

**PE Systems** 

# Building the lifelines of the world

**Utility and Industry** 



Who we are

# **Connections for life**

GF Piping Systems is the leading flow solutions provider across the world. We enable the safe and sustainable transport of fluids. Our business is driven by maintaining industry-leading sustainability levels, innovating through digitally enabled solutions, and investing in a culture built on caring, learning, and performance.

## Your partner for modern plastic piping systems

The plastic piping systems from GF Piping Systems are non-corrosive and do not need replacing throughout the system's entire service life. Therefore, they contribute to the increased reliability of the system while lowering maintenance costs and staff requirements. They are excellently suited for applications involving potable and sewage water, coolants, acids, leaches, and other chemicals, as well as abrasive compounds.

GF Piping Systems, founded more than 200 years ago in Switzerland, supports its customers both in the initial switch from metal to plastic and in retrofits – across all project phases. They benefit from more than 60 years of experience in plastic systems and application knowledge from 100 countries. 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 the design phase all the way through to installation and maintenance.

## Strong regional footprint

GF Piping Systems has been present in the Southeast Asian market since 1994, when the first office in the region was registered in Singapore. Today, with seven offices in five countries, production facilities in Malaysia and Indonesia and numerous regional partners across Southeast Asia, GF Piping Systems is committed to the region and ensures competent customer support and technical on-site training.





- Sales / Representative office
- Production facility
- **O** Distributors

Introduction

# We bring you clean water



Supplying the world with clean water is one of the major challenges of the 21st century. GF Piping Systems rises to this challenge by providing high quality piping systems. We develop and produce pipes, fittings, valves, flow measurement devices and fusion machines. These application-oriented system solutions allow transporting water, gas and industrial liquids safely and reliably. Whether in industry, utilities or building technology - GF Piping Systems has the right solution for you.

#### Innovation and technology

GF Piping Systems, through focussed research, is continually developing new products and technologies, setting new global standards in quality and performance for our customers.

#### All from one source

GF Piping Systems covers the growing demand for complete solutions from a single source in a wide range of applications.

#### **Quality management**

All system components are stringently tested in accredited test laboratories. Management and production procedures are certified to ISO 9001 and ISO 14001 to guarantee form, fit, function and compliance in whatever application they may be used throughout the world.

#### Sales and service — worldwide

Our local sales companies and representatives in over 100 countries provide one stop" shopping, including planning support, training and product availability.

#### Facts and figures

In 2021, GF Piping Systems with its 7'700 employees, 36 production sites and 31 sales companies achieved an annual turnover of 1.97 billion CHF respectively 2 billion USD. GF Piping Systems is part of the Georg Fischer Corporation.

# **Pioneering towards a** green solutions

#### In focus: Plastics and metal

Climate change, the finiteness of fossil fuels and a rapidly rising demand for energy are among the challenges we face in the future.

For companies it will become even more important to offer products and solutions which match these challenges. For example, piping systems made of plastic cause less carbon dioxide emissions than metal piping systems. We offer complete plastic systems for nearly every application, whether in building technology, water treatment, cooling or other segments. Our plastic piping systems are leak proof, corrosion-resistant, lightweight and long-lived.



#### The added value of our solutions: plastics are greener" than metals

Plastic piping systems of Georg Fischer offered applications and dimensions almost ever have better results than competitive materials. In the case of PP-R the carbon dioxide emissions are roughly five times lower than those of a comparable steel pipe. This is the result of an study that focused on the ecological footprint of various piping materials.

#### **Our devotion**

The environment and nature form the foundation of our lives. For that reason, Georg Fischer considers the consumption of energy and resources as well as the production of air emissions to be major challenges for an industry devoted to people.



Overview

# **PE Systems**

#### GF Polyethylene Pipes & Fittings is a high durability PE100

Polyethylene piping system and suitably used for conveying all types of liquids, slurries and gases. Some of the common applications include, main water supply, potable water pipelines, effluent transportation, and irrigation. Polyethylene is the preferred material for use in trenchless pipelines which are installed by directional drilling, slip lining and pipe bursting methods.

GF Polyethylene Pipe & Fittings preferred jointing method is heat fusion, Therefore Butt Fusion, Electrofusion and mechanical Joint is required. Polyethylene cannot be joined with adhesives or solvents. PE has many advantage over alternatives such as metal and rigid pipe materials, the more obvious ones being:



#### Long life

PE pipes are inert and hence, non-aging when operated within their design criteria. PE pipes have been installed for many years and have minimum life expectancy of more than 25 years when used in accordance with the relevant Standards.



#### Weather resistance

UV Protective additives such as carbon black as specified in AS/NZS 4130 and hindered amine light stabilisers (HALS) are added to minimise degradation. The use of carbon black as an added UV stabiliser greatly assists prolonging the life of pipe exposed to Ultra Violet Light; therefore black pipes dominate general use in above ground applications. Pipes of colour other than black should be protected from direct sunlight during storage, particularly if they are to be stored for more than 2 years.



#### Abrasion resistance

PE offers good resistance to abrasion and erosion form aggresive slurries which can rapidly damage steel or other traditional pipe materials.



#### **Chemical resistance**

PE is unaffected by both internal and external chemical attack by a wide range of acids, alkalis, ground water salts and other environmental factors.



#### **Environmentally compatible**

PE is an environmentally compatible hydrocarbon. Impact strength PE has excellent impact resistance which unlike many other polymers is retained at sub-zero temperatures.



#### Non toxic/Taint free

The formulation of GF PE contains no harmful metallic stabilizers, and it has been widely used for many years in piping systems for high water purity, medical preparations, food products and soft drinks. PE systems are ideal for portable cold water. They conform to World Health Organization and E.E.C requirements for portable water reticulation and distribution.



#### Exceptionally smooth bore

PE does not suffer from increased surfaces roughness or internal corrosion and provides a smooth bore for the life of piping system, internal corrosion also causes a reduced bore in steel systems which further inhabit flow. The smooth bore also inhabits the formation of scale.



#### Flexibility

In contrast to traditional piping materials, PE pipes are relatively flexible. This inherent flexibility can be used to time and labour saving advantage in handling and installation, particularly in designing underground piping layouts. Importantly also, PE pipes are not susceptible to shear breaks that can occur in rigid conduits such as cast iron and uPVC.



#### Long pipe lengths

means fewer pipe joins.

#### The Material Polyethylene (PE) Reference Values

|   | PE 100      |                   |                  |
|---|-------------|-------------------|------------------|
| Characteristics                         | Value *)    | Units             | Test Standard    |
| Density                                 | 0.95        | g/cm <sup>3</sup> | EN ISO 1183-1    |
| Yield stress at 23°C                    | 25          | N/mm <sup>2</sup> | EN ISO 527-1     |
| Tensile e-modulus at 23°C               | 900         | N/mm <sup>2</sup> | EN ISO 527-1     |
| Charpy notched impact strength at 23°C  | 83          | kJ/m²             | EN ISO 179-1/1eA |
| Charpy notched impact strength at -40°C | 13          | kJ/m²             | EN ISO 179-1/1eA |
| Ball indentation hardness (132N)        | 37          | MPa               | EN ISO 2039-1    |
| Crystallite melting point               | 130         | °C                | DIN 51007        |
| Heat conductivity at 23°C               | 0.38        | W/m K             | EN 12664         |
| Water absorption at 23°C                | 0.01 - 0.04 | %                 | EN ISO 62        |
| Colour                                  | 9005        | -                 | RAL              |
| Limiting oxygen index (LOI)             | 17.4        | %                 | ISO 4589-1       |

#### **SDR/PN Conversions for PE100**

| SDR          | 41    | 33 | 26    | 21    | 17     | 13.6     | 11     | 9      | 7.4    |
|--------------|-------|----|-------|-------|--------|----------|--------|--------|--------|
| PN for PE100 | 4 Bar | -  | 6 Bar | 8 Bar | 10 Bar | 12.5 Bar | 16 Bar | 20 Bar | 25 Bar |

Depending on the size of the pipe diameter, PE pipes can be supplied in long coil lengths, this

# **Building the lifelines of the world**

GF Piping Systems offers the safe and reliable solutions for the transportation of water, chemicals, and gas. The maintenance-free and long-lived piping systems made of plastics help implement vital applications faster, more cost-effectively and more sustainably. GF Piping Systems supports its customers throughout all phases of their projects from planning to commissioning.

## PE systems

# **Convincing welding** technologies

## A diverse range 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 centers, our customers benefit from expert know-how and practical experience.

#### Welding technology

#### Socket fusion the strong connection

The strong, fast and easy solution to produce heavy-duty connections, in the workshop or the field.



#### Butt fusion the economical connection

Economical and flexible fusion especially for bigger diameters. From manual machines to full CNC control with traceability.

#### IR-Plus (Infrared) fusion the fast, clean connection

Fast, repeatable and clean welds via non-contact heating. Full traceability of the welding process, with user guidance.



#### Electrofusion the easy connection

State-of-the-art semi-automatic technology, combined with a low weight, make the MSA-Plus machines perfect for on-site fusion.



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



# **PE Systems**



| Product Name                               | Page |
|--|------|
| Pipe PE100 SDR26 PN6.3                     | 11   |
| Pipe PE100 SDR21 PN8                       | 11   |
| Pipe PE100 SDR17 PN10                      | 12   |
| Pipe PE100 SDR13.6 PN12.5                  | 13   |
| Pipe PE100 SDR11 PN16                      | 14   |
| Pipe PE100 SDR9 PN20                       | 15   |
| Pipe PE100 SDR7.4 PN25                     | 15   |
| Transition Fittings PE/Brass Male Thread   | 16   |
| Transition Fittings PE/Brass Female Thread | 16   |

# +GF+

## Pipes

#### Pipe PE100 SDR26 PN6.3

#### Model:

- Material: PE100

- Colour: black
- er

| d    | PN    | Code        | Weight | е    | L    |
|------|-------|-------------|--------|------|------|
| (mm) | (bar) |             | (kg∕m) | (mm) | (mm) |
| 160  | 6.3   | 300 202 040 | 3.064  | 6.2  | 5.8  |
| 180  | 6.3   | 300 202 041 | 3.815  | 6.9  | 5.8  |
| 200  | 6.3   | 300 202 042 | 4.759  | 7.7  | 5.8  |
| 225  | 6.3   | 300 202 043 | 5.947  | 8.6  | 5.8  |
| 250  | 6.3   | 300 202 044 | 7.400  | 9.6  | 5.8  |
| 160  | 6.3   | 300 202 001 | 3.064  | 6.2  | 11.6 |
| 180  | 6.3   | 300 202 002 | 3.815  | 6.9  | 11.6 |
| 200  | 6.3   | 300 202 003 | 4.759  | 7.7  | 11.6 |
| 225  | 6.3   | 300 202 004 | 5.947  | 8.6  | 11.6 |
| 250  | 6.3   | 300 202 005 | 7.400  | 9.6  | 11.6 |

#### Pipe PE100 SDR21 PN8

#### Model:

- Material: PE100

- Colour: black
- er

|  | 399M   |  |
|--|--------|--|
|  | $\geq$ |  |
|  |        |  |











10 PE Systems | Building the lifelines of the world

## Black High Density Bimodal PE100 Polyethylene Accordance to ISO 4427, EN 12201, MS 1058

• Other length requirement shall be specified by agreement between manufacturer and purchas-

Black High Density Bimodal PE100 Polyethylene
Accordance to ISO 4427, EN 12201, MS 1058

• Other length requirement shall be specified by agreement between manufacturer and purchas-

| ht | е    | L    |
|----|------|------|
| m) | (mm) | (mm) |
| 47 | 7.7  | 5.8  |
| 06 | 8.6  | 5.8  |
| 33 | 9.6  | 5.8  |
| 71 | 10.8 | 5.8  |
| 50 | 11.9 | 5.8  |
| 47 | 7.7  | 11.6 |
| 06 | 8.6  | 11.6 |
| 33 | 9.6  | 11.6 |
| 71 | 10.8 | 11.6 |
| 50 | 11.9 | 11.6 |
|    |      |      |









#### Pipe PE100 SDR17 PN10

#### Model:

- Material: PE100
  Black High Density Bimodal PE100 Polyethylene
  Certified to ISO 4427, EN 12201, MS 1058
- Colour: black
- Available length: 5.8m, 6m, 11.6m, 12m, 100m

| d    | PN    | Code        | Weight | е    | L     |
|------|-------|-------------|--------|------|-------|
| (mm) | (bar) |             | (kg/m) | (mm) | (mm)  |
| 32   | 10    | 300 202 443 | 0.199  | 2.0  | 5.8   |
| 40   | 10    | 300 202 444 | 0.295  | 2.4  | 5.8   |
| 50   | 10    | 300 202 445 | 0.454  | 3.0  | 5.8   |
| 63   | 10    | 300 202 446 | 0.731  | 3.8  | 5.8   |
| 75   | 10    | 300 202 447 | 1.020  | 4.5  | 5.8   |
| 90   | 10    | 300 202 448 | 1.467  | 5.4  | 5.8   |
| 110  | 10    | 300 202 491 | 2.180  | 6.6  | 5.8   |
| 125  | 10    | 300 202 497 | 2.780  | 7.4  | 5.8   |
| 140  | 10    | 300 202 449 | 3.495  | 8.3  | 5.8   |
| 160  | 10    | 300 202 450 | 4.562  | 9.5  | 5.8   |
| 180  | 10    | 300 202 451 | 5.769  | 10.7 | 5.8   |
| 200  | 10    | 300 202 452 | 7.121  | 11.9 | 5.8   |
| 225  | 10    | 300 202 453 | 9.058  | 13.4 | 5.8   |
| 250  | 10    | 300 202 454 | 10.536 | 14.8 | 5.8   |
| 32   | 10    | 300 202 259 | 0.199  | 2.0  | 6.0   |
| 40   | 10    | 300 202 227 | 0.295  | 2.4  | 6.0   |
| 50   | 10    | 300 202 228 | 0.454  | 3.0  | 6.0   |
| 63   | 10    | 300 202 197 | 0.731  | 3.8  | 6.0   |
| 75   | 10    | 300 202 198 | 1.020  | 4.5  | 6.0   |
| 90   | 10    | 300 202 199 | 1.467  | 5.4  | 6.0   |
| 110  | 10    | 300 202 091 | 2.180  | 6.6  | 6.0   |
| 125  | 10    | 300 202 097 | 2.780  | 7.4  | 6.0   |
| 140  | 10    | 300 202 224 | 3.495  | 8.3  | 6.0   |
| 160  | 10    | 300 202 050 | 4.562  | 9.5  | 6.0   |
| 180  | 10    | 300 202 051 | 5.769  | 10.7 | 6.0   |
| 200  | 10    | 300 202 052 | 7.121  | 11.9 | 6.0   |
| 225  | 10    | 300 202 053 | 9.058  | 13.4 | 6.0   |
| 250  | 10    | 300 202 054 | 10.536 | 14.8 | 6.0   |
| 90   | 10    | 300 202 409 | 1.467  | 5.4  | 11.6  |
| 110  | 10    | 300 202 488 | 2.180  | 6.6  | 11.6  |
| 125  | 10    | 300 202 494 | 2.780  | 7.4  | 11.6  |
| 140  | 10    | 300 202 410 | 3.495  | 8.3  | 11.6  |
| 160  | 10    | 300 202 411 | 4.562  | 9.5  | 11.6  |
| 180  | 10    | 300 202 412 | 5.769  | 10.7 | 11.6  |
| 200  | 10    | 300 202 413 | 7.121  | 11.9 | 11.6  |
| 225  | 10    | 300 202 414 | 9.058  | 13.4 | 11.6  |
| 250  | 10    | 300 202 415 | 10.536 | 14.8 | 11.6  |
| 90   | 10    | 300 202 229 | 1.467  | 5.4  | 12.0  |
| 110  | 10    | 300 202 088 | 2.180  | 6.6  | 12.0  |
| 125  | 10    | 300 202 094 | 2.780  | 7.4  | 12.0  |
| 140  | 10    | 300 202 230 | 3.495  | 8.3  | 12.0  |
| 160  | 10    | 300 202 011 | 4.562  | 9.5  | 12.0  |
| 180  | 10    | 300 202 012 | 5.769  | 10.7 | 12.0  |
| 200  | 10    | 300 202 013 | 7.121  | 11.9 | 12.0  |
| 225  | 10    | 300 202 014 | 9.058  | 13.4 | 12.0  |
| 250  | 10    | 300 202 015 | 10.536 | 14.8 | 12.0  |
| 32   | 10    | 300 202 611 | 0.199  | 2.0  | 100.0 |
| 40   | 10    | 300 202 613 | 0.295  | 2.4  | 100.0 |
| 50   | 10    | 300 202 612 | 0.454  | 3.0  | 100.0 |
| 63   | 10    | 300 202 614 | 0.731  | 3.8  | 100.0 |





Pipe PE100 SDR13.6 PN12.5

Model:

| <b>d</b><br>(mm) | PN<br>(bar) | Code        | Weight | <b>e</b><br>(mm) | <b>L</b><br>(mm) |
|------------------|-------------|-------------|--------|------------------|------------------|
| 25               | 12.5        | 300 202 434 | 0.153  | 2.0              | 5.8              |
| 32               | 12.5        | 300 202 435 | 0.232  | 2.4              | 5.8              |
| 40               | 12.5        | 300 202 436 | 0.368  | 3.0              | 5.8              |
| 50               | 12.5        | 300 202 437 | 0.558  | 3.7              | 5.8              |
| 63               | 12.5        | 300 202 438 | 0.878  | 4.7              | 5.8              |
| 75               | 12.5        | 300 202 439 | 1.254  | 5.6              | 5.8              |
| 90               | 12.5        | 300 202 440 | 1.780  | 6.7              | 5.8              |
| 110              | 12.5        | 300 202 492 | 2.640  | 8.1              | 5.8              |
| 125              | 12.5        | 300 202 498 | 3.417  | 9.2              | 5.8              |
| 140              | 12.5        | 300 202 441 | 4.260  | 10.3             | 5.8              |
| 160              | 12.5        | 300 202 455 | 5.561  | 11.8             | 5.8              |
| 180              | 12.5        | 300 202 456 | 7.079  | 13.3             | 5.8              |
| 200              | 12.5        | 300 202 457 | 8.653  | 14.7             | 5.8              |
| 225              | 12.5        | 300 202 458 | 10.993 | 16.6             | 5.8              |
| 250              | 12.5        | 300 202 459 | 13.537 | 18.4             | 5.8              |
| 25               | 12.5        | 300 202 100 | 0.153  | 2.0              | 6.0              |
| 32               | 12.5        | 300 202 101 | 0.232  | 2.4              | 6.0              |
| 40               | 12.5        | 300 202 102 | 0.202  | 3.0              | 6.0              |
| 50               | 12.5        | 300 202 102 | 0.558  | 3.7              | 6.0              |
| 63               | 12.5        | 300 202 104 | 0.878  | 4.7              | 6.0              |
| 75               | 12.5        | 300 202 105 | 1 254  | 5.6              | 6.0              |
| 90               | 12.5        | 300 202 106 | 1 780  | 6.7              | 6.0              |
| 110              | 12.5        | 300 202 107 | 2.640  | 8.1              | 6.0              |
| 125              | 12.5        | 300 202 108 | 3 417  | 9.2              | 6.0              |
| 140              | 12.5        | 300 202 225 | 4 260  | 10.3             | 6.0              |
| 140              | 12.5        | 300 202 055 | 5.561  | 11.8             | 6.0              |
| 180              | 12.5        | 300 202 056 | 7 079  | 13.3             | 6.0              |
| 200              | 12.5        | 300 202 057 | 8 653  | 14.7             | 6.0              |
| 225              | 12.5        | 300 202 058 | 10 993 | 16.6             | 6.0              |
| 250              | 12.5        | 300 202 059 | 13.537 | 18.4             | 6.0              |
| 90               | 12.5        | 300 202 486 | 1.780  | 6.7              | 11.6             |
| 110              | 12.5        | 300 202 489 | 2.640  | 8.1              | 11.6             |
| 125              | 12.5        | 300 202 495 | 3.417  | 9.2              | 11.6             |
| 140              | 12.5        | 300 202 487 | 4.260  | 10.3             | 11.6             |
| 160              | 12.5        | 300 202 416 | 5.561  | 11.8             | 11.6             |
| 180              | 12.5        | 300 202 417 | 7.079  | 13.3             | 11.6             |
| 200              | 12.5        | 300 202 418 | 8.653  | 14.7             | 11.6             |
| 225              | 12.5        | 300 202 419 | 10.993 | 16.6             | 11.6             |
| 250              | 12.5        | 300 202 420 | 13.537 | 18.4             | 11.6             |
| 90               | 12.5        | 300 202 110 | 1.780  | 6.7              | 12.0             |
| 110              | 12.5        | 300 202 089 | 2.640  | 8.1              | 12.0             |
| 125              | 12.5        | 300 202 095 | 3.417  | 9.2              | 12.0             |
| 140              | 12.5        | 300 202 256 | 4.260  | 10.3             | 12.0             |
| 160              | 12.5        | 300 202 016 | 5.561  | 11.8             | 12.0             |
| 180              | 12.5        | 300 202 017 | 7.079  | 13.3             | 12.0             |
| 200              | 12.5        | 300 202 018 | 8.653  | 14.7             | 12.0             |
| 225              | 12.5        | 300 202 019 | 10.993 | 16.6             | 12.0             |
| 250              | 12.5        | 300 202 020 | 13.537 | 18.4             | 12.0             |
| 25               | 12.5        | 300 202 601 | 0.153  | 2.0              | 100.0            |
| 32               | 12.5        | 300 202 602 | 0.232  | 2.4              | 100.0            |
| 40               | 12.5        | 300 202 603 | 0.368  | 3.0              | 100.0            |
| 50               | 12.5        | 300 202 604 | 0.558  | 3.7              | 100.0            |
| 63               | 12.5        | 300 202 605 | 0.878  | 4.7              | 100.0            |
|                  |             |             |        |                  |                  |

# Material: PE100 Black High Density Bimodal PE100 Polyethylene Certified to ISO 4427, EN 12201, MS 1058 Colour: black Available length: 5.8m, 6m, 11.6m, 12m, 100m









#### Pipe PE100 SDR11 PN16

#### Model:

- Material: PE100
- Black High Density Bimodal PE100 Polyethylene
  Certified to ISO 4427, EN 12201, MS 1058
- Colour: black
- Available length: 5.8m, 6m, 11.6m, 12m, 100m

| d    | PN    | Code        | Weight | е    | L     |
|------|-------|-------------|--------|------|-------|
| (mm) | (bar) |             | (kg∕m) | (mm) | (mm)  |
| 20   | 16    | 300 202 426 | 0.120  | 2.0  | 5.8   |
| 25   | 16    | 300 202 427 | 0.171  | 2.3  | 5.8   |
| 32   | 16    | 300 202 428 | 0.280  | 3.0  | 5.8   |
| 40   | 16    | 300 202 429 | 0.437  | 3.7  | 5.8   |
| 50   | 16    | 300 202 430 | 0.670  | 4.6  | 5.8   |
| 63   | 16    | 300 202 431 | 1.066  | 5.8  | 5.8   |
| 75   | 16    | 300 202 432 | 1.478  | 6.8  | 5.8   |
| 90   | 16    | 300 202 433 | 2.142  | 8.2  | 5.8   |
| 110  | 16    | 300 202 493 | 3.189  | 10.0 | 5.8   |
| 125  | 16    | 300 202 499 | 4.135  | 11.4 | 5.8   |
| 140  | 16    | 300 202 465 | 5.137  | 12.7 | 5.8   |
| 160  | 16    | 300 202 460 | 6.740  | 14.6 | 5.8   |
| 180  | 16    | 300 202 461 | 8.518  | 16.4 | 5.8   |
| 200  | 16    | 300 202 462 | 10.505 | 18.2 | 5.8   |
| 225  | 16    | 300 202 463 | 13.296 | 20.5 | 5.8   |
| 250  | 16    | 300 202 464 | 16.352 | 22.7 | 5.8   |
| 20   | 16    | 300 202 115 | 0.120  | 2.0  | 6.0   |
| 25   | 16    | 300 202 116 | 0.171  | 2.3  | 6.0   |
| 32   | 16    | 300 202 117 | 0.280  | 3.0  | 6.0   |
| 40   | 16    | 300 202 118 | 0.437  | 3.7  | 6.0   |
| 50   | 16    | 300 202 119 | 0.670  | 4.6  | 6.0   |
| 63   | 16    | 300 202 120 | 1.066  | 5.8  | 6.0   |
| 75   | 16    | 300 202 121 | 1.478  | 6.8  | 6.0   |
| 90   | 16    | 300 202 122 | 2.142  | 8.2  | 6.0   |
| 110  | 16    | 300 202 123 | 3.189  | 10.0 | 6.0   |
| 125  | 16    | 300 202 124 | 4.135  | 11.4 | 6.0   |
| 140  | 16    | 300 202 226 | 5.137  | 12.7 | 6.0   |
| 160  | 16    | 300 202 060 | 6.740  | 14.6 | 6.0   |
| 180  | 16    | 300 202 061 | 8.518  | 16.4 | 6.0   |
| 200  | 16    | 300 202 062 | 10.505 | 18.2 | 6.0   |
| 225  | 16    | 300 202 063 | 13.296 | 20.5 | 6.0   |
| 250  | 16    | 300 202 064 | 16.352 | 22.7 | 6.0   |
| 90   | 16    | 300 202 484 | 2.142  | 8.2  | 11.6  |
| 110  | 16    | 300 202 490 | 3.189  | 10.0 | 11.6  |
| 125  | 16    | 300 202 496 | 4.135  | 11.4 | 11.6  |
| 140  | 16    | 300 202 485 | 5.137  | 12.7 | 11.6  |
| 160  | 16    | 300 202 421 | 6.740  | 14.6 | 11.6  |
| 180  | 16    | 300 202 422 | 8.518  | 16.4 | 11.6  |
| 200  | 16    | 300 202 423 | 10.505 | 18.2 | 11.6  |
| 225  | 16    | 300 202 424 | 13.296 | 20.5 | 11.6  |
| 250  | 16    | 300 202 425 | 16.352 | 22.7 | 11.6  |
| 63   | 16    | 300 202 113 | 1.066  | 5.8  | 12.0  |
| 75   | 16    | 300 202 257 | 1.478  | 6.8  | 12.0  |
| 90   | 16    | 300 202 258 | 2.142  | 8.2  | 12.0  |
| 110  | 16    | 300 202 090 | 3.189  | 10.0 | 12.0  |
| 125  | 16    | 300 202 096 | 4.135  | 11.4 | 12.0  |
| 140  | 16    | 300 202 260 | 5.137  | 12.7 | 12.0  |
| 160  | 16    | 300 202 021 | 6.740  | 14.6 | 12.0  |
| 180  | 16    | 300 202 022 | 8.518  | 16.4 | 12.0  |
| 200  | 16    | 300 202 023 | 10.505 | 18.2 | 12.0  |
| 225  | 16    | 300 202 024 | 13.296 | 20.5 | 12.0  |
| 250  | 16    | 300 202 025 | 16.352 | 22.7 | 12.0  |
| 20   | 16    | 300 202 600 | 0.120  | 2.0  | 100.0 |
|      |       |             |        |      |       |

table continued on the next page





#### Pipe PE100 SDR9 PN20





- Material: PE100

- er

| ode W        | C       | PN    | d    |  |
|--------------|---------|-------|------|--|
|              |         | (bar) | (mm) |  |
| 065          | 300 202 | 20    | 160  |  |
| <b>066</b> 1 | 300 202 | 20    | 180  |  |
| <b>067</b> 1 | 300 202 | 20    | 200  |  |
| <b>068</b> 1 | 300 202 | 20    | 225  |  |
| <b>069</b> 1 | 300 202 | 20    | 250  |  |
| 026          | 300 202 | 20    | 160  |  |
| <b>027</b> 1 | 300 202 | 20    | 180  |  |
| 028 1        | 300 202 | 20    | 200  |  |
| <b>029</b> 1 | 300 202 | 20    | 225  |  |

#### Pipe PE100 SDR7.4 PN25

#### Model:

- Colour: black
- er

| <b>d</b><br>(mm) | <b>PN</b><br>(bar) | Code        | Weight<br>(kg/m) | <b>e</b><br>(mm) | <b>L</b><br>(mm) |
|------------------|--------------------|-------------|------------------|------------------|------------------|
| 160              | 25                 | 300 202 070 | 9.559            | 21.9             | 5.8              |
| 180              | 25                 | 300 202 071 | 12.081           | 24.6             | 5.8              |
| 200              | 25                 | 300 202 072 | 14.950           | 27.4             | 5.8              |
| 225              | 25                 | 300 202 073 | 18.897           | 30.8             | 5.8              |
| 250              | 25                 | 300 202 074 | 23.326           | 34.2             | 5.8              |
| 160              | 25                 | 300 202 031 | 9.559            | 21.9             | 11.6             |
| 180              | 25                 | 300 202 032 | 12.081           | 24.6             | 11.6             |
| 200              | 25                 | 300 202 033 | 14.950           | 27.4             | 11.6             |
| 225              | 25                 | 300 202 034 | 18.897           | 30.8             | 11.6             |
| 250              | 25                 | 300 202 035 | 23.326           | 34.2             | 11.6             |



| $\square$ | $\langle$ |
|-----------|-----------|
| /         |           |

| jht | е    | L     |
|-----|------|-------|
| ′m) | (mm) | (mm)  |
| 80  | 3.0  | 100.0 |
| 37  | 3.7  | 100.0 |
| 70  | 4.6  | 100.0 |
| 66  | 5.8  | 100.0 |

Black High Density Bimodal PE100 Polyethylene
Accordance to ISO 4427, EN 12201, MS 1058
Colour: black

• Other length requirement shall be specified by agreement between manufacturer and purchas-

| d    | PN    | Code        | Weight | е    | L    |
|------|-------|-------------|--------|------|------|
| (mm) | (bar) |             | (kg∕m) | (mm) | (mm) |
| 160  | 20    | 300 202 065 | 8.072  | 17.9 | 5.8  |
| 180  | 20    | 300 202 066 | 10.190 | 20.1 | 5.8  |
| 200  | 20    | 300 202 067 | 12.603 | 22.4 | 5.8  |
| 225  | 20    | 300 202 068 | 15.953 | 25.2 | 5.8  |
| 250  | 20    | 300 202 069 | 19.627 | 27.9 | 5.8  |
| 160  | 20    | 300 202 026 | 8.072  | 17.9 | 11.6 |
| 180  | 20    | 300 202 027 | 10.190 | 20.1 | 11.6 |
| 200  | 20    | 300 202 028 | 12.603 | 22.4 | 11.6 |
| 225  | 20    | 300 202 029 | 15.953 | 25.2 | 11.6 |
| 250  | 20    | 300 202 030 | 19.627 | 27.9 | 11.6 |

# Material: PE100 Black High Density Bimodal PE100 Polyethylene Accordance to ISO 4427, EN 12201, MS 1058

• Other length requirement shall be specified by agreement between manufacturer and purchas-



## **Transition Fittings**





| Transition Fittings | PE/Brass |
|---------------------|----------|
| Male Thread         |          |

#### Model:

- Polyethylene PE100 Black SDR11 / Brass (ISO S5)
  Stainless Steel Ring 304
- British Standard Pipe Taper (BSPT) Threads: Brass Male Threaded
- Standard/ Conformance: MS 1058, ISO 4427, EN 12201
- Welding Technology: Electrofusion/ Butt fusion
- Pressure Rating: PN 16 Water

| <b>d</b><br>(mm) | <b>R</b><br>(inch) | Code        | SP | Kg   | <b>L</b><br>(m) |
|------------------|--------------------|-------------|----|------|-----------------|
| 25               | 3/4                | 300 200 003 | 25 | 0.14 | 85              |
| 32               | 1                  | 300 200 005 | 25 | 0.19 | 94              |
| 63               | 1 1/2              | 300 200 008 | 5  | 0.80 | 135             |
| 63               | 2                  | 300 200 009 | 5  | 0.81 | 138             |



Female Thread

- Polyethylene PE100 Black SDR11 / Brass (ISO S5)
- Stainless Steel Ring 304
- British Standard Pipe Taper (BSPT) Threads: Brass Female Threaded
  Standard/ Conformance: MS 1058, ISO 4427, EN 12201
- Welding Technology: Electrofusion/ Butt fusion
- Pressure Rating: PN 16 Water

**Transition Fittings PE/Brass** 

|   | d   | R      | Code        | SP | Kg   | L   |
|---|-----|--------|-------------|----|------|-----|
| ( | mm) | (inch) |             |    |      | (m) |
|   | 25  | 3/4    | 300 200 013 | 25 | 0.19 | 71  |
|   | 32  | 1      | 300 200 015 | 25 | 0.12 | 74  |
|   | 63  | 1 1/2  | 300 200 018 | 5  | 0.50 | 107 |
|   | 63  | 2      | 300 200 019 | 5  | 0.56 | 111 |

# **General Information**

| Measures, units and             | d, d1, d2, d3             | : Diame     |  |
|---------------------------------|---------------------------|-------------|--|
| abbreviations                   | DN                        | : Nomin     |  |
|                                 | L, L1, L2, z, z1          | : Length    |  |
|                                 | e, e1                     | : Wall th   |  |
|                                 | Н                         | : Height    |  |
|                                 | R                         | : Radius    |  |
|                                 | NH                        | : Numbe     |  |
|                                 | SDR                       | : Standa    |  |
| Working pressure                | The maximum a             | allowable   |  |
|                                 | is influenced b           | y tempera   |  |
| Specification                   | Georg Fischer             | PE pipes a  |  |
|                                 | 4130:2018, and            | Indonesia   |  |
|                                 | And meet the l            | SO 4437:2   |  |
| Material                        | Georg Fischer HDPE Pip    |             |  |
|                                 | the PE100+ Association    |             |  |
|                                 | REGRESSION ANALYSIS       |             |  |
|                                 | design.                   |             |  |
| Terms and conditions<br>of sale | Refer to GFID t           | erms and    |  |
| Quality management systems      | Quality management syst   |             |  |
|                                 | is continuously           | / improved  |  |
|                                 | Indonesia are             | certified   |  |
|                                 | System accord             | ling to IS( |  |
|                                 | System accord             | ing to ISU  |  |
| Technical documentation         | Please visit Ge           | org Fische  |  |
| Service, training and           | Our comprehe              | nsive train |  |
| consultation                    | and consultation          | on and trai |  |
| Your Partner                    | Georg Fischer             | is a world  |  |
|                                 | Fischer partner on the ba |             |  |

eter

nal diameter

th

thickness

IS

per of bolt holes

dard Dimension Ratio

e operating pressure (MAOP) of Polyethylene (PE) pipe system ature, fluid, application, etc.

and fittings meet the ISO 4427:2019, EN 12201:2013, AS/NZS ia national standard (SNI 4829.2:2015) for water application. 2014, EN 1555:2010 for gas application.

pes and Fittings pre-compounded raw material certified by and certified by independent an accredited laboratory for ACCORDING TO ISO 9080 for classification and lifetime

I conditions of sale

stem is well established at Georg Fischer and Environmental ed to satisfy our customers. Management PT Georg Fischer according to ISO 9001:2015, Environmental Management 50 14001:2015, Occupational Health & Safety Management 45001:2018.

ner official website or contact Georg Fischer representative

ning program offers you the possibility for extensive advice aining.

ld-wide organisation. Please find the address of your Georg oack cover.

# Packaging, handling and storage



Polyethylene (PE) pipe is though and resilient. However its relative lightness can be deceptive when considering the safety aspects of moving and handling. It can also be damaged by excessive scuffing or gouging of ends, external and internal surfaces during loading, unloading and transfer operations.

#### Transport

PE pipes should be transported on a flat-bed, container or curtain- side type vehicle, free from Sharp objects and any projections. Care should be taken to ensure the size, Shape, weight and centre of gravity are such that the stability and security of the load is not compromised throughout the transport journey. Furthermore, nothing should be placed on top of PE pipes during transport which could cause the pipe to deform.

#### Loading and Unloading

Wide slings should be used to lift pipe bundles by crane. Chains, hooks or wire rope slings should not be used since they can slip and gouge or abrade the pipe surface. Strapping or banding straps used to retain packs and bundles must not be used for lifting or handling. Allowance should be made for deflection or bending of pipes during all loading and unloading operations.

Depending on the terrain, standard forklifts can generally used for lengths up to 6m. If a forklifts is used, contact points must be protected from damage and forklift tines must not be inserted between the windings of the coils. Longer lengths should be lifted and moved by equipment fitted with loadspreading beams or attachments. Cranes or Hiabs can be efficient and safe provided precautions are made for correct slinging of the load and operation of the equipment. Larger diameter pipes (e.g.355mm OD and over) should be handled individually. These are generally less stable than bundled lengths and will move freely unless adequately restrained. Pipes which have been held or restrained in bundles or singly by strapping or banding etc. during storage, handling and transportation will hold considerable amounts of stored energy. Thermal expansion and contraction contributes to the amount and the direction of the stored energy. This stored energy can be hazardous if released incorrectly.

#### Storage

Pipe should not be stored in direct contact with the ground. Timber battens or other suitable means should be placed under the pipe in uniform spacing. Stack height should be limited to prevent pipe from losing Shape due to imposed loads. Nothing should be placed on top of PE pipes during storage which could cause pipe to deform. Pipe stacks should be pegged, chocked or otherwise secured to prevent pipes rolling or falling.

Bundled packs should be stacks so that their packaging battens are in line with each other. This will facilitate easy access by the forklift truck or side loader. Where battens are not aligned additional rigid dunnage should be placed between bundles. Coils can be stored flat on a solid flat surface or in near vertical position to prevent distortion.

Impact, abrasion and contact with hot surfaces such as vehicle exhausts can damage pipes and pipe ends. Covered storage should be considered if prologned exposure to direct sunlight is envisaged as well as storage away from sources of direct heat or fire. Pipe should not be stored where there is a possibility of contact with chemicals (e.g.lubricating/hydraulics oils, solvents, conditioning fluids etc).Pipe which has been heavily contaminated with such substances should be scrapped. Notes:

| <br> |  |
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