GF Piping Systems

Embrace the cold

COOL-FIT 2.0

COOL-FIT 2.0

Confident insulation

Efficient cooling processes are characterized by reliable installations and no maintenance times, zero system interruptions, and no energy loss. Choosing the right piping system can have a significant impact on these factors.

Cooling systems for industrial cooling, process cooling, and air conditioning consume large amounts of energy to maintain a constant system temperature. Selecting the appropriate piping system to support the cooling circuit is of utmost importance for operators who aim for an efficient and reliable cooling process. What should you consider in particular?

The two most important factors are the material and the insulation. With conventional metal installations, the risk of condensation and subsequent corrosion is exceptionally high. This risk also occurs to systems that have been post-insulated. The insulation material can be damaged during installation. Small gaps between the piping system and the insulation layer can occur and allow ice formation due to condensation and subsequent corrosion. In addition, post-insulation requires an extra work step.

Non-corrosive materials and vapor sealed insulation are of utmost importance for reliable and efficient piping systems in cooling applications.

COOL-FIT 2.0

Extreme reliability

The condensation and corrosion-free piping system for operations with no interruptions, zero maintenance, and highest efficiency.

System integrity
The complete product portfolio consists of pre-insulated pipes, fittings, valves, flexible hoses, and all tools necessary for a safe and reliable installation.

Efficient
High grade pre-insulation enhances energy efficiency (by 30%) with huge impact on costs and the planet's energy consumption.

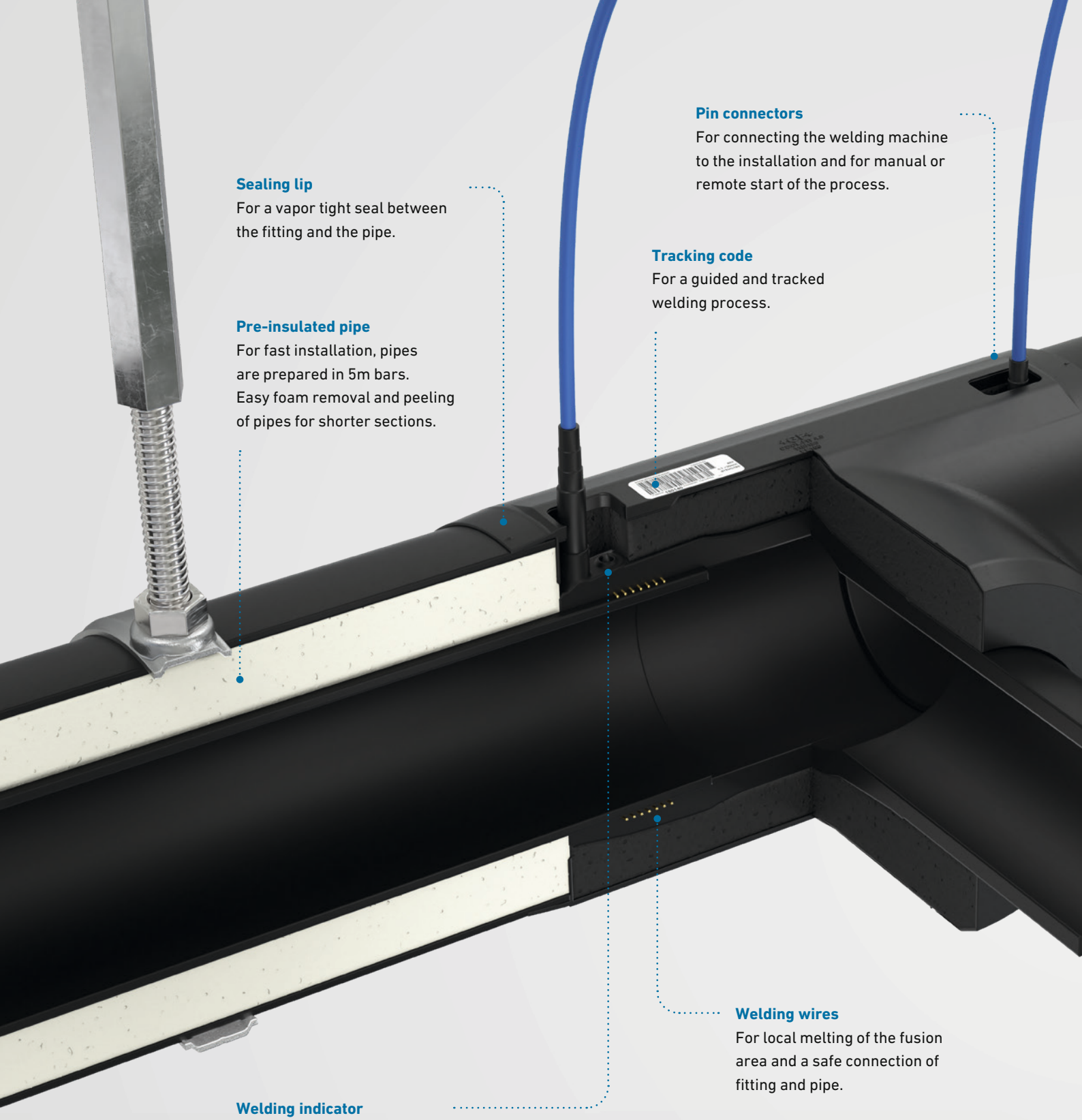
Reliable and safe
Maintenance-free operation for safe production with plastic construction providing a 25-year minimum lifespan.

Corrosion-free
100% corrosion-free and longer lasting than metal alternatives. No incrustation for reliable long-term efficient operation, ensures safe and reliable precision cooling.

Fast and easy
Simple jointing with electrofusion and system-specific tools.

Lightweight
60% less weight than steel pipes per meter, allowing single-person installs.

Industry specific
Small and large diameters specifically focused on indoor and outdoor applications.



Pin connectors
For connecting the welding machine to the installation and for manual or remote start of the process.

Sealing lip
For a vapor tight seal between the fitting and the pipe.

Tracking code
For a guided and tracked welding process.

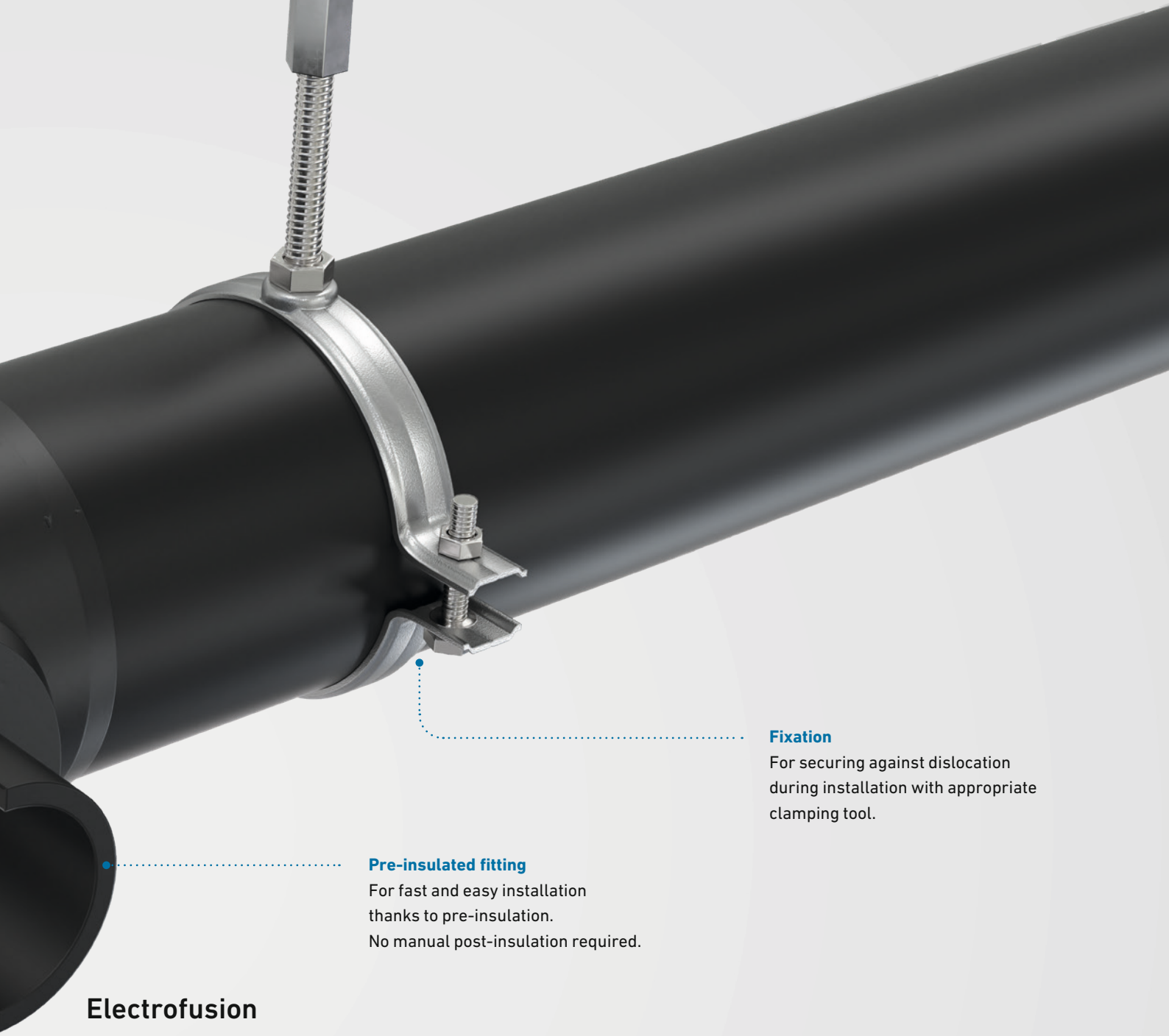
Pre-insulated pipe
For fast installation, pipes are prepared in 5m bars. Easy foam removal and peeling of pipes for shorter sections.

Welding wires
For local melting of the fusion area and a safe connection of fitting and pipe.

Welding indicator
For indication of a successful weld and haptic inspection after the welding process.

Learn how to make the perfect weld in the COOL-FIT video tutorial.

gfps.com/cool-fit



Fixation
For securing against dislocation during installation with appropriate clamping tool.

Pre-insulated fitting
For fast and easy installation thanks to pre-insulation.
No manual post-insulation required.

Electrofusion

Confident installation

One of the most significant benefits of COOL-FIT is the safe, simple, and fast installation by electrofusion. This jointing technology allows jointing within seconds.

In electrofusion, wires built into the fitting are locally heated through electric current, which causes the melting and fusion of the surrounding material. This joining technology ensures a secure and reliable connection. In combination with a pre-insulated fitting with sealing lip, continuous insulation is also guaranteed. Once the components are assembled and secured against dislocation, the installation can be connected to the electrofusion unit. From there, the unit takes over and gives step-by-step instructions on the process. The fusion itself only takes seconds, and the welding indicator indicates its success. All welding data is stored on the welding device and is available for documenting the project.

Extreme efficiency

COOL-FIT leads the way when it comes to energy-efficient cooling and helps you to work in a more environmentally friendly and energy-efficient manner.

The number of air conditioners in Europe will double by 2030, which leaves our industries with the challenge of rising energy demand. As a company that is active worldwide, it is GF Piping Systems' mission to show our commitment to sustainability by supporting our customers' success with innovative, energy-saving solutions making the collective global footprint more sustainable.

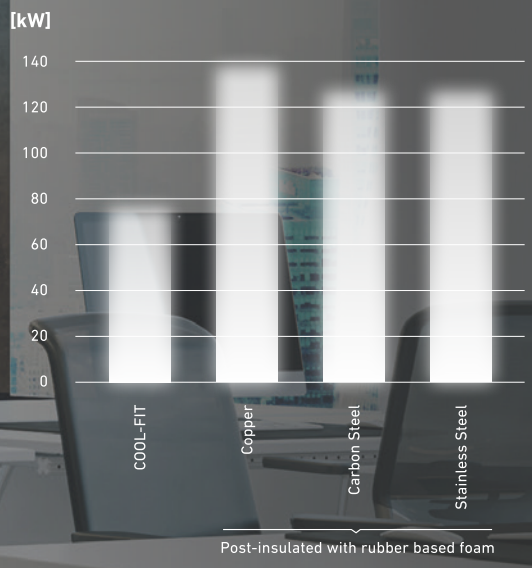
COOL-FIT environmental benefits

- Saves at least 30% of energy compared to traditional cooling systems, drastically reducing operating costs and CO_2 emissions.
- Non-corrosive, with at least 25-year lifetime leading to additionally saved resources related to maintenance, repairs and replacements.
- Helps achieve relevant green building declarations like DGNB, BREEAM, and LEED.
- Free of HBCD, halogens and halogenated blowing agents. It contains no chlorinated paraffins and neither lead nor tin.
- Contains no other substance of very high concern according to the REACH criteria of the European Chemicals Agency or any candidate substance.
- Strict quality management (ISO 9001) and health and safety management (OHSAS 18001) during production. GF Piping Systems is certified according to ISO 14001 for its environmental management system.

COOL-FIT for the environment

COOL-FIT helps to reduce the environmental impact of your cooling- and refrigeration application.

Compared to post-insulated metal systems, COOL-FIT is considerably more environmentally friendly and helps for operations to be more energy-efficient. For example: a cold store uses 1500 meters of piping to transport liquid for the cooling system. COOL-FIT releases about 100 tons carbon dioxide less than a metal system during production and operation. This saving is equivalent to a journey of 446'000 kilometers by car.



30%

energy savings compared to traditional cooling systems, drastically reducing operating costs and CO_2 emissions.

Ultimate flexibility

To expand the COOL-FIT product portfolio, we worked with a team of experienced engineers and industry experts to deliver high-quality products and services that meet the ever-evolving needs of the global market. Our innovations strive for improving energy efficiency, reducing environmental impact, and optimizing system performance.

Branch off with complete integrity

The COOL-FIT Weld-in port enhances the capabilities of the COOL-FIT piping system by simplifying the installation of additional sensors and branches across multiple pipe sizes.

Learn more about the COOL-FIT Weld-in port
www.gfps.com/coolfit

+ Flexible planning

Easier project planning due to significantly increased flexibility with Weld-in port solution.

+ Efficient installation

Fast and easy installation in just 15 minutes, thereby reducing on-site work and labor costs.

+ Lower risk

Less failures with one fitting per branch size with a standardized install process, suitable for COOL-FIT pipes for d63 – d225.

+ Compact design

Designed with end customers mind, less space required. Ideal for new and retrofit projects.

COOL-FIT 2.0 Push System

The COOL-FIT 2.0 Push System is an addition to the existing pre-insulated plastic piping system COOL-FIT 2.0 by extending the product range with smaller piping dimensions to reach the cooling unit.

Learn more about the COOL-FIT 2.0 Push System
www.gfps.com/coolfit2

+ One complete system

Complete pre-insulated piping solution for confident insulation, including pipes, fittings, valves, and tools.

+ Bridging big to small

Additional dimensions extend the range to reach the cooling unit for greater system performance and assurance.

+ Plug and play

Mechanical connections mean significantly less tools, easy handling, and faster installations.

+ Safe operation

Maintenance-free operation for 25 years thanks to unique material properties and safe jointing technology.

Complete system integrity

With COOL-FIT, GF Piping Systems offers a unique, top-notch piping system solution, including pre-insulated pipes, fittings, valves, flexible hoses, and tools. The system is available in a standard version or with a higher fire classification (COOL-FIT 2.0F), to withstand even harsher conditions.

Pre-insulated valves

GF Piping Systems' pre-insulated valves are an integral part of the COOL-FIT system and ensure an efficient cooling process. Pre-insulated valves ensure that the entire piping system is thoroughly insulated and perfectly sealed.

Foam removal and peeling tools

GF Piping Systems takes the hassle out of foam removal and peeling. Easy to use foam removal tools ensure consistent peeling quality when preparing pipe surfaces. The tools are designed in such a way that pipes of different diameters can be prepared for installation in no time at all.

Pre-insulated pipes

Easy to join and install, lightweight pre-insulated pipes help to minimize energy loss and reduce long-term running costs. Insulated with high-energy efficient foam, they are ideal for both new construction and retrofitting.

Pre-insulated fittings

When creating branch lines, pre-insulated tee fittings make installation much easier. The fittings cover multiple dimension possibilities including various reductions.

Bridging big to small dimensions

The COOL-FIT 2.0 Push System is an addition to the existing system COOL-FIT 2.0, by extending the product range with smaller piping dimensions to reach the cooling unit.

COOL-FIT Weld-in port

The COOL-FIT Weld-in port simplifies the installation of additional sensors and branches across multiple pipe sizes.

System specifications

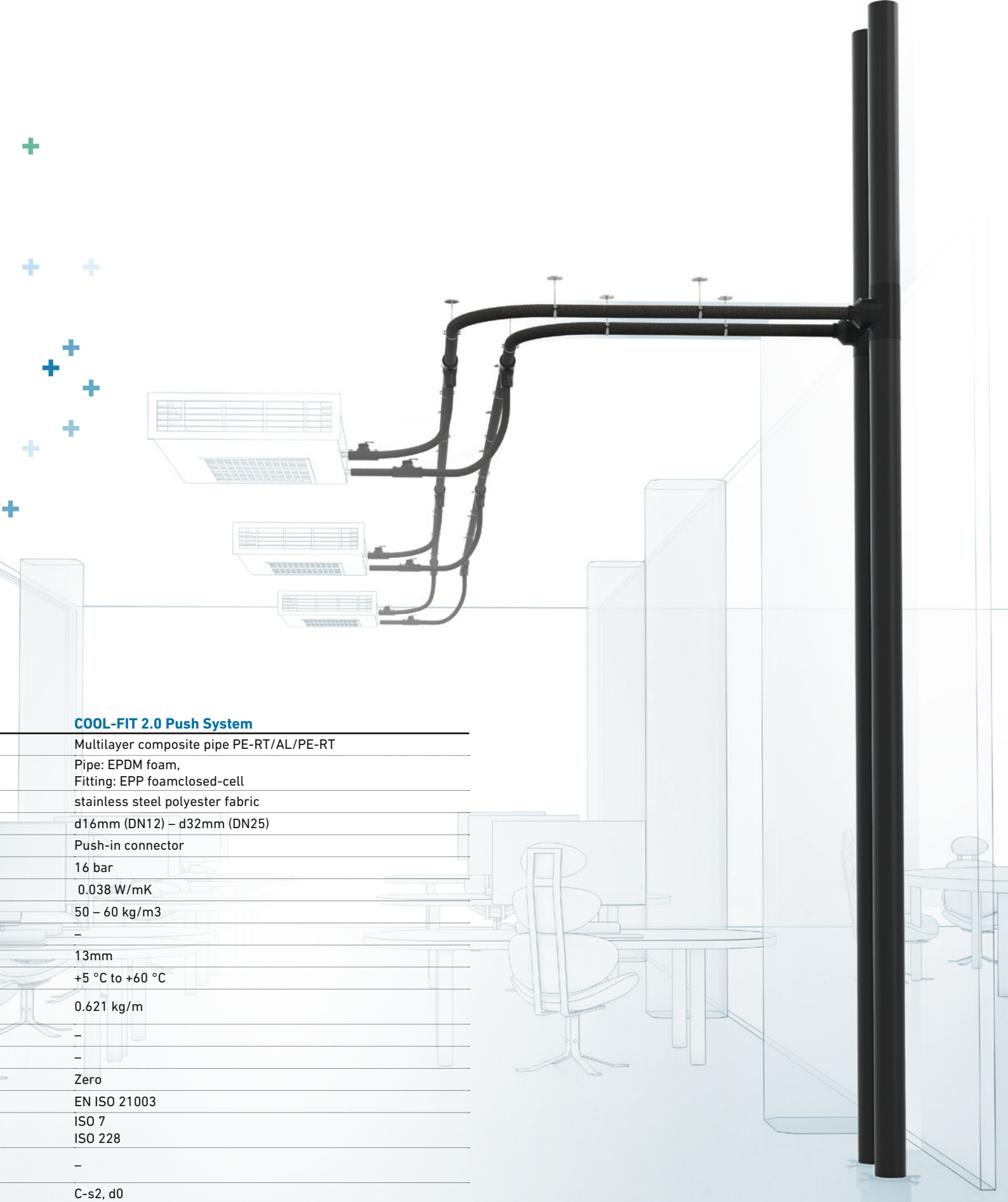
One entire system

A mainstay of the GF Piping Systems product range, COOL-FIT 2.0 is a plastic chilled-water piping system that is guaranteed not to corrode or be affected by the formation of condensation. The rapid installation time and high energy efficiency make this system a prime option for building owners, general contractors and planners as part of commercial/residential construction, data center design and process cooling applications.

System properties

		COOL-FIT 2.0	COOL-FIT 2.0F
Materials *	Medium pipe	PE100	PE100
	Insulation	GF HE foam, halogen-free, closed-cell	GF HE foam, halogen-free, closed-cell
	Outer jacket	Pipe: HDPE, Fitting: GF-HE	Flame retardant – GF-FR
Dimensions		d32 mm (DN25) – d140 mm (DN125)	d32 mm (DN25) – d140 mm (DN125)
Connection technology		Electrofusion	Electrofusion
Nominal pressure		16 bar, SDR 11	16 bar, SDR 11
Insulation	Thermal conductivity λ at 20°C	≤ 0.022 W/mK	≤ 0.022 W/mK
	Density	≥ 70 kg/m3	≥ 70 kg/m3
	Foam cell size	max. Ø 0.5 mm	max. Ø 0.5 mm
	Nominal thickness	22 mm	22 mm
Temperature	Medium	0 °C to +60 °C	0 °C to +60 °C
Weight (without medium)	Pipe d32 mm	1.12 kg/m	1.06 kg/m
	Pipe d110 mm	5.5 kg/m	5.39 kg/m
Environment	Resistance	Moisture- and vapor-tight	Moisture- and vapor-tight
	Ozone Depletion Potential (ODP)	Zero	Zero
Standards	Pipes & Fittings	EN ISO 15494	EN ISO 15494
	Threads	ISO 7 ISO 228	ISO 7 ISO 228
	Valves	EN ISO 16135 EN ISO 16136	EN ISO 16135 EN ISO 16136
Fire classificaiton	EN 13501-1	E	B-s2, d0

*** All three materials are firmly bonded together.**



COOL-FIT 2.0 Push System
Multilayer composite pipe PE-RT/AL/PE-RT
Pipe: EPDM foam, Fitting: EPP foamclosed-cell
stainless steel polyester fabric
d16mm (DN12) – d32mm (DN25)
Push-in connector
16 bar
0.038 W/mK
50 – 60 kg/m3
–
13mm
+5 °C to +60 °C
0.621 kg/m
–
–
Zero
EN ISO 21003
ISO 7 ISO 228
–
C-s2, d0

Air conditioning and cooling applications

COOL-FIT 2.0 optimizes any air conditioning, process cooling and industrial air conditioning installation.

Industrial air conditioning

An ambient work environment for the employees and stable temperatures for machinery help to sustain uninterrupted and efficient production processes.

Cruise Ships

Corrosion-free air conditioning plays a vital role in onboard accommodation as it helps to have a healthy and pleasant atmosphere concerning temperature and humidity.

Process Cooling

Production processes require stable temperatures for machinery. Reliable and maintenance-free cooling systems help to make production more efficient.

Air Conditioning

Uninterrupted cooling processes and air conditioning ensure an ambient and comfortable environment at workplaces, residential buildings and hospitals.

One partner from planning to commissioning

With Specialized Solutions, GF Piping Systems supports the design and installation of state of the art plastic piping systems, so that owners and planners can concentrate on their daily business without interruption. GF Piping Systems is present every step of the way, from providing planning support on new projects to testing the condition of old systems.

More information at
gfps.com/specialized-solutions

Custom Product Design and Prefabrication

Having your individual needs and application in focus, our customizing teams forge the solution that fits you best, developing custom-made parts to complete systems or special solutions produced in small series, individual consulting and off-site prefabrication. Through our global network of flexible locations, we offer a wide range of comprehensive solutions. Tailored innovation, inspired by you.

Digital Libraries

The libraries cover three key areas for designing, creating, and maintaining a project: Building Information Modeling, the Plant Design Software, and the CAD Library helping you reduce costs and construction times while ensuring design accuracy and integrity. Reduce time and effort while ensuring design accuracy and integrity.

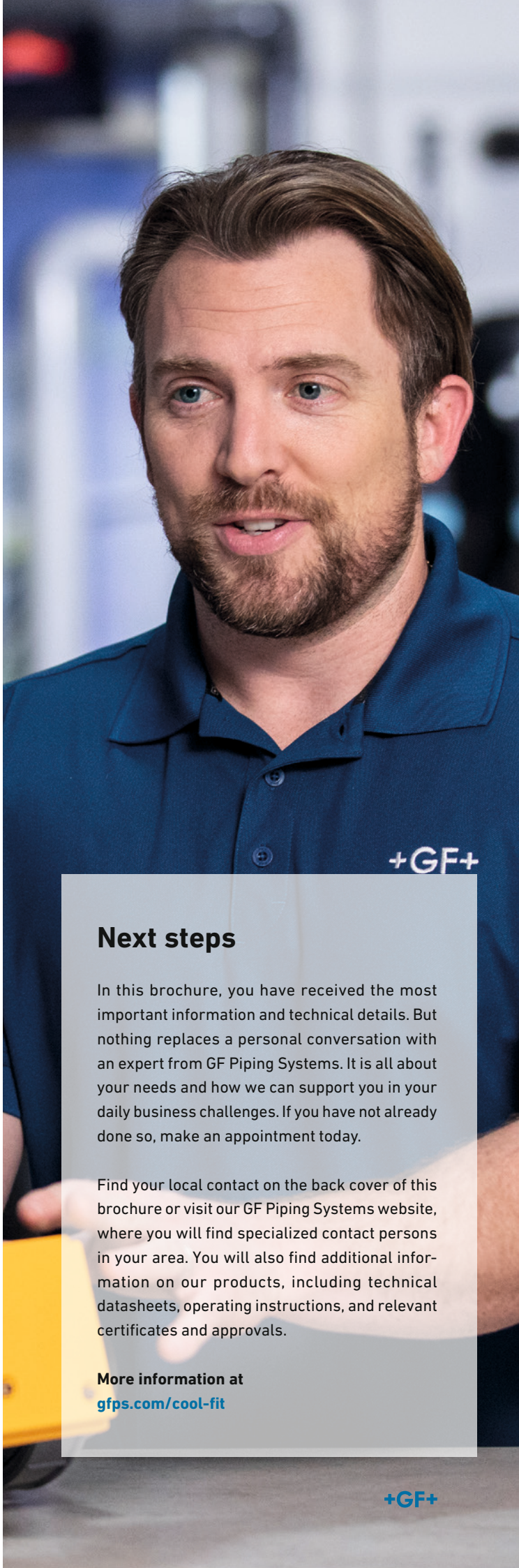
Engineering

Increase the efficiency of your project with tailor-made analysis packages from GF Piping Systems. Minimize project risks by diminishing incorrect calculations or wrong material selection. Rely on GF's experience in fast project implementation and choose our durable, safe, and reliable piping systems delivery. Established knowledge, guiding you through.

Cooling Tool-Box

The cooling calculation tool from GF Piping Systems supports the dimensioning and design of the secondary circuit. The cooling calculation tool includes calculation functions for expansion/ contraction, energy saving, surface temperatures, pipe dimensioning, pressure losses, CO2 footprint, and many more.

Use the online calculator
gfps.com/cooling-tools



Next steps

In this brochure, you have received the most important information and technical details. But nothing replaces a personal conversation with an expert from GF Piping Systems. It is all about your needs and how we can support you in your daily business challenges. If you have not already done so, make an appointment today.

Find your local contact on the back cover of this brochure or visit our GF Piping Systems website, where you will find specialized contact persons in your area. You will also find additional information on our products, including technical datasheets, operating instructions, and relevant certificates and approvals.

More information at
gfps.com/cool-fit

GF Piping Systems

Local support around the world

Visit our webpage to get in touch with your local specialist:
www.gfps.com/our-locations

+GF+

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