Building Technology

From Applications to Products
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GF Piping Systems
Your global system provider

We are dedicated to designing, manufacturing and marketing piping systems for the safe and secure conveyance of liquids and gases.

We put customers first
- customer needs guide our product development
- we offer customer support and training worldwide
- we measure your satisfaction

We act fast
- local presence worldwide
- superior logistics
- speed in all details

We do what we say
- tested quality
- always trustworthy

Your global benefits at a glance

Training
- different materials and products
- installation techniques
- connection and jointing techniques

Planning
- professionally trained staff
- planning documentation (online, CD-ROM)
- product library (online, CD-ROM)
- online catalogues

Standards
- DIN
- ISO
- BS
- ASTM

Distribution network and availability
GF Piping Systems at your service
We support you throughout

<table>
<thead>
<tr>
<th>Brandname</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTAFLEX PB</td>
<td>Polybutylene</td>
</tr>
<tr>
<td>iFIT</td>
<td>Polybutylene and Multilayer pipes, fittings PPSU</td>
</tr>
<tr>
<td>ALUPEX EXPRESS</td>
<td>ML</td>
</tr>
<tr>
<td>AQUASYSTEM</td>
<td>PP-R</td>
</tr>
<tr>
<td>COOL-FIT</td>
<td>ABS, PE 100</td>
</tr>
<tr>
<td>PRIMOFIT</td>
<td>Polyethylene, others</td>
</tr>
<tr>
<td>Sanipex MT</td>
<td>PEX/Gunmetal</td>
</tr>
<tr>
<td>Sanipex Classic</td>
<td>ML/Gunmetal</td>
</tr>
</tbody>
</table>

### Added Value

GF Piping Systems at your service
We support you throughout

<table>
<thead>
<tr>
<th>End Customer</th>
<th>Engineering Company</th>
<th>Distributor</th>
<th>OEM/Installer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Material</td>
<td>Warehousing</td>
<td>Installation</td>
</tr>
<tr>
<td>Decision</td>
<td>Definition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specifications</td>
<td>Planning</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Piping system solutions consulting
- Technical and cost optimization
- Mechanical and chemical advice
- Material recommendation
- CAD library
- Planning fundamentals training
- Documentation (printed and electronic)
- Submit an offer
- Jointing technologies and installation training
- Efficient distribution system
- Local certificates and approvals
- International standards
- Global subsidiaries
Start with Application Environment

Select your Application

Find your System Solution

Define your Material

Add Products

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>PP-H</th>
<th>PPGI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature limits (25 years)</td>
<td>+15 °C</td>
<td>+12 °C</td>
</tr>
<tr>
<td>Weight % (Volume %, Mass %)</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Density</td>
<td>0.90 - 0.91</td>
<td>1.19</td>
</tr>
<tr>
<td>Tensile modulus</td>
<td>1300</td>
<td>1200</td>
</tr>
<tr>
<td>Notch impact strength</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Taber abrasion</td>
<td>150...200</td>
<td>250...300</td>
</tr>
<tr>
<td>Abrasion resistance</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Coefficient of thermal expansion</td>
<td>0.16...0.18</td>
<td>0.07...0.08</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>0.23</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Type 546
2-way Ball Valve

Type 567
Butterfly Valve

Variable Area Flow Meter

F/5478
F/5885
F/8222
Hotels are an oasis of comfort and calmness. Guests expect first-class service which includes a perfectly functioning heating, air-conditioning and water supply at all times. Disturbances and noise – caused by repair work on defective piping systems – or even rust-coloured water from corroding pipes are unpleasant and make a negative impression on hotel guests, leading them to think twice about returning to this hotel. That is why it is always worth while to invest in good quality piping systems from GF Piping Systems. Our piping systems are corrosion- and repair-free and offer a prompt return on investment.

**+GF+**

### Application

**Environment**

**Hotels are an oasis of comfort and calmness. Guests expect first-class service which includes a perfectly functioning heating, air-conditioning and water supply at all times. Disturbances and noise – caused by repair work on defective piping systems – or even rust-coloured water from corroding pipes are unpleasant and make a negative impression on hotel guests, leading them to think twice about returning to this hotel. That is why it is always worth while to invest in good quality piping systems from GF Piping Systems. Our piping systems are corrosion- and repair-free and offer a prompt return on investment.**
Hotel

AC Cooling
COOL-FIT (ABS, PE 100)

Fire Protection
Malleable cast iron fittings

Gas
Malleable cast iron fittings
ALUPEX GAS (ML)
PRIMOFIT
PRIMOFIT FIREJOINT
Hospitals are a place of healing and convalescence – requiring highly complex equipment and medical apparatus for this purpose. Piping systems and cable ducts line the long hospital corridors. The technology is kept well out of sight, but it is nonetheless of vital importance. Hygiene is another concern and everything must be in perfect working order. Quality products are therefore essential. Compact, space-saving fittings, flexible piping and easy installation technology are the answer. GF Piping Systems supplies all this and more. You, your engineers and installers are provided with individual solutions for all your needs.
Industrial buildings are a virtual playground for planners. Every building is constructed for a different purpose; creative solutions are needed. A factory, production and research facilities – the requirements are extremely diverse. But they have one thing in common: they all need a reliable supply of water, gas and compressed air. Production processes must operate without fail. Whether a new building, renovation or extension – GF Piping Systems has optimal systems for all areas so that you are assured the best possible solution. We focus on such important features as safety, environmental protection, durability and cost-effectiveness.

<table>
<thead>
<tr>
<th>Hot and Cold Water</th>
<th>Water Treatment</th>
<th>Grey Water</th>
<th>Heating</th>
</tr>
</thead>
<tbody>
<tr>
<td>INSTAFLEX (PB)</td>
<td>INSTAFLEX (PB)</td>
<td>INSTAFLEX (PB)</td>
<td>iFIT (ML / PEX / PERT)</td>
</tr>
<tr>
<td>iFIT (PB / ML)</td>
<td>iFIT (PB / ML)</td>
<td>iFIT (PB / ML)</td>
<td>ALUCLIMA (ML)</td>
</tr>
<tr>
<td>ALUPEX EXPRESS (ML)</td>
<td>ALUPEX EXPRESS (ML)</td>
<td>ALUPEX EXPRESS (ML)</td>
<td>Malleable cast iron fittings</td>
</tr>
<tr>
<td>AQUASYSTEM (PP-R)</td>
<td>AQUASYSTEM (PP-R)</td>
<td>AQUASYSTEM (PP-R)</td>
<td>PRIMO FIT</td>
</tr>
<tr>
<td>Malleable cast iron fittings</td>
<td>PE (electro fusion)</td>
<td>PE (electro fusion)</td>
<td>Sanipex MT</td>
</tr>
<tr>
<td>Sanipex MT</td>
<td>PVC-U</td>
<td>Sanipex MT</td>
<td>Sanipex Calor</td>
</tr>
<tr>
<td>Sanipex Classic</td>
<td>Sanipex Classic</td>
<td>Sanipex Classic</td>
<td></td>
</tr>
</tbody>
</table>
Industrial Building

1. AC Cooling
   - COOL-FIT (ABS, PE 100)

2. Compressed Air
   - INSTAFLEX (PB)
     - Malleable cast iron fittings
     - PRIMOFIT

3. Fire Protection
   - Malleable cast iron fittings

4. Gas
   - ALUPEX GAS (ML)
   - PRIMOFIT
   - PRIMOFIT FIREJOINT
GF Piping Systems developed the Quality Management System (QMS) to improve the comfort and the safeness for the end user. The QMS commences at the planning stage and terminates with handing over the building. Possible topics are:

**Noise reduction**
with a full plastic system

**Hygienic concepts**
for more safety

**Prefabrication**
which reduces costs and installation time

**No corrosion**
which ensures a longer life time

In addition, our advanced calculation method provides more safety to avoid pressure hammer and gives more consistency in hygiene. These are some of the advantages that GF Piping Systems is able to offer our clients.

GF Piping Systems offers custom-made solutions for each building. These references point our long-term expertise in building technology and our excellent customer relations. With GF Piping Systems you benefit from a professional partner for application-orientated plastic piping installations from AC to Gas. We developed interesting solutions to satisfy all your requirements.
from reliability, durability and low-noise transition. Our high quality plastics (PB, PP-R and PPSU) are corrosion-free. An additional benefit is our local support during the building period to reach a higher quality of the installation on the building site. Use our competence to build, monitor and operate your network.
The maximum of flexibility. Our electrofusion and socket fusion fittings permit efficient, fast and economical installation of the different systems. In combination with iFIT you have all the possibilities for the installation of hot and cold water. All the systems and jointings are developed for a life time of 50 years on a working pressure of 70°C at 10 bar. A full plastic system like INSTAFLEX offers you a noise reduction and prevents corrosion. These advantages give more comfort and save maintenance cost during the life time of the building and installation. GF Piping Systems offer you systems for a safe and reliable installation as well as local support to increase the installation quality during the building work.
Hot and Cold Water

Hot and cold water from the source to the tap. Our systems are designed for potable water. For this application GF Piping Systems offer you a reliable system with a hygienic approval that simulates a service life of 50 years. With our plastic systems you have an absolute corrosion free installation and less incrustation. This reduces the maintenance costs and gives a better comfort for you building during the whole life time. The flexibility of our system allows the pre-fabrication of the manifolds and the risers. With this advantage you are reducing the installation time and the overall operational costs.

Pre-fabrication provides shorter building time. With INSTAFLEX (PB) it is possible to pre-fabricate pipelines in coils, up to 7 floors including all the outlets. Flexibility in the branch positioning is possible with weld-in saddles of AQUASYSTEM (PP-R). These are installed in the shafts and connected to the run-outs with the iFIT system. The hot and cold water distribution solutions from GF Piping Systems are system-related and therefore ideal for new builds, renovation projects and the repair of traditional systems. The high quality plastics PB, PP-R and PPSU are guaranteed corrosion-free and have a very long service life.
Feel the comfort

Comfort and hygiene. Reliability and safety. These things are especially important to us in our homes. With the state-of-the-art building technology line of products from GF Piping Systems, we contribute to comfort and safety in your home.

Planners of hotels, hospitals and industrial buildings want comprehensive, ecological and cost-efficient solutions. GF Piping Systems offer a variety of materials and innovative systems; we have the perfect solution for every application.

These advantages give more comfort and save maintenance costs during the life time of the building and installation.

- noise reduction
- no noise due to pressure hammer
- corrosion-free
- less incrustation, better water quality
- less heat loss, shorter warm-up time of the water

GF Piping Systems offer excellent solutions that satisfy all requirements for your building projects or for your installations. All from one source.

Noise reduction. The noise reduction is one of the requirements for a modern building. With the plastic systems of GF Piping Systems you have the maximum of noise reduction for the whole installation. This gives you a higher value for the building and more comfort for the user. The charts above show the sonic speed and transmission of a plastic piping system compared to a metal system.

Heat loss. Hygiene is the most important issue for the drinking water installation. Our plastic piping systems are hygienic and dependable solutions for your applications. GF Piping System developed a system for every type of building with low heat conductivity: hot water stays warm for a longer time and cold water stays at a low temperature for a longer time. With this solution you save energy costs and provide more comfort for the user.
Hot and Cold Water

Expansion

<table>
<thead>
<tr>
<th>Material</th>
<th>Fixed point</th>
<th>Expansion loop</th>
<th>Clamp intersp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB 16 – 75</td>
<td>Yes</td>
<td>No</td>
<td>2m*</td>
</tr>
<tr>
<td>PB 90 – 225</td>
<td>No</td>
<td>Yes</td>
<td>2m*</td>
</tr>
<tr>
<td>PP – R</td>
<td>No</td>
<td>Yes</td>
<td>2m*</td>
</tr>
<tr>
<td>ML</td>
<td>No</td>
<td>Yes</td>
<td>2m*</td>
</tr>
</tbody>
</table>

* with pipe carrier

Chemical resistance. Based on the requirement of the water quality of drinking water there is no restriction. You will find further information in the technical documentation of the several products available. In terms of hypochlorite, ozone, aggressive gases please contact one of our representative offices or trading partners.
High economic efficiency and long service life. Solutions from GF Piping Systems in PVC-U and PVC-C have become the worldwide leading industrial systems for water treatment thanks to their special features. GF Piping Systems has been producing these plastic piping systems since 1957. Whether for treatment of drinking water or swimming pool water – with plastic systems from GF Piping Systems you know you have a recognised and time-tested solution for your buildings.

Compact solutions from GF Piping Systems. To enable compact constructions, we have developed special components. With our modular automation and our measurement and control technology you are assured flexible and efficient measurement and control.
Water Treatment Systems

The water treatment systems can be pre-fitted by the manufacturer and subsequently installed as units. Modules, preassembled with measurement and control technology, are built directly into the piping systems. Water treatment systems for a variety of applications on hotels and hospitals are generated from these individual modules. Whether for drinking water, swimming pools, whirlpools or for waste water treatment, GF Piping Systems has the solution.

**Measurement and control technology.** We offer complete solutions in plastic for water treatment and distribution, including automated valves [pneumatic and electric actuators]. GF SIGNET systems for flow measurement, for pH value measurement, for pressure and temperature measurement and for conductivity measurement are also included in our product range.
Waste water pipes for aggressive fluids.

Appropriate pipes for carrying water from toilets, showers and the kitchens are essential for the safe operation of any building. For different reasons more and more projects use rainwater for garden irrigation, car cleaning or flush tanks - but rainwater can react aggressively on metal. By using a corrosion free system from GF Piping Systems you benefit from the flexibility of our plastic piping system, from the reduction of maintenance costs and from a better sound protection from the pumps. With corrosion free systems you have the possibility to use one system for most of the applications. You save a lot of tools and different systems on the site. With our full plastic systems we give you a high quality solution to enhance your efficiency on site and cut the maintenance costs during the system life time.

### System features

**INSTAFLEX**
- PB pipes d16 – d225
- Pipes in bars or coils
- Fittings and valves
- Installation accessories
- Jointing technology
  - Compression fittings d16 – d25
  - Socket fusion fittings d16 – d110
  - Electrofusion fittings d16 – d110
  - Electrofusion sockets d16 – d225
  - Butt fusion fittings (d125, d160, d225)
  - Weld in saddles d125 – d225

**iFIT**
- PB pipes d16 – d32
- Pre-insulated pipes d16 – d32
- Polybutylene pipes and multi-layer composite pipes (PE-RT-AL-PE)

**AQUASYSTEM (PP-R)**
- Socket fusion fittings d20 – d125
- Electrofusion couplings d20 – d125

**PE electro fusion**
- PE d20 – d250
- Sanipex MT
- ML pipes d16 – d63
- Sanipex Classic
- PEX pipes d12 – d20
Pre-fabricated solutions for grey water applications.
Black and grey water systems from GF Piping Systems are a major contributing factor to safety. The all-plastic, durable systems complement our drinking water systems ideally. Our modern electrofusion technology or solvent cement jointing technology leads to fast installation and the highly diversified product mix provides installers with the flexibility they require. For custom-made solutions we offer our pre-fabrication service.
**Systems in combination**

**iFIT**
- PB pipes d16 – d32
- Pre-insulated pipes d16 – d32

Polybutylene pipes and multi-layer Composite pipes [PE-RT-AL-PE].

**ALUCLIMA**
- Underfloor heating system with radiant panels
- System panels
- Multilayer pipe (pex-b/ Al / pex-b) d16 – d20
- PE-RT pipe d16 – d20

**Malleable cast iron fittings**
- FE ⅛” – 4”

**PRIMOFIT**
- FE ⅛” – 3”
- PE d20 – d63
- PN 16 max. 105° C

**Sanipex MT**
- ML pipes d16 – d63

**Sanipex Classic**
- PEX pipes d12 – d20

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Heating that feels good. The energy required to heat buildings is supplied by oil, gas, wood, geothermal heat, heat recovery from industrial and incineration plants, as well as electricity. This energy is transported via water. Modern systems have been designed so that they can operate at water temperatures of max. 60° C.
Heating

Under Floor Heating, Radiator Connection and Concrete Activation

Multilayer composite pipes and plastic pipes with an oxygen barrier are used in such applications. GF Piping Systems supplies a complete system for radiator connection and floor heating, which comply with building standards in most countries.
We know different ways of designing air conditioning systems – with ceiling cooling, with active components or induction equipment. All systems have one energy carrier in common: water. The water can be cold, 3°C to 14°C, or warm up to 60°C, if it is required to heat rooms.

Cold water systems must be well insulated to utilize energy at the right place and to produce a minimum of condensation on the outer pipe walls. The slightest leak in the insulation jacket can cause condensation and – on metal pipes – corrosion. Corrosion on the interior of the pipes can be counteracted with inhibitors, but this is expensive and not entirely ecological acceptable from an

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**System features**

**COOL-FIT**

ABS
Material ABS (Acrylonitrile butadiene styrene)
d16 – d315
PN10 (10 bar at 20°C)
-40°C to +60°C
Pipes and fittings
Special components also possible

**Malleable cast iron fittings**

FE ⅛” – 4”

**PRIMOFIT**

FE ⅜” – 3”

PE d20 – d63
PN 16 max. 100°C

**Sanipex MT**

ML pipes d16 – d63
environmental point of view. Furthermore, metal pipe systems should be emptied and cleaned every four to five years because of silting which could clog control valves. All these factors lead to spiralling operating costs for metal air conditioning systems.

**Plastic systems from GF Piping Systems**, such as ABS, PE or INSTAFLEX, do not corrode. The risk of silting is also very low since inhibitors are generally not required. INSTAFLEX is ideal for cooling systems as well as for climate control (cooling, heating). Polybutylene – the INSTAFLEX material – withstands temperatures up to 95°C, at a working pressure of 5 bar and with a guaranteed service life up to 50 years (70°C at 10 bar). Low weight, a choice of jointing techniques and the resulting easy and quick installation are further advantages offered by plastic pipes. GF Piping Systems offer complete systems in plastic as well as butterfly valves, ball valves and the suitable actuators – worldwide from one source.
The friction loss should be minimal in a compressed air piping system during the transport of compressed air from a compressor to a tapping point. The quality of the compressed air produced by the compressor should remain consistent and the system must be absolutely tight. GF Piping Systems provides a complete solution, consisting of pipes, fittings, valves and fixation parts in the working pressure you need.

**System features**

**INSTAFLEX**
- PB pipes d16 – d225
- Pipes in bars or coils
- Fittings and valves
- Installation accessories

**Jointing technology**
- Compression fittings d16 – d25
- Socket fusion fittings d16 – d110
- Electrofusion fittings d16 – d110
- Electrofusion sockets d16 – d225
- Butt fusion fittings (d125, d160, d225)
- Weld in saddles d125 – d225

**Malleable cast iron fittings**
- FE ½” – 4”

**PRIMOFIT**
- FE ¾” – 3”
- PE d20 – d63
Compressed Air
For Industrial Applications and Laboratories

Installation is an essential component in a compressed air supply system. It has a great impact on cost efficiency and transporting energy. A pressure drop of 1 bar reduces output by 30 percent, while an unnecessary increase of 1 bar sends costs soaring by 10 percent. The smoothness of the internal wall in plastic systems from GF Piping Systems guarantees minimal pressure loss.

Dividing ring mains into sections with installed isolation valves makes additional adjustment easy by not interfering too much in the production process. Pressure and temperature limits are decisive criteria in material selection. INSTAFLEX allows operating at a higher ambient temperature.
Sprinkler systems are traditionally made of steel pipes. For GF Piping Systems the malleable iron fitting has a history of success beyond comparison.

Our fittings are the perfect example of high precision and have all major FM approvals. They are available in a galvanised or black finish.
1. Black malleable cast iron is annealed in an inert atmosphere (shielding gas or vacuum) and exhibits an even structure with higher carbon content.  
2. White malleable cast iron is annealed in an oxidizing atmosphere, thereby greatly reducing the carbon content in the peripheral areas.

The decarbonization of the structure is decisive for the following benefits of the white malleable cast iron:
- improved galvanizability due to better alloy formation of the zinc coating
- higher strength with same expansion
- conditional weldability and solderability is achieved with additional heat treatment.
The most important issue for a gas installation is the reliability of a piping system. With more than 160 years of experience in gas and water GF Piping Systems is a reliable and trusted partner. Especially suited for gas applications are our malleable cast iron fittings or ALUPEX Gas. Both products have different advantages and should be selected according to the respective requirements.

**System features**

**ALUPEX Gas**
- Multilayer pipe (pex-c / Al / pex-b) d16 – d40

**Malleable cast iron fittings**
- FE ½” – 4”

**PRIMOFIT**
- FE ¾” – 3”
- PE d20 – d63
- PN 16 max. 105°C

**PRIMOFIT FIREJOINT**
- FE ½” – 2”

**ALUPEX Gas** is a piping system made of multilayer pipes and brass screw or press fittings for the gas application in the building. The jointing is an axial press connection [sleeve] or compression fitting. This system allows you a fast and safe connection without o-rings. With the high performance multilayer pipe you are also save fittings.
and installation time. GF Piping Systems offers a wide product range from gas lines in the underground to piping systems for the end user in the building.

**Malleable cast iron fittings.** As safe solution, also for the pre-wall installation malleable cast iron fittings are classified according the EC regulations in the high class “A1” regarding reaction to fire and are therefore approved without fire resistance testing. **PRIMOFIT FIREJOINT** is a compression fitting which offers full end load capability and resistance against fire impact from outside (test procedure: withstand 850°C for 30 minutes). An additional graphite ring maintains end load capability and sealing during a fire.
INSTAFLEX

INSTAFLEX is a full plastic system which complies with the requirements of building technology. The different joining techniques give you the right solution and flexibility for each environment on the building site.

The modern all-plastic system has an outstanding flexibility in installation and operation. It allows cost-effective installation and a reduction of maintenance and energy costs. It offers you a long service life as well as noise-insulation and it is corrosion- and incrustation-free. With INSTAFLEX you increase the quality of the building.

**Product range:**

- Pipes in bars d16 – d225
  Material: PB

- Pipes in coils d16 – d25
  Material: PB

- Pipes with protective pipes in coils d16 – d25
  Material: PB - PE (protective pipe)

- Compression fittings (transition) d16 – d25
  Material: Corrosion resistant brass

- Electrofusion and socket fusion d16 – d110
  Material: PB

- Butt fusion with electrofusion socket d125 – d225
  Material: PB

- Valves with electro and socket fusion d20 – d63
  Material: PB

Clean the fitting.

Place the pipe into the fitting and tighten the screws to fix the pipe.
INSTAFLEX

Advantages:
- noise reduction for higher comfort
- no maintenance costs, no corrosion, no incrustation
- pre-fabrication saves installation time
- less labour costs

Electro fusion
- easy and fast
- pre-fabrication possible
- good access in narrow spots
- full plastic solution

Socket fusion
- ideal for pre-fabrication
- space-spacing cuts material costs
- full plastic solution

Compression
- no special tool
- low creep behaviour

Welding.
Check if the weld indicator comes out.
iFIT

You may compare iFIT with a Swiss army knife: one tool for all situations on the building site. iFIT is an innovative modular fitting system with modules and adaptors for bathroom/WC and heating installations. With fewer parts in the range, iFIT is more versatile than traditional installation systems. This allows low inventories with a maximum on flexibility.

iFIT enables more reliable processing thanks to view windows and click joints.

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**Product range:**

- Pipes in bars d16 – d32
  Material: PB / ML
- Pipes in coils d16 – d25
  Material: PB / ML / PEX
- Pipes with protective pipes in coils d16 – d25
  Material: PB / ML
- Pre insulated pipes in coils 6 mm and 9 mm
  Material: ML
- Transition fittings
  Material: Corrosion resistant brass
- Fittings
  Material: PPSU

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Cut the pipe.  Chamfer.
Push until the pipe fully covers the window.

Push until you hear the click.

Advantages:
- turnable
- push
- fast, easy and safe
- disassembling possible
- electricity is not required
- fewer tools, lower investment
- low stock-keeping
- reduces labour costs
- save claim costs
- extremely cost-effective
JRG Sanipex MT
JRG Sanipex Classic

JRG Sanipex MT is an innovative installation system, developed by Georg Fischer JRG, which consists of cross-linked PEX multilayer pipes with aluminum carrier pipes and PPSU fittings. While fittings with diameters d16 to d40 are manufactured as fitting-in-fitting in a special two-layer plastic injection molding process, the fittings with diameters d50 and d63 are made of red brass. The fittings are screwed onto the multilayer pipe using coupling nuts.

All the materials comply with the regulations and are hygienic safe to use. JRG Sanipex MT unions are removable and reusable. This is a huge advantage when expanding installations.

Product range:

- Sanipex MT: d16 – d63
- Pipe coils: d16 – d26
- Pipe rods: d16 - d63
- Sanipex Classic: d12 - d20

Mark pipe length.

Cut the JRG Sanipex MT pipe to desired length with pipe cutter.
JRG Sanipex MT
JRG Sanipex Classic

Advantages

- fast, easy assembly
- removable and reusable connections
- Minimal linear expansion of pipes
- full pipe cross section in the fitting
- highly resistant to corrosion and lime deposits
- water pocket free installation
- dimensions DN12 and DN15
- combination with flexible JRG Sanipex Classic System
- direct connections to JRG valves
- ecological and recyclable material

Insert the pipe end in the expansion tool. Start flaring process with the hydraulic unit. Tighten the coupling nut with the ratchet torque wrench until you hear a «click».
ALUPEX

ALUPEX is a piping system made of multilayer pipes and brass screw or press fittings.

The ALUPEX Express Press system is an innovative piping system consisting of axial compressed fittings and multilayer pipe (PE-Xc/AL/PE-Xb) for sanitary, heating and indoor gas installations. The system is designed for new installations as well as for replacements and/or extensions of existing pipe network. The press fitting system allows an irreversible connection. This is possible thanks to an optimal fitting design, high performance multilayer pipes and efficient tools. An ADZ brass coupling makes the ALUPEX Express fitting. The tightness is achieved by the nut traction on a deformable ring. This kind of press fitting grants better performances for flow as well as temperature resistance.

Product range:

- **Fittings**
  - ML Pipes in coils d16-d40
  - ML Pipes pre insulated from d14 - d260
  - PL Pipes in bars d16-d75

Cut the pipe.  
Chamfer.
**ALUPEX**

**Advantages:**

- Extendable with no loss in quality, flexible and easy to process
- System guarantee with irreversible connection
- Connection without o-ring, no corrosion
- No welding
- Piping systems without overlapping – longitudinal butt welding
- High quality and durable product manufactured with crosslinked PE
- Abrasion resistant with PE-X outerlayer

**Calibration.**

**Press.**
ALUCLIMA

ALUCLIMA is a radiant floor heating and cooling system, composed of insulating panels, piping and a regulation system. In the development of this system GF Piping Systems focused primarily on the durability (safety) and cost-effectiveness of this system.

ALUCLIMA heating and cooling system has a high flexibility in all situations. Easy to install it’s the right solution for all kind of buildings (residential, historical, industrial).

ALUCLIMA floor heating works at low temperatures and develops a uniform heat distribution and therefore all air flow is eliminated. This is one of the main causes of allergies. Furthermore, the floor heating is the best solution to eliminate acarus, mould and humidity.

Product range:

ALUCLIMA heating systems are composed from the following products:

- Insulating panels: styrofoam or cork panels (10 to 40 mm)
- Pipes: multilayer pipes and PE-RT pipes diameter d16 and d20 available
- All pipes are available in coils from 60 m to 500 m
- Regulation system: water- and room temperature regulation system
ALUCLIMA

**Advantages:**

- one system for heating and cooling
- clean and comfortable ambiance
- no radiators
- reduction of energy costs
- easy to install, high product reliability, long durability
- technical support and planning with the help of the GF Piping Systems Team

Calibration. Press.
Malleable Cast Iron Fittings

Due to their long history and tradition malleable cast iron fittings are the most common (widest spread) pipe fittings. Because of their durability and mechanical strength these fittings continuously enjoy great popularity.

The material bearing high mechanical stress together with the universal, standardised jointing method ensures a safe use in a wide range of applications.

- sanitary, heating and gas installation
- sprinkler and gas fire extinguishing systems
- construction of industrial plants
- machine construction
- construction of petrol stations
- machines for paper production and printing machines
- commercial vehicles construction

Product range:

Surface: black or galvanised
Suitable for: steel pipes acc. to EN 10255
Max. working conditions: 120°C / 25 bar, 300°C / 20 bar, interpolated values between
Range: ¾ to 4 inch
Temperature range: 
-20°C to +300°C (short term to -50°C)
Connection: jointing threads, sealing on the threads

Cut the pipe.  Mark the insert length of the fitting.
Malleable Cast Iron Fittings and PRIMOFIT

Advantages:

- corrosion retarding and reinforced (free outrunning) internal threads design for the most common articles
- narrow threads with precise axial alignment ensure high sealing forces and exact pipe lining
- the biggest range of all producers – cost reduction due to a minimum number of joints
- highest grade material with best galvanizability
- drinking water friendly galvanising with highly pure zinc
- drinking water friendly preservation against rust during storage, also ideal for anaerobic sealing
- special tested fittings for high pressures above 25 bar

Tighten the connection by hand for a dry fit.

Screw the fitting.
AQUASYSTEM

AQUASYSTEM is a full plastic system which complies with the requirements of building technology. The wide product range gives you the right solution for each application: traditional pipes for hot (PN20) and cold (PN10) water, PPR-ALU and FIBRE pipes to reduce the expansions and increase the bracketing distance.

As a full plastic system AQUASYSTEM provides low noise transmission and the reduction of the maintenance and energy costs as well as longevity. Moreover the system is corrosion and incrustation-free. With AQUASYSTEM you improve the quality of the building.

**Product range:**

- Pipes in bars d20 – d125 (PN10 and PN20)
  - Material: PPR
- PPR-ALU Pipes d20 – d125
  - Material: Alu, PPR
- FIBRE Pipe d20 – d125
  - Material: PPRCT – PPH GF – PPRCT
- Socket fusion fittings d20 – d125
  - Material: PPR
- Threaded fittings ½” – 3”
  - Material: PPR
- Electro fusion socket d20 – d125
  - Material: PPR
- Valves d20 – d63
  - Material: PPR

Cut the pipe.  
Mark the insertion depth.
Advantages:

- Longevity - designed to work more than 50 years
- Noise reduction for higher comfort
- Low expansion with the fibre pipe
- No maintenance costs, no corrosion, no incrustation
- Low thermal conductivity

**Electro fusion**
- Fast and easy
- Good access in narrow situations
- Full plastic solution

**Socket fusion**
- Easy and reliable
- Save space
- Cuts material costs
- Full plastic solution

Heat pipe and fitting. Weld them together.
PVC-U

The PVC-U piping systems are produced from a unique PVC-U compound to ensure highest possible thermal stability and chemical resistance. The full product range covers all requirements with regard to pipes, fittings, valves, automation as well as measurement & control. A life-time warranty and our comprehensive back-up support service add value to all PVC-U products from GF Piping Systems by optimising their long-term ownership cost.

PVC-C

The PVC-C product range from GF Piping Systems is produced to the same high quality standards as our PVC-U range. Its superior mechanical strength provides excellent reliability for all applications with continuous temperature load of up to 80°C and for a maximum pressure of up to 16 bar at 20°C.

Product range:

| PVC-U pipes, grey and transparent | PN4 - PN16 |
| PVC-U fittings, grey             | PN4 - PN16 |
| Ranges                          | d6 - d400  |
| Standards                       | ISO/DIN, BS, ASTM, JIS |
| PVC-C pipes, grey               | PN10 - PN16 |
| PVC-C fittings, grey            | PN6 - PN16  |
| Ranges                          | d16 - d225 |
| Standards                       | ISO/DIN, ASTM |
PVC-U / PVC-C

Advantages:

- complete product range
- full back-up support based on long-term experience
- reliable and proven solvent cement jointing technique, a technique which is easy to learn and quick to apply
- meets highest demands regarding impact resistance, thermal stability, chemical resistance and service life

Apply the Tangit cement. Push the pipe into the fitting.
COOL-FIT

COOL-FIT is a complete pre-insulated system for secondary cooling and refrigeration piping systems. The high quality PUR isolation (black outer jacket) is UV and weather resistant.

The pipe system in ABS from GF Piping Systems comes with low temperature resistance and high impact resistance. The system contains pipes, fittings, valves, and transition fittings. Additionally manual and actuated valves for shut off and flow control are available as well as transition unions for plastic to metal connections. COOL-FIT is a suitable media for water, ice water, salt solutions, glycol solutions, and organic salt solutions.

Product range:

**ABS**
- Material ABS
- (Acrylonitrile butadiene styrene)
- d16 – d315
- PN10 (10 bar at 20°C)
- -40°C to +60°C
- Pipes and fittings
- Special components also possible

**COOL-FIT**
- PN10 (nominal working pressure 10 bar)
- -50°C to +40°C
- nominal working temperatures
- DN10 to DN300 dimensions

Cleaning the pipe and socket. Apply the ABS Cement to the inside surface.
Cooling

Advantages:

- no corrosion
- high efficiency of insulation = 0.026 W/m.K
- reducing costs of suspension
- 25 years service life
- save installation time
- high product reliability
- hygienically safe and aesthetic

Apply the double sided sealing tape around the outer pipe.

Using an open flame apply heat to the sleeve.
JRG Valves

LegioStop is a drinking water system made of gunmetal and designed with a view to eliminating water pockets.

JRG gunmetal valves satisfy the highest quality demands. The specially designed body of JRG LegioStop valves, for example, guarantees everlasting smooth running and absolute hygiene. JRG LegioTherm is a circulation control valve that not only regulates the flow volume, but also enables controlled and verifiable thermal disinfection.

Product range

<table>
<thead>
<tr>
<th>JRG lime protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>JRG Coral force</td>
</tr>
<tr>
<td>d1.5 m³/h – d14m³/h</td>
</tr>
</tbody>
</table>

Control valves

Safety valves

Drain valves

Flow valves

Filters

Circulation controller JRG LegioTherm 2T for thermal disinfection
JRG Valves

Advantages:
- water pocket valves improve quality of drinking water
- comprehensive range of valves
- smoothly running valves
- low-maintenance valves
- sophisticated design increases safety

Connecting set for hot water heaters

JRGUMAT thermostatic control mixing valve
### Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>ABS</th>
<th>PE 100</th>
<th>PVC-U</th>
<th>PVC-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature limits</td>
<td>-40 / +60</td>
<td>-40 / +60</td>
<td>0 / +60</td>
<td>0 / +80</td>
</tr>
<tr>
<td>Weight / meter pipe (PN10, d63)</td>
<td>0,368</td>
<td>0,33</td>
<td>0,4</td>
<td>0,435</td>
</tr>
<tr>
<td>Density</td>
<td>≥ 1,035</td>
<td>0,95</td>
<td>1,38</td>
<td>1,5</td>
</tr>
<tr>
<td>Flexural modulus</td>
<td>≥ 1800</td>
<td>-</td>
<td>&gt; 2400</td>
<td>-</td>
</tr>
<tr>
<td>Tensil modulus</td>
<td>23° C</td>
<td>900</td>
<td>-</td>
<td>&gt; 2550</td>
</tr>
<tr>
<td>Stiffness *</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Toughness *</td>
<td>23° C</td>
<td>5</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0° C</td>
<td>4</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>-40° C</td>
<td>3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Charpy notched impact strength</td>
<td>23° C</td>
<td>42</td>
<td>83</td>
<td>&gt; 6</td>
</tr>
<tr>
<td></td>
<td>0° C</td>
<td>-</td>
<td>-</td>
<td>&gt; 3</td>
</tr>
<tr>
<td></td>
<td>-40° C</td>
<td>&gt;10</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>Taber abrasion</td>
<td>-</td>
<td>60</td>
<td>250...300</td>
<td>250...300</td>
</tr>
<tr>
<td>Abrasion resistance *</td>
<td>/</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Coefficient of thermal expansion</td>
<td>not linear</td>
<td>0,15...0,2</td>
<td>0,07...0,08</td>
<td>0,06...0,07</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>23° C</td>
<td>0,17</td>
<td>0,38</td>
<td>0,15</td>
</tr>
<tr>
<td>Limited oxygen index [LOI]</td>
<td>19</td>
<td>&lt;19</td>
<td>42</td>
<td>60</td>
</tr>
<tr>
<td>Burning behaviour (O burning / X self-extinguishing)</td>
<td>0</td>
<td>0</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Long-term strength (MRS)</td>
<td>14</td>
<td>10</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Pressure resistance *</td>
<td>3</td>
<td>2</td>
<td>4</td>
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</table>

### Pipes

<table>
<thead>
<tr>
<th>PVC-U</th>
<th>PVC-C</th>
<th>PE 100</th>
<th>INSTAFLEX</th>
<th>PB</th>
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<tbody>
<tr>
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### Fittings

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### Butterfly Valves

<table>
<thead>
<tr>
<th>PVC-U</th>
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<th>PE 100</th>
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<th>PB</th>
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<tbody>
<tr>
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### Ball Valves

<table>
<thead>
<tr>
<th>PVC-U</th>
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<th>INSTAFLEX</th>
<th>PB</th>
</tr>
</thead>
<tbody>
<tr>
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### Diaphragm Valves

<table>
<thead>
<tr>
<th>PVC-U</th>
<th>PVC-C</th>
<th>PE 100</th>
<th>INSTAFLEX</th>
<th>PB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### Actuated Valves

<table>
<thead>
<tr>
<th>PVC-U</th>
<th>PVC-C</th>
<th>PE 100</th>
<th>INSTAFLEX</th>
<th>PB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

### Process control Valves

<table>
<thead>
<tr>
<th>PVC-U</th>
<th>PVC-C</th>
<th>PE 100</th>
<th>INSTAFLEX</th>
<th>PB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

### Measurement and Control

<table>
<thead>
<tr>
<th>PVC-U</th>
<th>PVC-C</th>
<th>PE 100</th>
<th>INSTAFLEX</th>
<th>PB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Valves in PP, PVC with PB Adapter
2 Valves in PP, PVC, ABS
This table allows you to select the material according to its characteristics.

<table>
<thead>
<tr>
<th>PB</th>
<th>PEX</th>
<th>ML</th>
<th>Unit</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 / +95</td>
<td>-20/+95</td>
<td>-20/+95</td>
<td>°C</td>
<td></td>
</tr>
<tr>
<td>1,020 **</td>
<td>0,091</td>
<td>0,112***</td>
<td>kg/m</td>
<td></td>
</tr>
<tr>
<td>0,94</td>
<td>0,94</td>
<td>-1,1</td>
<td>g/cm²</td>
<td>ISO 1183</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>N/mm²</td>
<td>EN ISO 527-1</td>
</tr>
<tr>
<td>450</td>
<td>600</td>
<td></td>
<td>N/mm²</td>
<td>EN ISO 527-1</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>5</td>
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<tr>
<td>3</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
<td>kJ/m²</td>
<td>DIN EN ISO 179/1eA</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td></td>
<td>kJ/m²</td>
<td>DIN EN ISO 179/1eA</td>
</tr>
<tr>
<td>-</td>
<td></td>
<td></td>
<td>kJ/m²</td>
<td>DIN EN ISO 179/1eA</td>
</tr>
<tr>
<td>160</td>
<td></td>
<td></td>
<td>mm²/10^9 Zyklen</td>
<td>DIN 53754</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0,13</td>
<td>0,2</td>
<td>0,023</td>
<td>mm/mK</td>
<td>DIN 53752</td>
</tr>
<tr>
<td>0,32</td>
<td>0,35</td>
<td>0,43</td>
<td>W/mK</td>
<td>DIN 52612</td>
</tr>
<tr>
<td>&lt; 19</td>
<td></td>
<td></td>
<td>%</td>
<td>ISO 4589</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>50</td>
<td>50</td>
<td></td>
<td>ISO 9080 / ISO 12162</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Relative values ranked on a scale from 1 to max. 5 being the highest value
** PN 16
*** Ø 16x2
## Product Range

<table>
<thead>
<tr>
<th>Product Range</th>
<th>Document Number</th>
<th>Size Range</th>
<th>Pressure Rating</th>
<th>Temperature Range</th>
<th>Material Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d16 – d315</td>
<td>PN10</td>
<td>-40°C – 60°C</td>
<td>AC</td>
</tr>
<tr>
<td>PE100 Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d20 – d400</td>
<td>PN16</td>
<td>-50°C – 60°C</td>
<td>AC, C, WT</td>
</tr>
<tr>
<td>PP-R Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d20 – d110</td>
<td>PN10/20</td>
<td>0°C – 80°C</td>
<td>HC, WT, GW</td>
</tr>
<tr>
<td>PVC-U Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d25 – d315</td>
<td>PN10</td>
<td>0°C – 60°C</td>
<td>WT, GW</td>
</tr>
<tr>
<td>PVC-U Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d12 – d160</td>
<td>PN16</td>
<td>0°C – 60°C</td>
<td>WT, GW</td>
</tr>
<tr>
<td>PVC-C Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d16 – d160</td>
<td>PN16</td>
<td>0°C – 80°C</td>
<td>WT, GW</td>
</tr>
<tr>
<td>PVC-C Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d75 – d225</td>
<td>PN10</td>
<td>0°C – 80°C</td>
<td>WT, GW</td>
</tr>
<tr>
<td>PB Pipes / Fittings INSTAFLEX</td>
<td>GMST 8256</td>
<td>d16 – d225</td>
<td>PN10</td>
<td>0°C – 95°C</td>
<td>HC, WT, GW, CA</td>
</tr>
<tr>
<td>iFIT Pipes / Fittings</td>
<td>GMST 8256</td>
<td>d16 – d32</td>
<td>PN16</td>
<td>0°C – 95°C</td>
<td>HC, WT, GW, H, PB, ML</td>
</tr>
<tr>
<td>Alupex</td>
<td></td>
<td></td>
<td>PN10</td>
<td></td>
<td>HC, WT, GW, H, G</td>
</tr>
<tr>
<td>Malleable cast iron fittings</td>
<td></td>
<td>1/8” – 4”</td>
<td>PN16</td>
<td>-300°C</td>
<td>HC, AC, C, CA, FP, G, H</td>
</tr>
<tr>
<td>Sanipex MT</td>
<td></td>
<td>d16 -d63</td>
<td>PN10</td>
<td>0°C - 95°C</td>
<td>HC, AC, C, CA, FP, G, H</td>
</tr>
<tr>
<td>Sanipex Classic</td>
<td></td>
<td>d12 -d20</td>
<td>PN10</td>
<td>0°C - 95°C</td>
<td>HC, AC, C, CA, FP, G, H</td>
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</tbody>
</table>
# Approvals

<table>
<thead>
<tr>
<th></th>
<th>iFIT</th>
<th>INSTAFLEX</th>
<th>AQUASYSTEM</th>
<th>PE-100</th>
<th>Sanipex MT</th>
<th>Sanipex Classic</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th></th>
<th>iFIT</th>
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