

Pre-insulated pipes and fittings

COOL-FIT ABS Plus system

Complete pipe system for secondary cooling and refrigeration systems in ABS



The ideal system for secondary cooling

COOL-FIT ABS Plus is a completely pre-insulated plastic pipe system for secondary cooling and refrigeration systems operated with brine or glycol solutions. The system is based on proven and cold-shock resistant ABS pipes and fittings, which are insulated with high-quality PUR foam in addition to a robust and UV-resistant outer pipe. The smooth inner surface of the ABS pipe provides for minimal pressure loss, while the low thermal conductivity of plastic and the insulation ensure low energy and running costs for a lifetime. The 3-in-1 construction reduces installation time to a minimum. COOL-FIT is ideal for use in cold storage, in food and beverage production (e.g. in breweries, dairies, slaughterhouses), in supermarkets as well as for process cooling in industrial cooling water systems or in data centers.

+ Main benefits

- Safety** = No corrosion
- Simplicity** = Fast connections, easy suspension
- Efficiency** = Excellent insulating properties, low operating and energy costs
- Environment** = Low CO₂ emissions



+ Systems for refrigeration and cooling



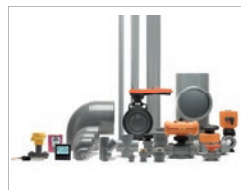
COOL-FIT ABS Plus System



COOL-FIT PE Plus System



COOL-FIT 2.0 System



ABS System



ecoFIT System (PE)



+ Everything from one source

The name Georg Fischer stands for reliability and durability - and has done so for over 200 years. We develop and manufacture pipes, fittings, manual and actuated valves, measurement and control equipment, as well as jointing technology. We guarantee the best quality, state-of-the-art products and unique features. Being a system provider, we are able to put together the perfect solution for our customers' individual needs. Our Customizing Teams will also manufacture piping components on request, tailor-made to customer specifications.

A symbiosis of ecological and economical benefits

COOL-FIT is used exclusively in secondary cooling systems. The amount of refrigerant can be reduced in this type of installation by 80 to 90 percent compared to conventional systems. COOL-FIT thus achieves a TEWI (Total Equivalent Warming Impact) value which is 50 percent superior to other existing systems.

Compelling energy-saving arguments

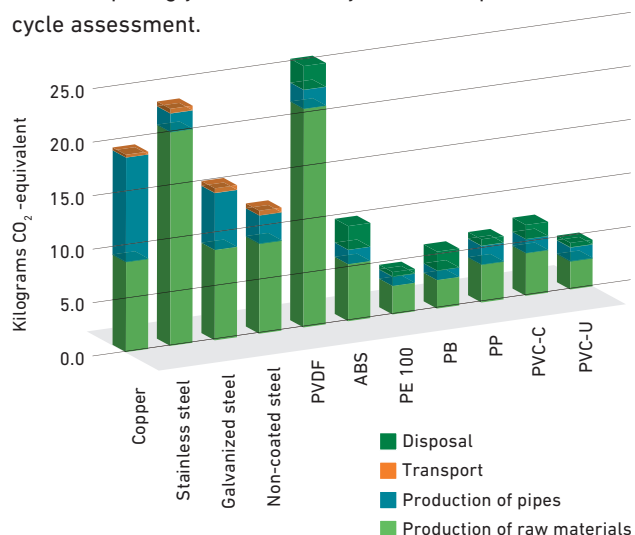
The system has clear advantages over traditional metal pipe systems in terms of energy consumption and resource conservation. This pertains to production and use by the customer.

Practically maintenance-free

The functionality of the piping is not impaired in any way by either corrosion or lime deposits; the pipes therefore remain virtually maintenance-free throughout their entire service life.

Environmental compatibility

We act and think sustainably. Georg Fischer uses natural resources sparingly and continually strives to optimize the life cycle assessment.



Source: Pioneering Green Solutions, GF Piping Systems 2010

Energy efficiency

A completely pre-insulated system helps our customers save even more energy. The low lambda value translates into high energy efficiency. COOL-FIT uses approximately 50 percent less energy in operation than conventional copper systems.

Online CO₂ calculator

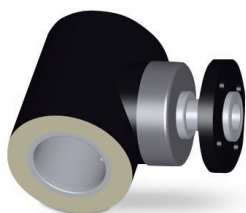
We attach great importance to energy efficiency and reducing water consumption in the manufacture and use of our products. Sustainability is also supported by the durability, permanent availability and large assortment of our products. We invite you to calculate the CO₂ savings potential of plastic compared to metal piping with our CO₂ calculator at www.gfps.com

The fast, sturdy and efficient joining

GF Piping Systems has invested considerably in developing the ideal joining technologies for special applications and materials. With the COOL-FIT ABS Plus nipple no peeling of the polyurethane insulation or subsequent insulating on site is required.

In addition to sophisticated and successful product ranges and systems, we offer a service package with planning tools, accessories, training, tools and high performance logistics. Our specialist teams around the world are available to assist you.

Planning tools



CAD library

The extensive CAD library is the most frequently used planning tool. The freely available database comprises over 30 000 drawings as well as technical data for our customers. Many formats are available.

Joining techniques



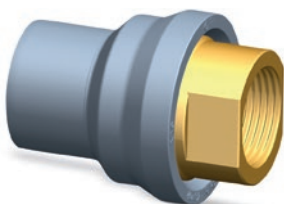
Solvent cement - fast and easy

COOL-FIT is joined quickly and safely. The solvent cement joining method saves considerable time compared to the welding of metal pipes.



Solvent cement - inner nipple connector

With the COOL-FIT ABS Plus nipple, no PUR insulation needs to be removed. An integrated pipe stop creates a gap for visual inspection. The gap is sealed afterwards and is water and vapor-tight.



Mechanical connection to metal components

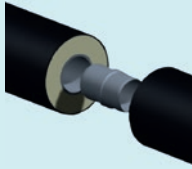
The latest generation of transition fittings with integrated O-ring seal has been specially designed for cooling applications with large temperature fluctuations.

Product range overview

More than a system

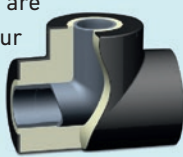
All your requirements are met with this product range for easy installation and reliable operation.

Patented barrel nipple.
Pipe-to-pipe jointing.




No time-consuming peeling of the polyurethane insulation.

Fittings and pipes are pre-insulated in our plant. Compact and high quality.



High insulation values over entire lifetime.

Corrosion-free ABS valves and actuators are essential in cooling and refrigeration.



Precise control and temperature regulation.

COOL-FIT ABS Plus includes not only corrosion-free, pre-insulated pipes and fittings, but transitions to metal as well. Also available are manual and actuated valves as well as sensors for flow, temperature and pressure control.

Product overview

Description	D 1	90	90	110	110	125	140	160	180	225	250	280	315	335	400	450	250	355
	DN	20	25	32	40	50	65	80	100	125	150	200	225	250	250	300	250	450
	PN	d	25	32	40	50	63	75	90	110	140	160	200	225	250	280	315	450
Pipes, pre-insulated	10																	
	6																	
Bends 45° / 90°, pre-insulated	10																	
	6																	
T-90° equal, pre-insulated	10																	
	6																	
T-90° reduced, pre-insulated	10																	
	6																	
Instrument fittings, pre-insulated	10																	
Flange connections	10																	
Ball valves, manual & actuated ²	10																	
Butterfly valves, manual & actuated ²	10													PP	PP	PP		
Diaphragm valves, manual & pneumatic	10																	
Check valves	10																	
Seals	10																	
Pipe clips in plastic	-																	
Sensors and accessories	-																	
Cementing	-																	
Transitions to metal	10																	

For further information see: COOL-FIT PE Plus System

- ¹ ø of protective pipe in PE
- ² electric or pneumatic actuation
- on request

System specifications

Lower operating costs and higher energy efficiency

COOL-FIT ABS Plus pipes are resistant to oxygen diffusion and corrosion, so a long service life is guaranteed. In secondary cooling applications COOL-FIT ABS Plus exhibits high energy efficiency (low lambda value) and is maintenance-free throughout its entire lifetime. It is also robust and easy to work with on building sites - even under difficult conditions. All in all, COOL-FIT ABS Plus pipes are easier and faster to install than metal pipes, and this naturally reduces costs for our customers.

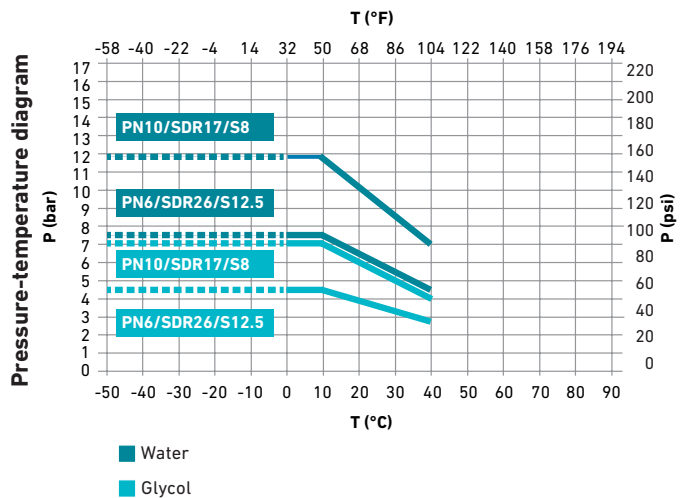
Specifications

The pre-insulated COOL-FIT ABS Plus pipe and fitting components comply with the following guidelines and norms:

System specifications		
ABS (impact resistant)	Temperature	-50 °C to +40 °C
	Pressure rating	PN10 (d25–d225) PN6 (d250–d315)
	Standard	EN ISO 15493
Joining technology	Solvent cement	Tangit cement
Weight (example)	1 Meter d50 x 110	ABS 0.52 kg (steel pipe 3.50 kg)
Insulation	- Polyurethane rigid foam, closed-cell (no harmful foaming agents) - Density: > 45 kg/m ³ - Thermal conductivity: 0.026 W/m*K	
PE protective pipe black	Properties	Impact resistant, dimensionally stable, water and vapor-tight, weatherproof
	F = 1.0	Water (> 0 °C)
Media	F = 1.0	Inorganic salt solutions
	F = 1.25	Organic salt solutions
	F = 1.7	Glycol solutions (max. 50%)
Oxygen impermeability	DIN 4726	< 0.1 g/m ³ day
Pipe fire stops	Standards and approvals	EN 1366/EI 90/EI120 DIBT Nr. Z-19.17-1194
	Environment	CFC-free and recyclable

Application limits for water and water-soluble glycol

The data given is based on 25-year values.



NB: The COOL-FIT system is not suitable for use with gaseous primary refrigerants, such as ammonia, propane, CO₂, R407 and R22.

Please contact us for application support.

The left list is considered to be a rough guideline and does not take the place of a detailed assessment of material suitability for your particular application. The information is based on empirical data and according to the state of the art. These data are only intended as a guide. In practice, additional factors such as concentration, pressure and jointing technology must also be taken into account. The technical data are not binding and not expressly warranted characteristics of the goods.

Application

The perfect solution

In selecting a suitable piping system to carry the coolant in a long-lasting and dependable cooling system in a warehouse for fruit and vegetable storage, special attention was dedicated to durability, efficiency, low weight and ease of installation.

State-of-the-art cooling logistics

The warehouse of a wholesaler was designed according to the latest technical know-how.

The goal was to realize an environmentally friendly and sustainable overall refrigeration concept, thus enabling long-term and reliable operation of the cooling system with low energy consumption.

Cooling system - primary cooling circuit

The cooling system was constructed as a coolant system. In the primary cold production, ammonia (NH₃), a natural primary coolant, was used. NH₃ has neither global warming potential (GWP) nor ozone depleting potential (ODP).

In other words, ammonia (NH₃) does not fall under the EU F-Gas regulation (EC no. 842/2006) and therefore complies with the environmental specifications for this plant. Ammonia is also very energy efficient.

Cooling system - secondary cooling circuit

COOL-FIT ABS Plus is used in the secondary cooling circuit, where food-safe propylene glycol is circulated as the coolant.

Plant engineers require specialized know-how

COOL-FIT is joined using the proven solvent cement jointing method, which is easy and safe to work with. In spite of this, building a large refrigeration plant is a challenge even for experienced plant engineers. Having well-trained and qualified staff is therefore important in order to guarantee a good installation. For this reason, installation personnel was trained in the handling of pre-insulated plastic pipe systems at the GF Piping Systems Training Center prior to on-site construction.

COOL-FIT ABS Plus scores with a reduction in weight, easier suspension and longer service life.

Distribution centre for fruit and vegetable storage.



Worldwide at home

Our sales companies and representatives ensure local customer support in over 100 countries

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