

Hygienic Design





WHEN HYGIENE IS TOP PRIORITY

Hygienic Design for total safety in food production.

Hygienic conditions in food production and the pharmaceutical industry are increasingly being seen as crucial and essential by plant operators, plant manufacturers and consumers alike. Even the very slightest of impurities can impair the **quality of the product** and endanger people's health, which is why **ever greater demands are being made in respect of the safety** of the design and production process of production facilities. A key role in this is played by "Hygienic Design".

Standards for greater food safety

The benchmark for Hygienic Design are the guidelines of the European Hygienic Engineering & Design Group (EHEDG), an institution made up of plant manufacturers, food producers, legislators and experts.

The EHEDG has made it its business to improve food safety by defining essential standards and disseminating the requisite know-how. As a member of the EHEDG, we are actively involved in the various technical committees and are contributing **our many years of expertise** to promote and generate a broad awareness of the issue of Hygienic Design.



EVERY PRODUCT ZONE HAS ITS OWN HYGIENE REQUIREMENTS

PFLITSCH has the right solution for all zones

Product contact zone

In this zone, food can come into contact with parts of the plant and then return to the manufacturing process. For this reason, the hygiene requirements are exceedingly high and the components installed here must not aid the formation of potential dirt traps. It is precisely such zones that led PFLITSCH to design its product solutions in accordance with the Hygienic Design guidelines of the EHEDG.

Splash zone

Production plant components can come into contact with food in what is called the "splash zone". The focus here is on the ease with which these components can be cleaned and made hygienic. To prevent splashes of food from building up, the components must be protected or have smooth surfaces. The goal is to enable residue-free cleaning of the relevant sections of the production machinery, so that bacterial nests cannot form here either.

Product-free zone

In this zone, the products are as a rule already packed and food no longer comes into contact with plant components. The requirements are comparable to those in a classic industrial environment.

MEETING TOMORROW'S REQUIREMENTS TODAY

With PFLITSCH's
comprehensive solutions

By coming up with innovative solutions for cable entry, cable routing and cable protection, PFLITSCH has developed into an expert in cable management. As a pioneer in the field of Hygienic Design, we pursue a holistic approach. The result is a **smart system of coordinated solutions** designed to meet all the demands of hygienic cable management – and all from a single source.

This system ensures that you are always on the safe side, with reliable production processes. It also enables you to meet the coming challenges in respect of hygiene and to **maintain the highest standards** so that you can be competitive over the long run.

Cable gland

PFLITSCH has developed cable glands for feeding cables into control cabinets and machines that meet the strictest hygiene requirements and at the same time impress with tight seals and their ease of assembly.

Cable protection

Cables are exposed not only to mechanical stresses and extreme temperatures, but also to aggressive chemicals and cleaning agents. The hygienically compliant cable protection products from PFLITSCH offer the right solutions to counter these potentially damaging factors.

Cable routing

The innovative cable trunking systems from PFLITSCH make it simpler to run cables efficiently and safely. Designed specifically for demanding hygiene applications, this stainless-steel wire-tray trunking is a rugged, open routing system.



blueglobe CLEAN Plus
 Dirt doesn't stand a chance: the blueglobe CLEAN Plus can be installed flat without gaps and is easy to clean.

HYGIENIC CABLE ROUTING MADE SIMPLE

With PFLITSCH cable glands according to Hygienic Design

YOUR REQUIREMENTS

As a manufacturer of systems for the food or pharmaceutical industry, you require cable entry solutions for machines and systems that are suitable for direct contact with food. In addition to the strict hygiene requirements laid down, these solutions also frequently have to meet a range of very basic requirements, such as temperature resistance, EMV shielding and explosion protection.

YOUR BENEFIT

Our blueglobe CLEAN Plus is a solution that conforms to FDA and Hygienic Design standards. It's also the world's first cable gland to be **EHEDG-certified**. Thanks to smooth surfaces and rounded spanner flats at the pressure screw, but also the lack of any cavities, gaps and external threads, dirt and bacteria have practically no chance to settle and build up. The gland's excellent tightness of seal and resistance to corrosion and all common cleaning agents make it **simple to clean thoroughly** – and using a high-pressure cleaner, too.

We offer a whole range of different variants in the blueglobe CLEAN Plus series to suit your highly individual needs.

>>> blueglobe CLEAN Plus

What you require	A solution for universal use in applications that demand the highest standards of hygiene and sterility.
Gland body	AISI 316L and AISI 303 stainless steel
Sealing insert	TPU
Temperature range	-40 °C/+85 °C
Type of protection	IP 68 up to 15 bar, IP 69
Connection thread	M8x1.0 to M40x1.5
Sealing range max./min.	29.0 mm to 4.0 mm

blueglobe CLEAN Plus product portfolio

>>> blueglobe CLEAN Plus HTS



What you require	Suitable for use in hygienic and sterile environments with extreme temperature conditions.
Gland body	AISI 316L and AISI 303 stainless steel
Sealing insert	Silicone
Temperature range	-55 °C/+180 °C
Type of protection	IP 68 up to 15 bar, IP 69
Connection thread	M8x1.0 to M63x1.5
Sealing range max./min.	55.0 mm to 4.0 mm

>>> blueglobe CLEAN Plus Polyamide



What you require	An attractive cost-benefit ratio combined with universal use in demanding hygienic and sterile environments, longer cleaning intervals and less aggressive cleaning agents. Also available as a high-temperature polyamide HTS version.
Gland body	PA 6 – FDA
Sealing insert	TPU
Temperature range	PA: -20 °C/+85 °C PA HTS: -20 °C/+110 °C
Type of protection	IP 68 up to 15 bar, IP 69
Connection thread	M16x1.5 to M32x1.5
Sealing range max./min.	23.0 mm to 7.0 mm

>>> blueglobe CLEAN Plus hygienic elbow



What you require	And EHEDG-compliant solution for routing cables out of control cabinets or machines at a right angle. The elbow fitting can be turned through 360° to route the cables in any direction. Also available as an EMC variant.
Gland body	AISI 316L stainless steel
Sealing insert	Silicone
Temperature range	-55 °C/+180 °C
Type of protection	IP 68 up to 15 bar, IP 69
Connection thread	M10x1.0 to M32x1.5
Sealing range max./min.	18.0 mm to 4.0 mm



>>> blueglobe TRI CLEAN Plus

What you require	Compliance with strict hygiene requirements and at the same time reliable protection against electromagnetic interference.
Gland body	AISI 316L and AISI 303 stainless steel
Sealing insert	TPU
Temperature range	-40 °C/+85 °C
Type of protection	IP 68 up to 15 bar, IP 69
Connection thread	M12x1.5 to M40x1.5
Sealing range max./min.	29.0 mm to 5.0 mm

>>> blueglobe CLEAN Plus Ex-e



What you require	Suitable solution for use in environments that require the highest standards of hygiene and are also potentially explosive. Certified according to the current ATEX Directive for application areas G/D for equipment class II and explosion protection types e and d.
Gland body	AISI 316L and AISI 303 stainless steel
Sealing insert	TPU
Temperature range	-20 °C/+60 °C
Type of protection	IP 66, IP 68 up to 15 bar
Connection thread	M10x1.0 to M63x1.5
Sealing range max./min.	29.0 mm to 5.0 mm

>>> CLEAN Plus blind plug



What you require	Unused holes in machines and control cabinets must be hermetically sealed.
Gland body	AISI 316L stainless steel
Sealing insert	TPU
Temperature range	-40 °C/+85 °C
Type of protection	IP 68 up to 15 bar, IP 69
Connection thread	M12x1.5 to M63x1.5



**blueglobe CLEAN Plus
connector cable gland**

Offers you more than you might think: not just easy to install, dependable and compact, but hygienic, too.

DISCONNECT CABLES FASTER

Thanks to hygienic connector
cable glands from PFLITSCH

YOUR REQUIREMENTS

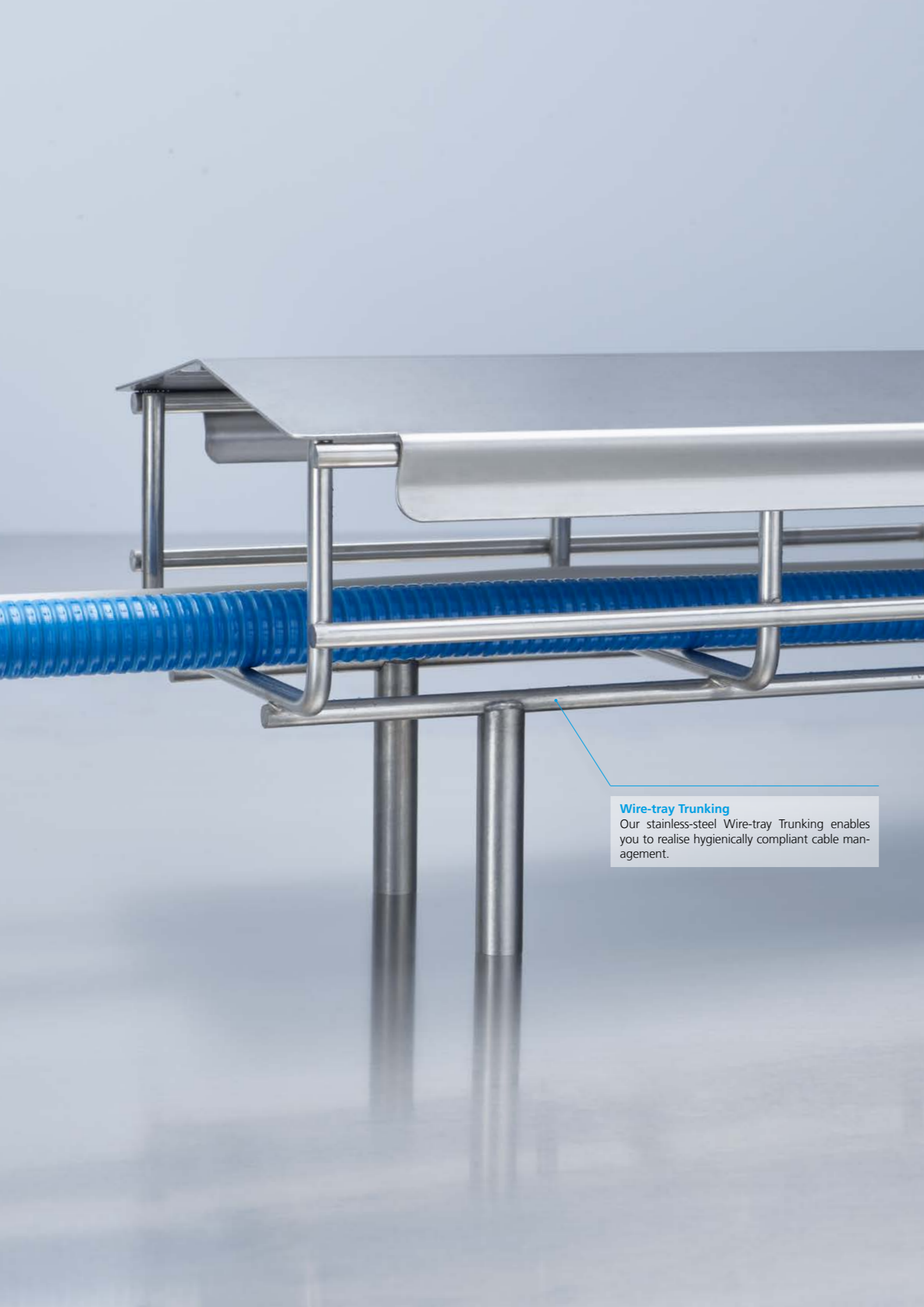
Your industrial applications that are subject to strict hygiene and sterility rules require cable connections that can be opened, because they have to be disconnected from time to time for maintenance or repair work. The technical aspects of such connections – e.g. tight seals against dust and water as well as strain relief – are crucial.

YOUR BENEFIT

We at PFLITSCH have developed our connector cable glands expressly to meet the requirements of industry-specific applications. We offer a Hygienic Design variant for the food and pharmaceutical industries that is both **FDA- and EHEDG-compliant**. But the basic technical features are impressive, too: The plug contacts integrated are highly customisable, the seal and strain relief are top notch and the compact design, in combination with the **exceptional ease of assembly**, make the glands easy to use and save time and costs.

>>> blueglobe CLEAN Plus connector cable gland

What you require	Detachable cable connections for industrial applications that meet the highest requirements for hygiene and basic technical properties.
Gland body	AISI 316L and AISI 303 stainless steel
Sealing insert	TPU/silicone
Temperature range	TPU -40 °C to +85 °C Silicone -40 °C to +105 °C
Type of protection	IP 68/IP 69 per EN 60529 (screwed)
Connection thread	M20x1.5 or push-through mounting with lock nut



Wire-tray Trunking
 Our stainless-steel Wire-tray Trunking enables you to realise hygienically compliant cable management.

RUN CABLES PERFECTLY HYGIENICALLY

PFLITSCH's open Wire-tray Trunking makes it possible

YOUR REQUIREMENTS

No matter whether we're talking about food production or the pharmaceutical industry: the larger a production plant, the more cables are required and the longer the distances over which they must be routed. And it's precisely this problem you're looking for a reliable solution for.

YOUR BENEFIT

PFLITSCH offers you a cable trunking system that is simply predestined for use in the food and pharmaceutical industries: PFLITSCH Wire-tray Trunking. Made of stainless steel and therefore strong, it enables large numbers of cables to be run safely and reliably over long distances – horizontally and vertically.

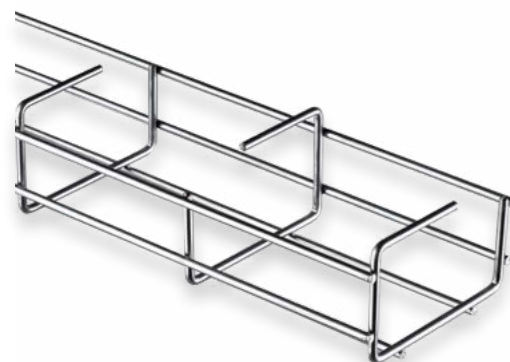
Its non-enclosed design ensures good ventilation to prevent heat build-up and makes cleaning simple. It's resistant to corrosion and all commonly available cleaning agents. Roof-shaped covers protect the cables from liquids dripping from above. In addition to its outstanding hygienic design, the ease and efficiency with which it can be preassembled and installed using just two tools and two connectors speak volumes for PFLITSCH's tried-and-tested Wire-tray Trunking.

PFLITSCH has created its own line of fastenings for its Wire-tray Trunking. The extensive range of brackets, carriers and retainers enable rational and safe mounting in different situations.

>>> Wire-tray Trunking

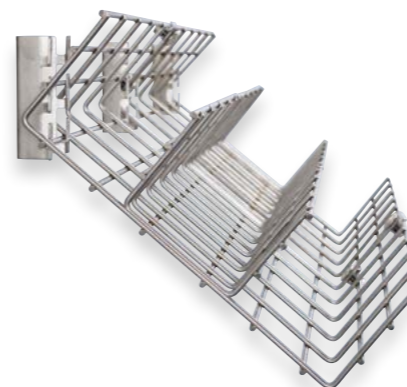
What you require	A hygienic cable management system that allows permanent access to the cables routed in it and is also easy to clean.
Material	AISI 304 and AISI 316L stainless steel
Dimensions	40 mm to 620 mm wide 20 mm to 120 mm high
Variants	Flat (F), U-, C-, G- and Z-shaped

Wire-tray Trunking product portfolio



>>> Wire-tray Trunking, Z-shaped

What you require	When cables are installed vertically, they can fall out of the standard version of Wire-tray Trunking if they aren't fastened to the trunking. This can be prevented by using our Z-shaped trunking that holds the cables in place thanks to its special design.
Material	AISI 303 and AISI 316L stainless steel
Dimensions	53 mm to 120 mm wide 53 mm to 120 mm high



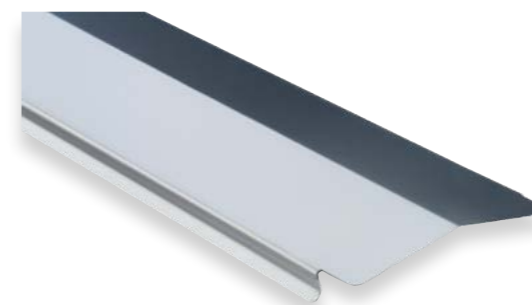
>>> Wire-tray Trunking with Tray Separators

What you require	To route cables in Wire-tray Trunking in a transparent way, you want to keep the various cable types hygienically separated from one another.
Material	Stainless steel
Dimensions	420 mm x 110 mm Partitioning: 90 mm/100 mm/90 mm



>>> Wire-tray Trunking, asymmetric

What you require	It's not always possible to prevent liquids from dripping during production. To make sure that they can flow away or drip safely from the cable trunking, we need a good solution – ideally with a cover – that is easy to clean.
Material	Stainless steel
Dimensions	75x60/95 120x75/110



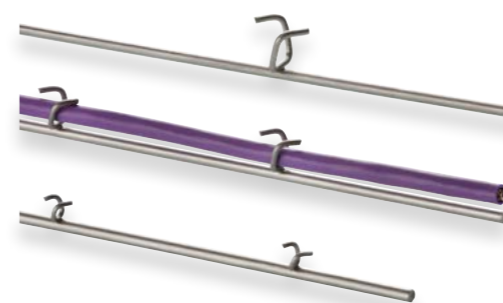
>>> Wire-tray Trunking Cover

What you require	The cables in your production plant require reliable protection against mechanical impacts. At the same time, liquids that drip from above must drain away safely. This is where the Wire-tray Trunking cover is the ideal solution: the cover acts as a roof that covers the entire width of the trunking and reliably drains away any liquids that drip onto it.
Material	AISI 303 and AISI 316L stainless steel
Dimensions	53 mm to 620 mm wide
Versions	Roof-type and full protection



>>> Additional Wire-tray Trunking floor – clippable

What you require	You want to use the space available in your Wire-tray Trunking as space-savingly as possible but also separate your cables according to e.g. power and data. But your cables still need to be well ventilated. This problem can easily be solved by using shelves – that can also be clipped in for added stability.
Material	Stainless steel
Dimensions	120 mm to 620 mm wide



>>> Single Wire System

What you require	When running single cables, installing a separate length of cable trunking for each cable is excessive and wasteful. The perfect option in such cases is the Single Wire System with its open and hygienic design.
Material	AISI 316L stainless steel
Dimensions	8 mm to 16 mm (inside dimension of guide rings)



Hygienic corrugated conduit

Thanks to special sheathing, the conduit is predestined for use in the food industry since dirt and residues of liquids cannot settle and build up on its smooth surface.

Pressure hoses with fabric reinforcement

Offer optimum protection for cables under mechanical stress and feature a long service life and excellent resistance properties.

FOR ALL-ROUND CABLE PROTECTION

Sophisticated, hygienic cable-protection solutions from PFLITSCH

YOUR REQUIREMENTS

The connections between system components and control units often place increased demands on the routing and protection of the cables. Cables are frequently routed through confined spaces between machines and often need to be protected against mechanical damage. Despite this, it's essential that they remain flexible. In addition, in many cases it's necessary to run several cables bundled together.

YOUR BENEFIT

We offer two options that are tailored to the respective application:

Pressure hoses

PFLITSCH pressure hoses are available with and without fabric reinforcement. They are **resistant** to mechanical loads and also to temperatures of up to +90 °C. Both their inner and outer **surfaces are sleek** and they are **easy to clean**. The hoses can be easily combined with the cable glands of our blueglobe CLEAN series.

Sheathed corrugated conduit

A sheathed, FDA-compliant corrugated conduit made of polyamide completes the range. In addition to its mechanical resilience, the conduit is also **extremely flexible**. Like the transparent pressure hoses without fabric reinforcement, it is the ideal choice whenever multiple cables need to be bundled. This can be done **hygienically** with both products. This hose type is also capable of withstanding temperatures of up to +120 °C for short periods. The hose, which is in the form of a sheathed corrugated conduit, is also compatible with our blueglobe CLEAN Plus cable glands.

Hoses product portfolio



>>> Abrasion-resistant pressure hose without reinforcement, smooth inside and outside

What you require A cable-protection solution with a good cost-benefit ratio for applications that demand a hygienic design. It combines high temperature resistance, good wear resistance and flexibility with excellent chemical resistance to oils, solvents, hydraulic and cleaning fluids.

Hose material	PUR 401
Temperature range	-40 °C to +90 °C
Wall thickness	2 mm to 3 mm
Inner diameter	8 mm to 19 mm



>>> Abrasion-resistant pressure hose with reinforcement, smooth inside and outside

What you require Demanding applications require a solution that offers exemplary flexibility for routing cables through very tight radii. With an optimum combination of high temperature resistance, outstanding wear resistance and excellent chemical resistance.

Hose material	PUR 441
Temperature range	-40 °C to +90 °C
Wall thickness	2 mm to 3 mm
Inner diameter	8 mm to 19 mm



>>> Sheathed corrugated conduit, flexible

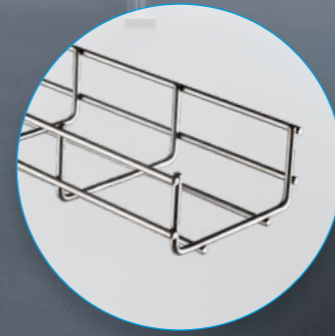
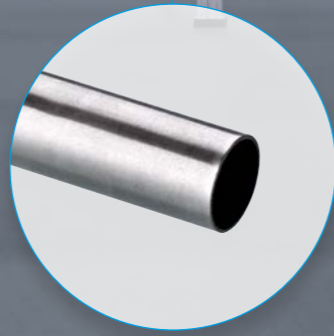
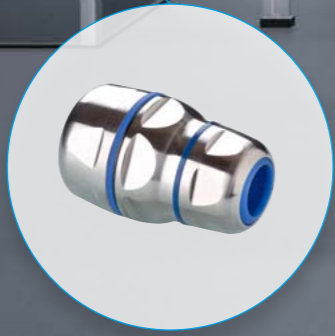
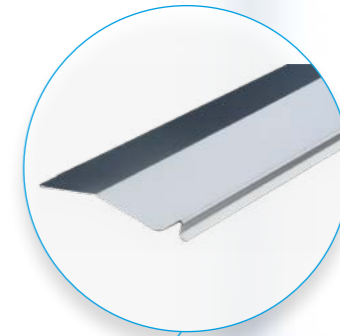
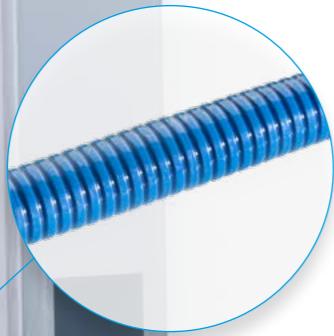
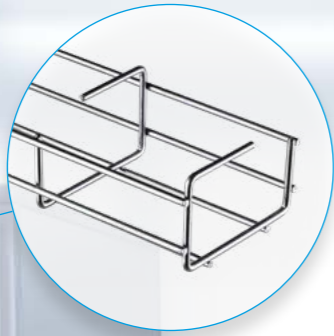
What you require Cable protection that impresses with high mechanical resistance and outstanding flexibility. The perfect solution for feeding multiple bundled cables into a housing or control cabinet – hygienically.

Hose material	FDA-compliant coated polyamide
Temperature range	-20 °C to +95 °C (briefly up to +120 °C)
Wall thickness	2.1 mm to 3.9 mm
Inner diameter	11.8 mm to 46.7 mm



**Hygienic Design solutions from PFLITSCH
are impressive – both as an overall package
and in every detail**

If you want to design the entire cable management system of your plant in accordance with the standards of Hygienic Design, then this portfolio from PFLITSCH is the number one choice. To this end, we have coordinated all solutions perfectly to achieve an optimum interplay: from cable routing through cable entry to cable protection.





Passion for the best solution

PFLITSCH GmbH & Co. KG

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