Robotics, Pumps & Lubricants.

EHEDG Chair Working Group Day

Regional Section activities: Thailand, Germany, Switzerland, South Africa.

International Conferences 2025: Drinktec, FCFP, PPMA, IAFF, Propak



## Wrapped 2025







# EHEDG WORLD CONGRESS 2026

'Ensuring Food Safety and Optimising Hygienic Production'

7 & 8 October | Vienna, Austria



**REGISTER NOW!**