



Pre-insulated pipe and fittings

Complete
piping system for
secondary cooling and
refrigeration systems
in ABS



COOL-FIT ABS Plus System

COOL-FIT ABS Plus System

Corrosion resistance and efficiency make this pre-insulated system ideal for secondary cooling systems.

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 pipe 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 ensures low energy and running costs for a lifetime. The 3-in-1 construction also 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.



Key benefits:

Safety	=	No corrosion
Simplicity	=	Fast connections, easy suspension
Efficiency	=	Excellent insulating properties, low operating and energy costs
Environment	=	Low CO ₂ emissions

Systems for refrigeration and cooling:



Everything from one source

From planning to installation — we have all the products and systems you need for your applications.

The name Georg Fischer stands for reliability and durability — and has done so for over 200 years. We develop and manufacture pipe, fittings, manual and actuated valves, measurement and control equipment, as well as joining 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 — in small series or one-off production.

A symbiosis of ecological and economical benefits: COOL-FIT

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 pipe therefore remain virtually maintenance-free throughout their entire service life.

Energy efficiency

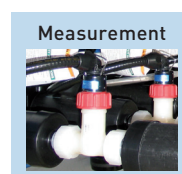
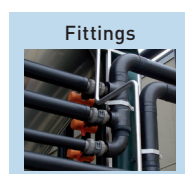
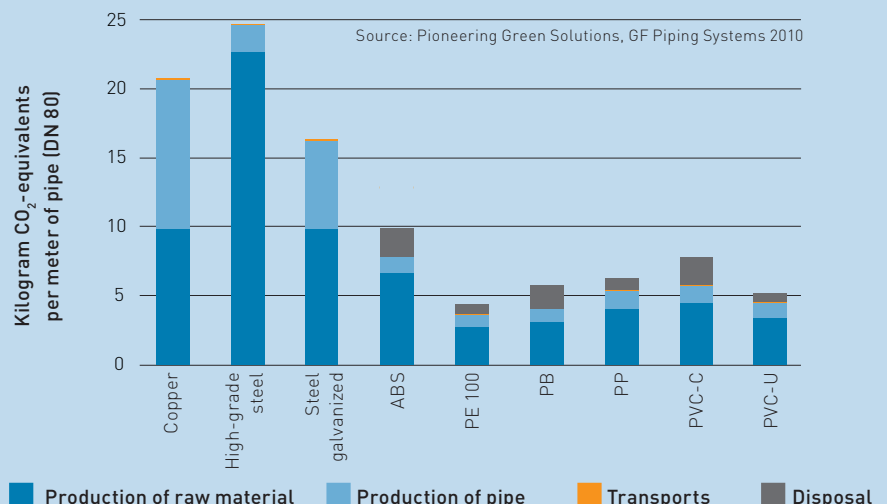
A completely pre-insulated system helps our customers save even more energy. The low lambda value translates into high energy efficiency. COOL-FIT uses approximately 50 percent less energy in operation than conventional copper systems.

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.piping.georgfischer.com/go/green

Environmental compatibility

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

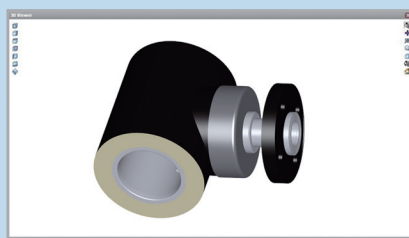


Joining technology

Customers profit by the fast, sturdy and efficient joining of COOL-FIT ABS Plus.

GF Piping Systems has invested considerably in developing the ideal joining technologies for special applications and materials. With the COOL-FIT 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

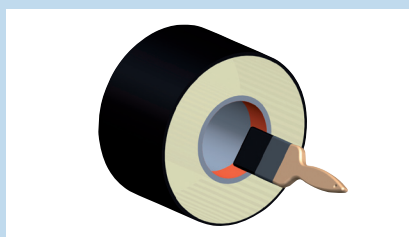


CAD library

GF Piping Systems' most popular planning tool, the CAD library, contains over 30,000 drawings and technical details, available online or as DVD. Easy integration in CAD drawings.

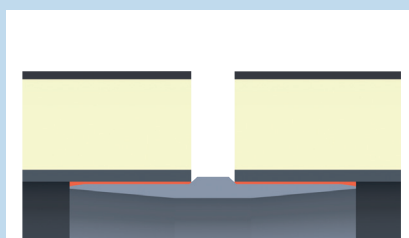
Joining technology

Solvent cement



Tried and tested

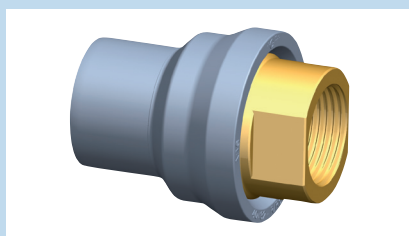
COOL-FIT is joined quickly and safely. The solvent cement joining method saves considerable time compared to the welding of metal pipe.



Inner nipple connector

With the COOL-FIT 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



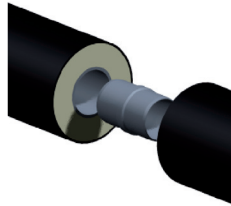
Connection to metal components

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

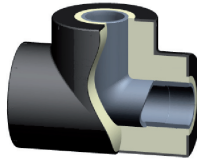
All your requirements are met with this product range for easy installation and reliable operation.

Patented barrel nipple. Pipe-to-pipe joining.



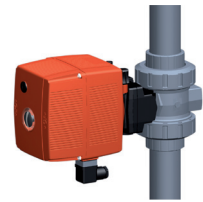
No time-consuming peeling the polyurethane insulation.

Fittings and pipe 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.

Product overview

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

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

¹ ∅ of protective pipe in PE ² electric or pneumatic actuation • on request

System specifications

Lower operating costs and higher energy efficiency with COOL-FIT ABS Plus for secondary cooling systems.

COOL-FIT ABS Plus from GF Piping Systems is a special secondary piping system that meets the high requirements of end users and plant engineers. COOL-FIT ABS Plus pipe is 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 practically 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 pipe is easier and faster to install than metal pipe, and this naturally reduces costs for our customers.

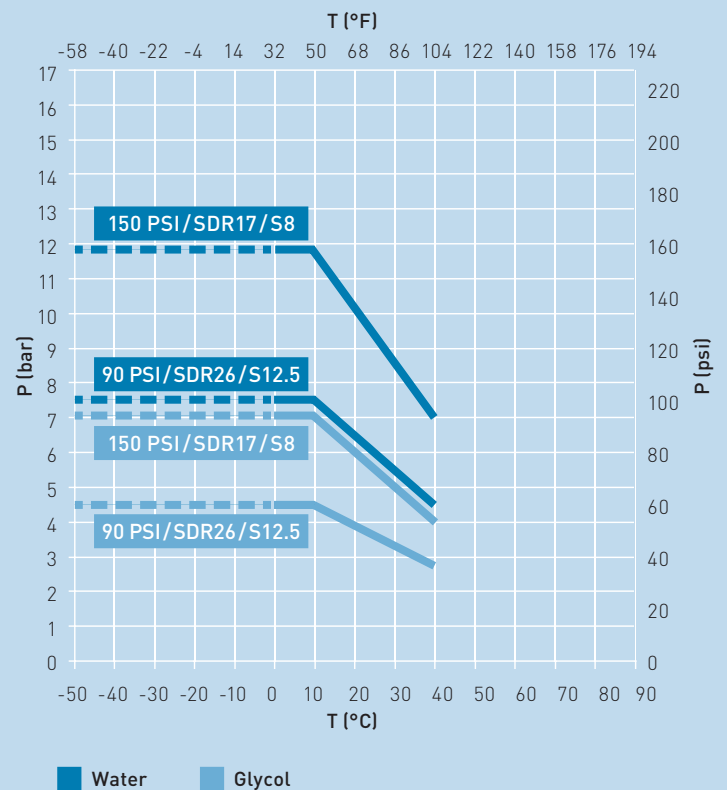
Specifications

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

ABS (impact resistant)	Temperature	-58°F to +104°F	
	Pressure rating	150 PSI (d25–d225) 90 PSI (d250–d315)	
	Norm	EN ISO 15493	
Joining technology	Solvent cement	COOL-FIT cement	
Weight (example)	d50 (10 ft) × 110 (1½")	ABS (steel pipe	3.5 lb 23.5 lb)
Insulation	<ul style="list-style-type: none">- Polyurethane rigid foam, closed-cell (no harmful foaming agents)- Density: > 45 kg/m³- Thermal conductivity: 0.026 W/m*K		
PE protective pipe black	Properties	Impact resistant, dimensionally stable, water and vapor-tight, weatherproof	
Media	F = 1.0	Water (> 32°F)	
	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/m³ day	
Pipe fire stops	Norms 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 pre-insulated ABS system is not suitable for use with gaseous primary refrigerants, such as ammonia, propane, CO₂, R407 and R22.

The above 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. This data is only intended as a guide. In practice, additional factors such as concentration, pressure and joining technology must also be taken into account. The technical data is not binding and not expressly warranted characteristics of the goods.

Please contact us for application support.

Example application

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

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.



COOL-FIT ABS Plus pipe installation on the distribution center roof.



Distribution center for fruit and vegetable storage.

State-of-the-art cooling logistics

The warehouse of a wholesaler was designed according to the latest technical expertise.

The goal was to create 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 (NH_3), a natural primary coolant, was used. NH_3 has neither global warming potential (GWP) nor ozone depleting potential (ODP).

In other words, ammonia (NH_3) 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.

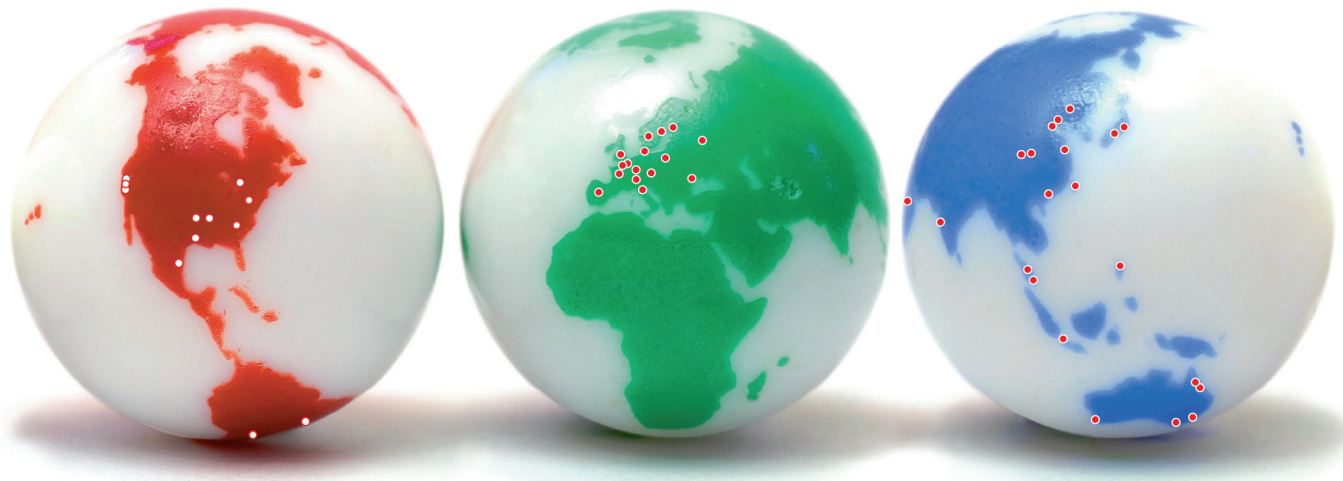
Plant engineers require specialized knowledge

COOL-FIT is joined using the proven solvent cement joining 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.

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Adding Quality to People's Lives



GF Piping Systems

2882 Dow Avenue, Tustin, CA 92780-7258

Tel. (714) 731-8800, Toll Free (800) 854-4090, Fax (714) 731-6201

e-mail: us.ps@georgfischer.com

www.gfpiping.com

The technical data is not binding. They neither constitute expressly warranted characteristics nor guaranteed properties nor a guaranteed durability. They are subject to modification. Our General Terms of Sale apply.

Argentina/Southern South America

Georg Fischer Central Plastics
Sudamérica S.R.L.
Buenos Aires, Argentina
Phone +5411 4512 02 90
gfccentral.ps.ar@georgfischer.com

Australia

George Fischer Pty Ltd
Riverwood NSW 2210 Australia
Phone +61(0)2 9502 8000
australia.ps@georgfischer.com
www.georgfischer.com.au

Austria

Georg Fischer
Rohrleitungssysteme GmbH
3130 Herzogenburg
Phone +43(0)2782 856 43-0
austria.ps@georgfischer.com
www.georgfischer.at

Belgium/Luxembourg

Georg Fischer NV/SA
1070 Bruxelles/Brüssel
Phone +32(0)2 556 40 20
be.ps@georgfischer.com
www.georgfischer.be

Brazil

Georg Fischer Ltda.
04795-100 São Paulo
Phone +55(0)11 5525 1311
br.ps@georgfischer.com
www.georgfischer.com.br

Canada

Georg Fischer Piping Systems Ltd
Mississauga, ON L5T 2B2
Phone +1(905)670 8005
Fax +1(905)670 8513
ca.ps@georgfischer.com
www.georgfischer.ca

China

Georg Fischer
Piping Systems Ltd Shanghai
Pudong, Shanghai 201319
Phone +86(0)21 58 13 33 33
china.ps@georgfischer.com
www.georgfischer.cn

Denmark/Iceland

Georg Fischer A/S
2630 Taastrup
Phone +45 (0)70 22 19 75
info.dk.ps@georgfischer.com
www.georgfischer.dk

Finland

Georg Fischer AB
01510 VANTAA
Phone +358 (0)9 586 58 25
Fax +358 (0)9 586 58 29
info.fi.ps@georgfischer.com
www.georgfischer.fi

France

Georg Fischer SAS
95932 Roissy Charles de Gaulle Cedex
Phone +33(0)1 41 84 68 84
fr.ps@georgfischer.com
www.georgfischer.fr

Germany

Georg Fischer GmbH
73095 Albershausen
Phone +49(0)7161 302-0
info.de.ps@georgfischer.com
www.georgfischer.de

India

Georg Fischer Piping Systems Ltd
400 076 Mumbai
Phone +91 224007 2001
in.ps@georgfischer.com
www.georgfischer.in

Italy

Georg Fischer S.p.A.
20063 Cernusco S/N (MI)
Phone +3902 921 861
it.ps@georgfischer.com
www.georgfischer.it

Japan

Georg Fischer Ltd
556-0011 Osaka,
Phone +81(0)6 6635 2691
jp.ps@georgfischer.com
www.georgfischer.jp

Korea

Georg Fischer Piping Systems
271-3 Seohyeon-dong Bundang-gu
Seongnam-si, Gyeonggi-do
Seoul 463-824
Phone +82 31 8017 1450
Fax +82 31 8017 1454
kor.ps@georgfischer.com
www.georgfischer.kr

Malaysia

George Fischer (M) Sdn. Bhd.
40460 Shah Alam, Selangor Darul Ehsan
Phone +60 (0)3 5122 5585
my.ps@georgfischer.com
www.georgfischer.my

Mexico/Northern Latin America

Georg Fischer S.A. de C.V.
Apodaca, Nuevo Leon
CP66636 Mexico
Phone +52 (81)1340 8586
Fax +52 (81)1522 8906
mx.ps@georgfischer.com
www.georgfischer.mx

Middle East

Georg Fischer
Piping Systems (Switzerland) Ltd.
Dubai, United Arab Emirates
Phone +971 4 289 49 60
gcc.ps@georgfischer.com
www.export.georgfischer.com

Netherlands

Georg Fischer N.V.
8161 PA Epe
Phone +31(0)578 678 222
nl.ps@georgfischer.com
www.georgfischer.nl

Norway

Georg Fischer AS
1351 Rud
Phone +47(0)67 18 29 00
no.ps@georgfischer.com
www.georgfischer.no

Poland

Georg Fischer Sp. z o.o.
05-090 Sekocin Nowy
Phone +48(0)22 31 31 0 50
poland.ps@georgfischer.com
www.georgfischer.pl

Romania

Georg Fischer
Piping Systems (Switzerland) Ltd.
020257 Bucharest - Sector 2
Phone +40(0)21 230 53 80
ro.ps@georgfischer.com
www.export.georgfischer.com

Russia

Georg Fischer
Piping Systems (Switzerland) Ltd.
Moscow 125047
Tel. +7 495 258 60 80
ru.ps@georgfischer.com
www.georgfischer.ru

Singapore

George Fischer Pte Ltd
528 872 Singapore
Phone +65(0)67 47 06 11
sgp.ps@georgfischer.com
www.georgfischer.sg

Spain/Portugal

Georg Fischer S.A.
28046 Madrid
Phone +34(0)91 781 98 90
es.ps@georgfischer.com
www.georgfischer.es

Sweden

Georg Fischer AB
117 43 Stockholm
Phone +46(0)8 506 775 00
info.se.ps@georgfischer.com
www.georgfischer.se

Switzerland

Georg Fischer
Rohrleitungssysteme (Schweiz) AG
8201 Schaffhausen
Phone +41(0)52 631 30 26
ch.ps@georgfischer.com
www.piping.georgfischer.ch

Taiwan

Georg Fischer Piping Systems
San Chung City, Taipei Hsien
Phone +886 2 8512 2822
Fax +886 2 8512 2823
www.georgfischer.tw

United Kingdom/Ireland

George Fischer Sales Limited
Coventry, CV2 2ST
Phone +44(0)2476 535 535
uk.ps@georgfischer.com
www.georgfischer.co.uk

USA/Caribbean

Georg Fischer LLC
Tustin, CA 92780-7258
Phone +1(714) 731 88 00
Toll Free 800 854 40 90
us.ps@georgfischer.com
www.gfpiping.com

Vietnam

Georg Fischer Pte Ltd
136E Tran Vu, Ba Dinh District, Hanoi
Phone +84 4 3715 3290
Fax +84 4 3715 3285

International

Georg Fischer
Piping Systems (Switzerland) Ltd.
8201 Schaffhausen/Switzerland
Phone +41(0)52 631 30 03
Fax +41(0)52 631 28 93
info.export@georgfischer.com
www.export.georgfischer.com