

GF Piping Systems

+GF+

Assured containment

HYPRO™ Polypropylene Piping System



FGS



HYPRO™

Assured production

Produced in Brazil for the conduction of effluents and chemicals

As a leading provider of solutions for the conveyance of fluids that enable safe and reliable transport and with a global presence, we offer our customers not only reliable, innovative and quality products, but also solutions tailored to their needs. In the quest to offer an increasingly complete portfolio to our customers, GF FGS launches HYPRO, a polypropylene piping system manufactured in our plants in Cajamar and Recife, with quality raw materials and that meets a wide variety of industrial applications. Thanks to its excellent chemical and mechanical resistance and weldability, the HYPRO system ensures safety, reliability, tightness and performance for at least 25 years.

HYPRO perfect for many applications

The HYPRO system is resistant to pressure, corrosion, abrasion, and high temperatures, and can be applied in various conditions of transport of industrial effluents, chemicals used in water treatment plants (WTP's) and sewage (STP's) both municipal and industrial and chemicals applied in industrial processes.



The perfect partnership

About GF Piping Systems and GF FGS

Georg Fischer is proud of its long history of success with roots going back more than 200 years when Johann Conrad Fischer laid the foundation. What began in 1802 with a small copper smelting plant and development works for new alloys, has since developed into the global industrial concern we know today. Towards the end of 19th century, the company first began by producing the long-standing malleable cast iron fittings, thereby creating the basis of today's division GF Piping Systems. Today, it is established as a leading supplier of piping systems for the safe and reliable transport of liquids and gases. Despite the constant change, customer-centric innovation and sustainability remain the defining values for GF Piping Systems.

FGS Brasil was founded in 1997 in the city of São Paulo and is a leading manufacturer of large diameter polyethylene pipes and segmented connections for the sanitation, gas, mining and general construction markets in Brazil as well as supplying gas meters, PE connections and transitions for these markets. It has two production plants, one in Cajamar, São Paulo and the other in the metropolitan region of Recife.

In December 2020 Georg Fischer acquired FGS Brasil, which will be renamed GF FGS in February 2021. This acquisition is the joining of the leading PE pipe manufacturer with the leading supplier of connections and pipe joining technologies in Brazil and reinforces GF's commitment and ambition to grow in the country. GF and FGS are strongly committed to expanding our offer of products and solutions to the entire market in all segments in which we operate.

Learn more in: www.gfps.com/br

The perfect system for your needs

End to end containment

Regardless of the installation site, overhead or underground, the HYPRO system meets the most demanding requirements in all phases of your project. The variety of our product portfolio along with our technical support services, customization and training makes us offer the best solutions for the development of high quality projects. With a comprehensive piping system solution consisting of pipes, fittings, valves, welding machines as well as automation technologies in high-quality thermoplastics, GF Piping Systems offers a system in the right measure and desired quality for the transport systems of different fluids and for many industrial applications.

Prefabrication/Customization

The focus of our prefabrication/customization teams is the development of customized parts and designs for special systems. Standardized processes guarantee the highest level of quality and fast installation.

Technical Support

Technical support such as material selection is a key factor for a successful installation. A team of experts is available to provide support nationwide.

Technical documentation

Our extensive know-how of more than 60 years is fully documented in detail in our technical manuals, planning fundamentals and application guides.

Online and mobile calculation tools

Our numerous online and mobile calculation tools are available to support you in material selection (e.g. pressure x temperature diagram and chemical resistance chart).

National R&D

With a focus on the development of the domestic market and customized solutions, our factories in Brazil have an R&D department attentive to our needs.

Chemical Resistance

In the area of chemical resistance, our ChemRes tool and our expert teams offer support and advice in selecting the right material for your needs.

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.

Training courses and on-site training

Offering a wide range of training courses we provide participants an excellent opportunity to gain confidence in working with our products and proven jointing technologies.

Long service life

With a range of premium and quality polypropylene products and systems, we supply the HYPRO system with life expectancy at least for 25 years if applied in accordance with GF Piping Systems Standards and recommendations.

Detailed information regarding the warranty can be found under:
www.gfps.com - Planning fundamentals



Containment partner



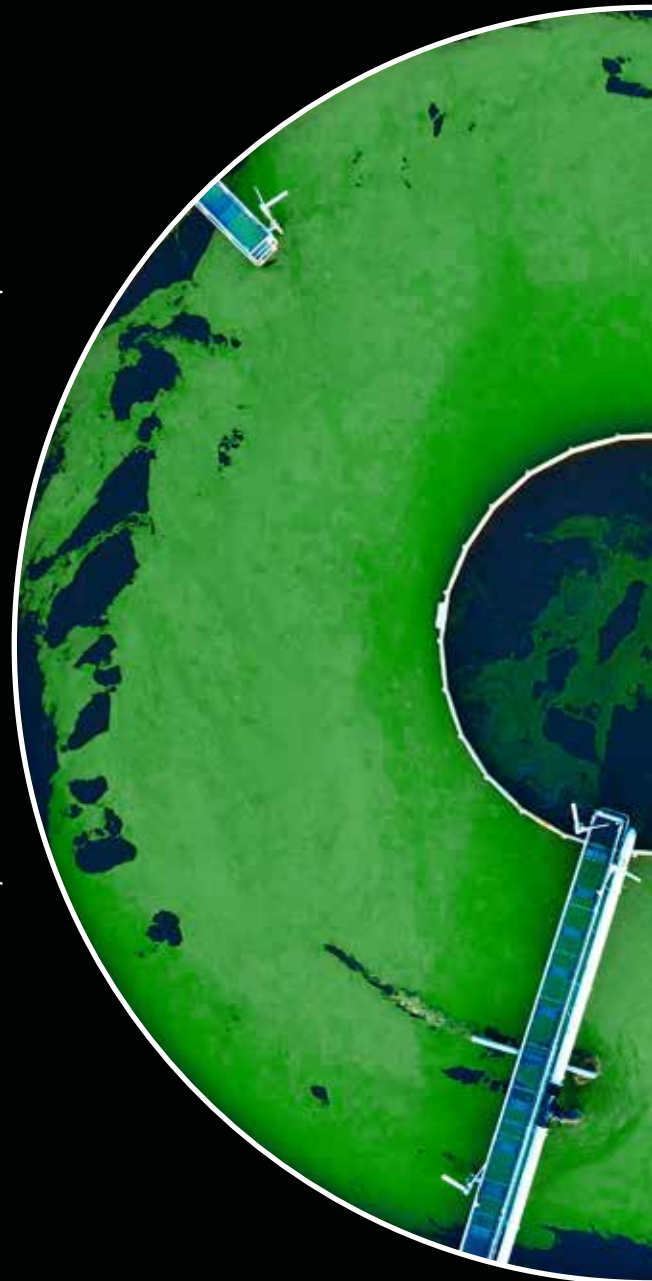
Complete polypropylene piping system

Only polypropylene manufacturer in Brazil that offers complete solution including pipe, fittings and valves. The full portfolio is available in the full range up to 500mm with injected molded fittings.

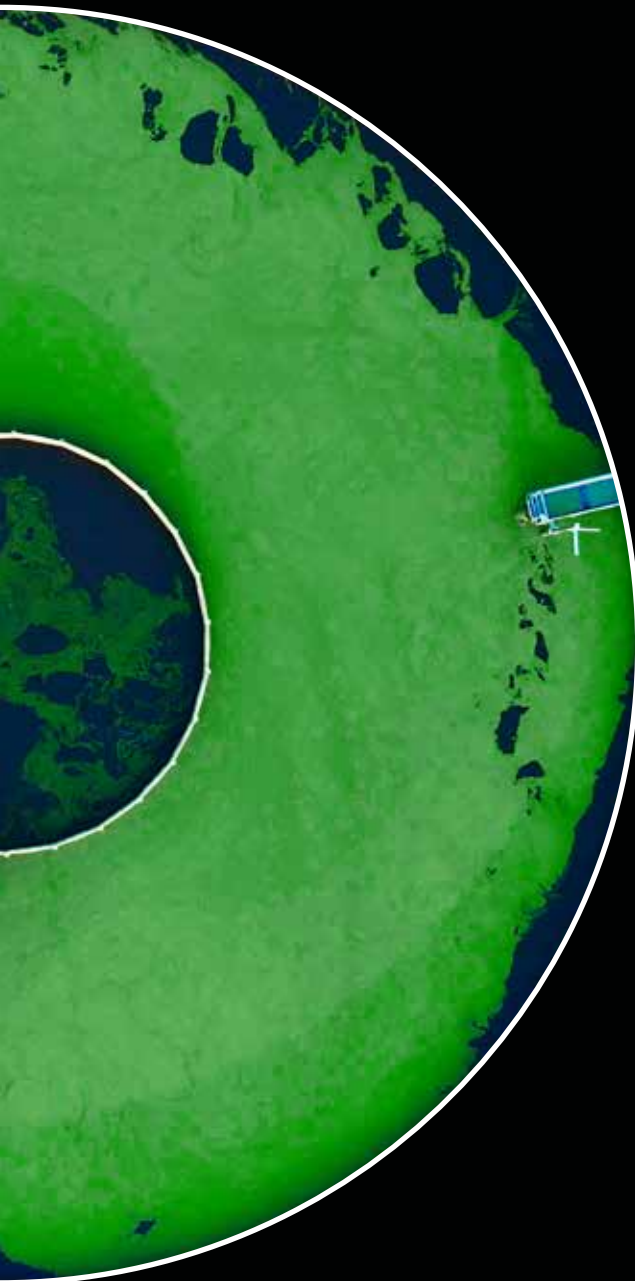


High quality in manufacturing processes and recognition

GF FGS produces in line with the international standard ISO/EN 15494 and according to the highest quality assurance protocols in the market. GF FGS has conducted all relevant long-term quality tests. The HYPRO polypropylene system has a green stripe so that you can identify that you have purchased a product of GF FGS quality.



GF Piping Systems is committed to offer the best products and solutions for our customers so that their facilities have excellence, so we invest in technology and quality raw materials for the development of our products.



.....●

Customized and fabricated solutions to the needs of the customer

GF FGS offers prefabricated, customized solutions, skids and spools with the support of our local and global teams and engineering, fully customized to the needs of our customers.



.....●

Polypropylene system with a service life at least for 25 years

The resin used in the manufacturing process of the polypropylene tubes from GF FGS gives, together with the extrusion process, a useful life of up to 25 years, which brings more safety and less maintenance for a long period.

A complete system

Assured performance

The HYPRO system guarantees high quality, tightness and performance in all applications.

With the focus always on developing solutions with high reliability and safety, GF Piping Systems has rigorous development and manufacturing processes defined and specified worldwide so that all relevant standards are regularly audited and assessed to achieve continuous improvement. Product certifications and approvals processes are part of the active and sustainable quality management system that makes us a reliable partner. Therefore, the HYPRO Line composed of pipes manufactured in Brazil and fittings and valves injected in our plants outside Brazil all conform to EN ISO 15.494, our customers can be sure that their needs will be met with a high standard of quality and performance.

PRODUCTS	SDR	PN	DN	d																							
				20	25	32	40	50	63	75	90	110	125	140	150	160	180	200	225	250	280	315	355	400	450	500	500
	11	10		[Green]																							
	17.6	6		[Green]																							
Socket fusion fittings	11	10		[Green]																							
Butt fusion fittings	11	10		[Green]																							
	17.6	6		[Green]																							
Ball valves	11	10		[Green]																							
	17.6	6		[Green]																							
Diaphragm valves	11	10		[Green]																							
	17.6	6		[Green]																							
Butterfly valves		10		[Green]																							
Check valves	11/17.6	10		[Green]																							
		6		[Green]																							
Pressure regulating valves	11	10		[Green]																							
Ventilating and bleed valve		10		[Green]																							
Automation				[Green]																							
Flanges PP-V / PP-steel				[Green]																							
Flange seals EPDM / FKM				[Green]																							
Pipe clips PP / PE				[Green]																							

Welding machines	d																				
		20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315	355	400
Socket fusion machines		[Green]																			
Butt fusion machines		[Green]																			



System specification



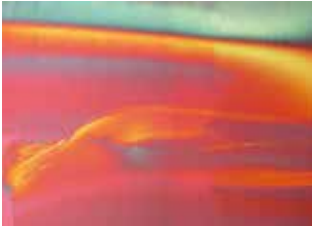


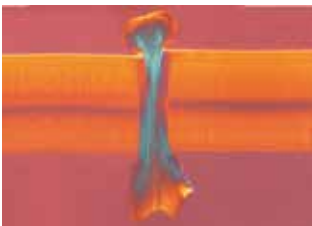


Type	Details
Material	d20-d500 Polypropylene - PP-R
Colour	RAL 7032
Density	~0.90 g / cm ³ (ISO 1183/ASTM D 792)
Thermal expansion coefficient	0.15mm / mK (DIN 53752)
Thermal conductivity	0.23W / mK (EN 12664)
Surface resistivity	> 10 ¹⁶ Ω (IEC 60093)
Dimensions	d20-d500 in accordance to EN ISO 15494
Surface condition	In accordance to EN ISO 15494
Temperature	Maximum 90°C Minimum 0°C
Pressure	PN 10 - SDR 11 PN 6 - SDR 17.6
Applications	Effluent system for industrial plants (chemical, F&B, pharmaceutical) Water and wastewater treatment plants Light aggressive chemical processes, WTP and WWTP
Joining technologies	Socket welding from OD 20mm up to 110mm Buttfusion welding from 63 to 500mm
Marking	Brand name Material External diameter Pressure class (PN) Production batch Standards

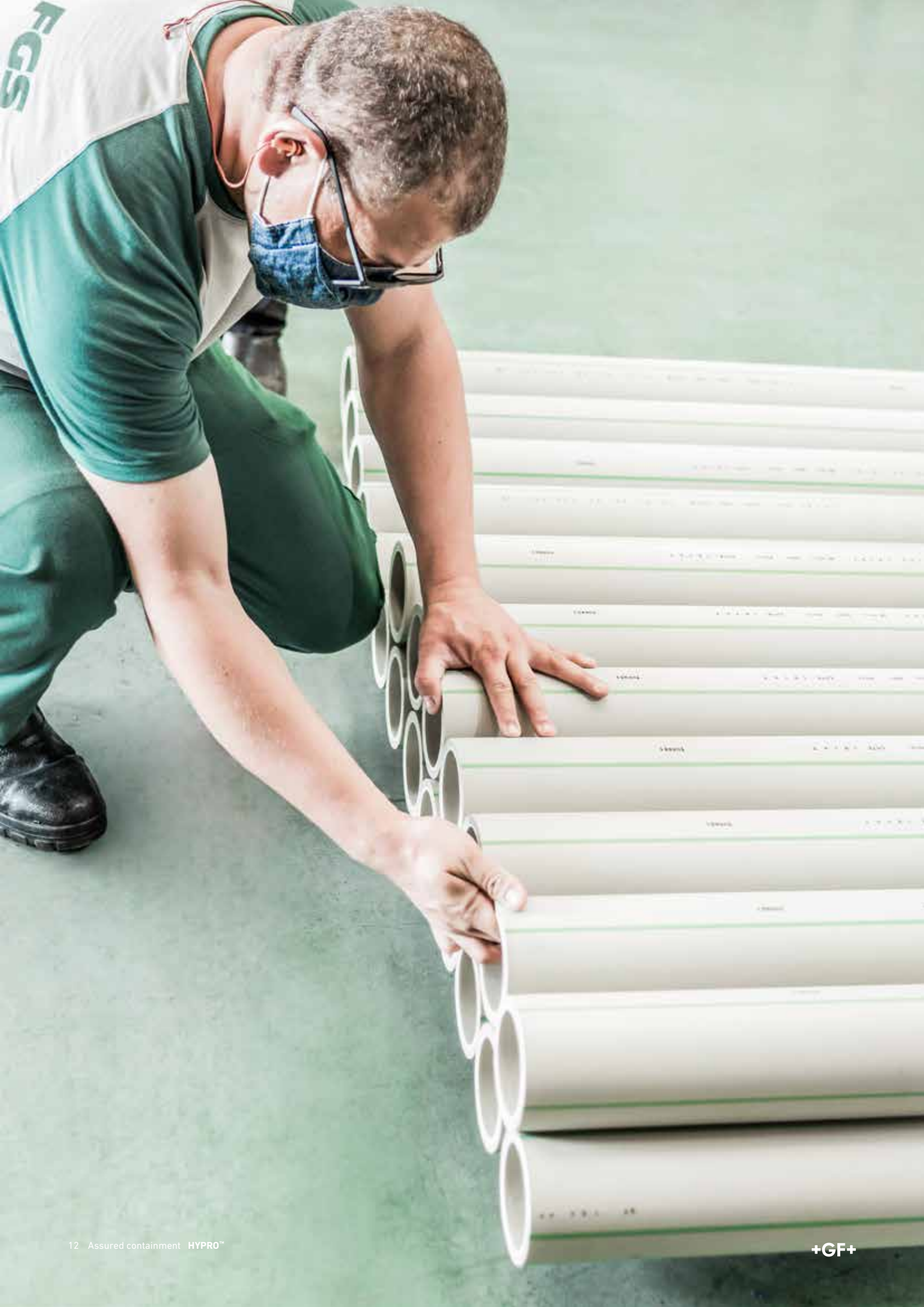
Proven technologies for your installation

A large diversity of innovative and intelligent welding solutions enriched with global training and service offerings.

As a pioneer in the field, GF Piping Systems has always been placing a high priority on developing innovative jointing techniques to fulfill specific requirements and materials in use. Simplicity in application, chemical resistance, thermal stability and long-term weld strength are the key drivers in our jointing technologies. With a global jointing training program, international machine rental and a worldwide network of service centres, including one in Brazil, our customers benefit from expert know-how and practical experience.

Welding technology	Welding machines	Joint cross-section	Macro-image
<p>Socket fusion – ideal for small diameters The fast and reliable solution to produce heavy-duty connections, in the workshop or the field.</p>			
<p>Butt fusion – the economical and efficient connection Economical and flexible fusion especially for larger diameters. From manual machines to full CNC control with traceability.</p>			

For more information about training courses from GF Piping Systems please contact our local sales companies.





Specifications

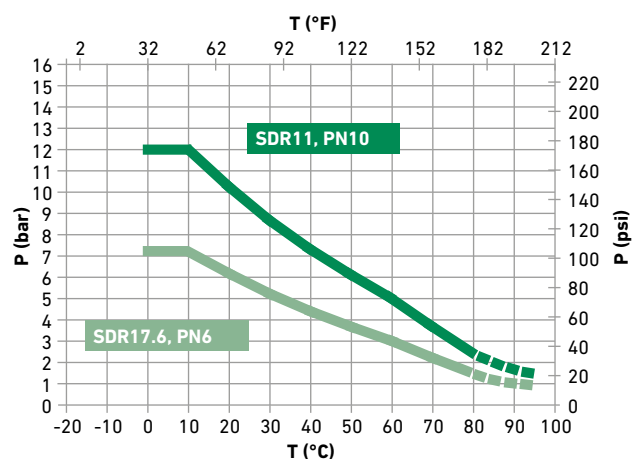
Exceeding quality standards

Technical specifications with focus on pressure-/temperature attributes.

The HYPRO polypropylene system show excellent physical properties and mechanical characteristics and presents itself as a highly versatile and universal solution. Having a high operational temperature range and ensuring outstanding chemical resistance, high abrasion resistance and very good impact resistance, meeting all requirements in effluent conveyance, chemical handling in WTP, WWTP and industrial processes.

Furthermore, properties such as low weight, low density, minimum internal stresses and an excellent smooth internal surface with high finish quality, make HYPRO systems a high standard quality standard solution.

For example, according to the temperature x pressure diagram, at 20°C a pressure of 10 bar is admitted for the SDR 11 line and 6 bar for the SDR 17.6 line.



P - Permissible pressure in bar, psi

T - Temperature in °C (Celsius), °F (Fahrenheit)

The pressure-/temperature curve based on medium water, operating temperature of 20°C, valid life time up to 25 years and the design factor C = 2.

* More information regarding technical specifications can be found online in our planning fundamentals: www.gfps.com



Chemical resistance

For your operational safety

Polypropylene (PP) - a high quality material with outstanding characteristics for a safe and efficient operation.

Chemical resistance at to 20°C

(Applications can be very dependent on the concentration)

Fluid	Chemicals	HYPRO PP
Oxidizing Acids	H ₂ SO ₄ ≤ 25%	+
Non Oxidizing Acids	HCl ≤ 10%	+
Bases	Inorganic (NaOH, KOH, etc.) Organic (amine, imidazole, etc.)	+
Salts	NaCl, FeCl ₂ , FeCl ₃ , CaCl ₂ , etc.	+

+ resistant o conditionally resistant, please consult us
 - not resistant



Please note: The above list is only intended as a guideline and does not replace an indepth review of material suitability for the particular application. The information is based on our experience and is state of the art. These data are general indicators only. In practice, however, other factors such as concentration, pressure and jointing technology must also be taken into consideration. The technical data are not binding and are not expressly warranted characteristics of the goods.

Caution: On consulting the Chemical Resistance Tool, pay attention to the colors and their indications. **When presented with a green background, its use is fully recommended, with no influence on the material's properties. For other colors, GF should be consulted before use.**

Please contact us and refer to our chart available on our website for help in selecting the correct materials.

Applications

As versatile as your applications

Leading applications enabled by safe and reliable systems adapted to fit the needs of demanding industries.

GF Piping Systems develops customized best-in-class solutions, aligned to the specific requirements of our customers in various sectors of industry, enabling profitable operation. Most notably our systems are ideally suited for the water treatment, pharmaceutical and chemical process

industry, in fields of microelectronics and energy as well as in food & beverage production. With our system knowledge and product expertise, we support our customers during the planning process, the sustainable realization of the projects and provide valuable added services. Expertise in developing and producing piping systems, combined with profound industry and market knowledge, based on longstanding experience, makes GF FGS a qualified and professional partner for our customers.

Applications in industrial effluent conduction

For the safe flow of industrial wastewater to-wastewater treatment plants, the HYPRO system combines the use of high performance with excellent material properties. This leads to a gain in safety conditions and sustainability for your project.



Applications of Highest Security in Chemical Industry

In the chemical industry, the use of HYPRO in in chemical processes strengthens the industries approach of manufacturing and conveying chemical media in the safest and at the same time most economical way.



Demanding applications in water and wastewater treatment

With the HYPRO system, application processes in water and wastewater treatment can be designed reliable and of highest efficiency. Thereby, challenges such as ensuring high water quality and achieving the expected wastewater treatment are guaranteed.



Together as one

We make Process Automation easy

GF Piping systems is your experience partner with a full portfolio of measurement, control, and actuation components, which are easy to install and use and have a local support through all project phases. We offer the full package with our products and solutions, providing top-quality installation, a highly skilled team of experts standing by our customers' side every step of the way worldwide, and digitalised services ensuring a project is at the forefront of the market.

One user experience across the whole control loop



Design (Planning phase)

Easy planning thanks to application-specific solutions making an effortless combination around the complete control loop.



Select (Ordering phase)

Easy to select and order via configurators and matching components throughout the whole portfolio.



Install (Building phase)

Easy planning thanks to application-specific solutions making an effortless combination around the complete control loop.



Own (Operation phase)

Easy monitoring once installed, including spare part availability. Long lifetime and low maintenance make for low downtimes.



Worldwide at home

Our sales companies and representatives ensure local customer support in more than 100 countries.

www.gfps.com

Argentina / Southern South America

Georg Fischer Central Plastics
Sudamérica S.R.L.
Buenos Aires / Argentina
+54 11 4512 02 90
gfcentral.ps.ar@georgfischer.com
www.gfps.com/ar

Australia

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

Austria

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

Belgium / Luxembourg

Georg Fischer NV/SA
1600 Sint-Pieters-Leeuw / Belgium
+32 (0) 2 556 40 20
be.ps@georgfischer.com
www.gfps.com/be

Brazil

Georg Fischer Sist. de Tub. Ltda.
04571-020 São Paulo/SP
+55 (0) 11 5525 1311
br.ps@georgfischer.com
www.gfps.com/br

Canada

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

China

Georg Fischer Piping Systems Ltd.
Shanghai 201319
+86 21 3899 3899
china.ps@georgfischer.com
www.gfps.com/cn

Denmark / Iceland

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

Finland

Georg Fischer AB
01510 Vantaa
+358 (0) 9 586 58 25
info.fi.ps@georgfischer.com
www.gfps.com/fi

France

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

Germany

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

India

Georg Fischer Piping Systems Pvt. Ltd.
400 083 Mumbai
+91 22 4007 2000
branchoffice@georgfischer.com
www.gfps.com/in

Indonesia

PT Georg Fischer Indonesia
Karawang 41371, Jawa Barat
+62 267 432 044
indonesia.ps@georgfischer.com
www.gfps.com/id

Italy

Georg Fischer S.p.A.
20864 Agrate Brianza (MB)
+39 02 921 86 1
it.ps@georgfischer.com
www.gfps.com/it

Japan

Georg Fischer Ltd.
530-0003 Osaka
+81 (0) 6 6341 2451
jp.ps@georgfischer.com
www.gfps.com/jp

Korea

Georg Fischer Korea Co. Ltd.
Unit 2501, U-Tower
120 Heungdeok Jungang-ro
(Yeongdeok-dong)
Giheung-gu, Yongin-si, Gyeonggi-do
+82 31 8017 1450
kor.ps@georgfischer.com
www.gfps.com/kr

Malaysia

Georg Fischer (M) Sdn. Bhd.
41200 Klang, Selangor Darul Ehsan
+60 (0) 3 3122 5585
my.ps@georgfischer.com
www.gfps.com/my

Mexico / Northern Latin America

Georg Fischer S.A. de C.V.
Ave. Industrias 110
Parque Industrial PIMSA Ote. Apodaca,
Nuevo León / Mexico. CP 66603
+52 (81) 1340 8586
mx.ps@georgfischer.com
www.gfps.com/mx

Middle East

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

Netherlands

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

New Zealand

Georg Fischer Ltd.
5018 Upper Hutt
+04 527 9813
nz.ps@georgfischer.com
www.gfps.com/nz

Norway

Georg Fischer AS
1351 Rud
+47 67 18 29 00
no.ps@georgfischer.com
www.gfps.com/no

Philippines

Georg Fischer Pte. Ltd.
Philippines Representative Office
1500 San Juan City
+632 571 2365
sgp.ps@georgfischer.com
www.gfps.com/sg

Poland

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

Romania

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

Russia

Georg Fischer Piping Systems
(Switzerland) Ltd.
Moscow 125040
+7 495 748 11 44
ru.ps@georgfischer.com
www.gfps.com/ru

Singapore

George Fischer Pte. Ltd.
528 872 Singapore
+65 6747 0611
sgp.ps@georgfischer.com
www.gfps.com/sg

Spain / Portugal

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

Sweden

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

Switzerland

Georg Fischer Rohrleitungssysteme
(Schweiz) AG
8201 Schaffhausen
+41 (0) 52 631 3026
ch.ps@georgfischer.com
www.gfps.com/ch

Taiwan

Georg Fischer Co. Ltd.
San Chung Dist., New Taipei City
+886 2 8512 2822
www.gfps.com/tw

United Kingdom / Ireland

Georg Fischer Sales Ltd.
Coventry, CV2 2ST / United Kingdom
+44 (0) 2476 535 535
uk.ps@georgfischer.com
www.gfps.com/uk

USA / Caribbean

Georg Fischer LLC
92618 Irvine, CA / USA
+1 714 731 8800
us.ps@georgfischer.com
www.gfps.com/us

Vietnam

Georg Fischer Pte Ltd.
Representative Office
Ho Chi Minh City
+84 28 3948 4000
sgp.ps@georgfischer.com
www.gfps.com/vn

International

Georg Fischer Piping Systems
(Switzerland) Ltd.
8201 Schaffhausen / Switzerland
+41 (0) 52 631 3003
info.export@georgfischer.com
www.gfps.com/int

The information and technical data (altogether "Data") herein are not binding, unless explicitly confirmed in writing. The Data neither constitutes any expressed, implied or warranted characteristics, nor guaranteed properties or a guaranteed durability. All Data is subject to modification. The General Terms and Conditions of Sale of Georg Fischer Piping Systems apply.