

MAKES WATER
MORE INTERESTING



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eur^otherm
PRODUCT CATALOGUE



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About The Eurotherm System

The use of plastic materials is increasingly common in every field of our everyday life; the excellent mechanical, chemical and physical properties of the most advanced polymers have made them outstandingly successful in a wide range of application.

Starting from the Eighties, the use of plastic materials in the pipe making industry has grown exponentially, and today, they are used for a huge variety of applications, including heating and air conditioning system inlet and outlet pipes – to the ever growing appreciation of installers and end users.

Eurotherm Pipe System is a Random Polypropylene Copolymer pipe and fitting system which stands out among other plumbing and sanitary piping systems thanks to its quality and reliability. The chemical and physical properties of the material used and the fact that the various elements are joined by hot melting ensure that the systems are perfectly watertight even in the most demanding conditions of use.

The polypropylene used for the Eurotherm System is a special type of Bodycote certified Random Copolymer with high molecular weight supplied by established Petrochemical Companies.

The special copolymer molecular structure and the special additives used ensure high mechanical strength and prolonged life. Being very lightweight and easy to process, the material is efficiently used to make a complete Eurotherm system for installations built in 30 to 50% less time than it takes to build installations from metallic materials.

Eurotherm PP-R Pipe system is manufactured at their Factory located in Raysut Industrial Estate which is in Dhofar region, the Southern Part of Sultanate of Oman and is 4 km away from strategically placed Port of Salalah and 15 km away from Salalah International Airport

Factory is equipped with World's best Microprocessor controlled Injection molding machine for high quality fittings and Extruder plant for high quality pipe and also fully advanced Tool Room with team of highly qualified and experienced engineers.

The Company is with policy to serve its customer with quality; both in products and after sale services and with vision to reach far and wide of world market by developing dealers and distributors for the brand.



Physical, Mechanical and Thermal Properties of Raw Material

Polypropylene random copolymers are thermoplastic resins produced through the polymerization of propylene, with ethylene links introduced in the polymer chain. In comparison with PP homopolymers, random copolymers exhibit improved optical properties (increased clarity and decreased haze), improved impact resistance, increased flexibility, and a decreased melting point, which also results in a lower heat-sealing temperature. At the same time they exhibit essentially the same chemical resistance, water vapour barrier properties, and organoleptic properties (low taste and odour contribution) as PP homopolymers. Wide range in physical properties, good clarity, relative ease of processing and low density make random copolymer polypropylene an extremely attractive material capable of competing with more expensive resins in a number of demanding applications.

PP-R is a byproduct that does not require additional extraction of natural resources. This resource is transformed in to Eurotherm Pipe System by a rise in temperature, which plastizes the material, allowing the pipe to be produced by means of extrusion, and fittings by injection moulding.

| Property | Test Method | Unit | Value | |
|---|-----------------------|--------------------|----------------------|----------|
| Density at 23°C | ISO1183 | g/cm ³ | 0.905 | |
| Vicosity Number J | ISO 1628 T3 | cm ³ /g | 430 | |
| Melt Flow Rate MFR 190°C/5kg | ISO1133 Condition 18 | g/10min | 0.5 | |
| MFR 230°C/2.16kg | ISO1133 Condition 12 | g/10min | 0.3 | |
| MFR 230°C/5kg | | g/10min | 1.5 | |
| Melting Range | DIN 53736 B2 | °C | 150-154 | |
| Flexural Modulus | ASTM D790 | Mpa | 900 | |
| Tensile Stress at Yield | ISO 37 | Mpa | 27 | |
| Tensile Stress at Break | | Mpa | 32 | |
| Elongation at Break | | % | >50 | |
| Impact Strength (Charpy) | ISO 179/1eu | 23°C | KJ/m ² | No break |
| | | 0°C | KJ/m ² | No break |
| | | -10°C | KJ/m ² | No break |
| Notched Impact Strength (Charpy) | ISO 179/1eu | 23°C | KJ/m ² | 30 |
| | | 0°C | KJ/m ² | 4 |
| | | -10°C | KJ/m ² | 2.5 |
| Ball Indentation Hardness | ISO 2039 T1(132N) | Mpa | 43 | |
| Coefficient of Linear Thermal Expansion | VDE 0304 Part 1&4 | K-1 | 1.5x10 ⁻⁴ | |
| Thermal Conductivity at 20°C | DIN 52612 | W/Mk | 0.24 | |
| Specific Heat at 20°C | Adiabatic Calorimeter | KJ/kg K | 2.0 | |
| Vicat Softening Temperature | ISO 306/A | | °C | 130 |
| | | | °C | 61 |
| | | | °C | 61 |

Outstanding features of the Eurotherm PP-R Pipe System.



• Reduced installation time

Compared with traditional systems, Eurotherm Pipe System can grant a reduction in installation time of at least 30%.

• Resistance to electrolysis

The high resistivity of the piping system (10 Ohm cm.) guarantees a very low electrical conductivity. The risk of PP-R pipe or fittings piercing due to stray currents is practically nothing. Most chemical substances, which might be present in water or concrete, do not attack PP-R.

• Low pressure losses

The inner surfaces of pipes and fittings have a very low frictional resistance, in comparison to traditional systems, thus making it possible to reduce the distribution pressure losses.

• No Scaling

The reduction of the water flow normally occurs as a consequence of scaling (calcium carbonate) especially at high temperatures. P-R pipes of the Eurotherm system do not have scaling problems.

• Low Thermal Conductivity

The thermal conductivity of PP-R is very low (at 20°C is 0.24 W/MK), thus making it possible to reduce heat losses in the hot water supply and traditional heating systems. Also the condensation on the surface is much less than in metallic pipes.

This does not remove the statutory requirements for insulation on pipe work, but can improve the effect of insulation.

• Long Life

The Eurotherm piping system for hot and cold water services under pressure is designed to guarantee over 50 years operation at pressure and temperature conditions listed in the following tables (regression curves).

It last longer with less maintenance than other system, adding greater value to every installation.

• Non-toxicity and Safety

All materials used in the Eurotherm supply system, which are in contact with water, are certified as non-toxic and suitable for contact with drinking water (L102)

• Resistance against abrasion

Compared with traditional systems, Eurotherm Pipe System assures a very high resistance against abrasion granting in this way a long life.

• Noise Reduction

The raw material used to manufacture Eurotherm PP-R Pipe System has a high sound reduction index for absorbing sound waves and limiting the spread through pipes

• Fire Classification

Eurotherm Pipe system complies and is classified under the requirement of the fire classification, B2 (Normally inflammable) according to DIN 4102. In case of a fire outbreak of temperature >800°C, under ideal conditions with sufficient oxygen, only carbon dioxide and water vapour are produced as PP-R is a hydrocarbon chain, Toxic fumes or dioxin will not be emitted



Fields of Application

Eurotherm PP-R Pipe System is a pipe system with many applications due to its special characteristics and versatility.

• Potable water pipe networks

For cold and hot water installations e.g. in residential buildings, hospitals, hotels, office and school buildings, shipbuilding, sports facilities etc.

- House connection
- Boiler connection
- Water distribution
- Riser
- High rise
- Water point connection

• Heating pipes for residential houses

- Heat generator connections
- Heating manifolds
- Risers
- High rise
- Manifold connections
- Radiator connections

• Pipe networks for rainwater application systems

• Pipe networks for compressed air plants

• Pipe networks for swimming pool technology

• Pipe networks for the connection of heat pumps

• Pipe networks in agriculture and horticulture

• Pipe networks for solar plants

• Pipe networks for industry,

E.g. for the transport of aggressive fluids (acids) considering the chemical resistance

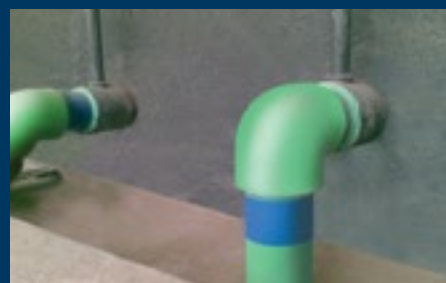
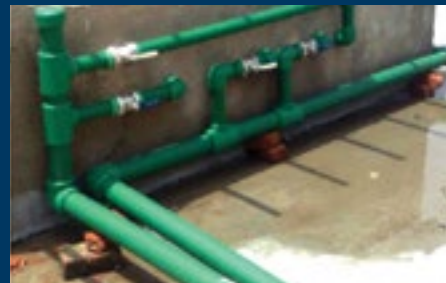
• Transport for liquid foods

The Eurotherm pipe system is applied in all fields of

• NEW INSTALLATION

• REPAIR

• RENOVATION.



Permissible Working Pressure

Eurotherm pipes and fittings are designed to withstand constant temperatures up to 70°C. The service life expectancy depends on the installed system pressure and pressure changes. Even though the service life expectancy of the pipes is more than 50 years, a permanent temperature rise from 70 to 90°C will accordingly reduce the operational life of the pipe. However, a temperature rise up to 100°C in short time frames are usually unproblematic.

The following table provides detailed information with regards to the permissible pressure of various pipe pressures rating at various temperatures. These values are derived from hoop stress chart and formula.

Example :-

A PN 10, Cold water pipe transporting water at a temperature of 30°C can last more than 50 years under normal conditions with an operating pressure of 13.0 Bar.

A PN 20, Cold & Hot water pipe transporting water at a temperature of 70°C can last more than 50 years under normal conditions with an operating pressure of 10.2 Bar

| | Working Pressure (bar) | Temperature (°C) | Working Times/Year (Hours/Year) |
|------------|------------------------|------------------|---------------------------------|
| Cold Water | 0 to 10 transient | To 25 | 8760 |
| Hot Water | 0 to 10 transient | To 60 | 8710 |
| | | To 80 | 50 |

FOR POTABLE WATER INSTALLATIONS

Maximum operational pressures for pipe consisting of PP-R, for water Safety Factor (SF) = 1.25 as per DIN 8077

| Temperature | Service life | PN 10 | PN 16 | PN 20 | PN 25 |
|---|--------------|-----------------------------|-------|-------|-------|
| | | Diameter wall thickness SDR | | | |
| | | 11 | 7.4 | 6 | 5 |
| Permissible operational pressure (bars) | | | | | |
| 10 °C | 1 | 21.1 | 33.4 | 42.1 | 53.0 |
| | 5 | 19.8 | 31.5 | 39.7 | 49.9 |
| | 10 | 19.3 | 30.7 | 38.6 | 48.7 |
| | 25 | 18.7 | 29.7 | 37.4 | 47.0 |
| | 50 | 18.2 | 28.9 | 36.4 | 45.9 |
| 20 °C | 1 | 18.0 | 28.5 | 35.9 | 45.2 |
| | 5 | 16.9 | 26.8 | 33.7 | 42.5 |
| | 10 | 16.4 | 26.1 | 32.8 | 41.4 |
| | 25 | 15.9 | 25.2 | 31.7 | 39.9 |
| | 50 | 15.4 | 24.5 | 30.9 | 38.9 |
| 30 °C | 1 | 15.3 | 24.2 | 30.5 | 38.5 |
| | 5 | 14.3 | 22.7 | 28.6 | 36.0 |
| | 10 | 13.9 | 22.1 | 27.8 | 35.0 |
| | 25 | 13.4 | 21.3 | 26.8 | 33.8 |
| | 50 | 13.0 | 20.7 | 26.1 | 32.9 |
| 40 °C | 1 | 12.7 | 20.1 | 25.4 | 31.9 |
| | 5 | 12.1 | 19.2 | 24.2 | 30.5 |
| | 10 | 11.8 | 18.7 | 23.5 | 29.6 |
| | 25 | 11.3 | 18.0 | 22.6 | 28.5 |
| | 50 | 11.0 | 17.4 | 22.0 | 27.7 |
| 50 °C | 100 | 10.7 | 16.9 | 21.4 | 26.9 |
| | 1 | 11.0 | 17.4 | 21.9 | 27.6 |
| | 5 | 10.2 | 16.2 | 20.4 | 25.7 |
| | 10 | 9.9 | 15.7 | 19.8 | 25.0 |
| | 25 | 9.5 | 15.1 | 19.0 | 24.0 |
| 60 °C | 50 | 9.2 | 14.7 | 18.5 | 23.3 |
| | 100 | 9.0 | 14.2 | 17.9 | 22.6 |
| | 1 | 9.2 | 14.7 | 18.5 | 23.3 |
| | 5 | 8.6 | 13.6 | 17.2 | 21.6 |
| | 10 | 8.3 | 13.2 | 16.6 | 21.0 |
| 70 °C | 25 | 8.0 | 12.7 | 16.0 | 20.1 |
| | 50 | 7.7 | 12.3 | 15.5 | 19.5 |
| | 1 | 7.8 | 12.3 | 15.5 | 19.6 |
| | 5 | 7.2 | 11.4 | 14.4 | 18.1 |
| | 10 | 7.0 | 11.1 | 13.9 | 17.5 |
| 80 °C | 25 | 6.0 | 9.6 | 12.1 | 15.2 |
| | 50 | 5.1 | 8.1 | 10.2 | 12.8 |
| | 1 | 6.5 | 10.3 | 13.0 | 16.4 |
| | 5 | 5.7 | 9.1 | 11.5 | 14.5 |
| | 10 | 4.8 | 7.7 | 9.7 | 12.2 |
| 95 °C | 25 | 3.9 | 6.2 | 7.8 | 9.8 |
| | 1 | 4.6 | 7.3 | 9.2 | 11.6 |
| | 5 | 3.1 | 4.9 | 6.2 | 7.8 |
| | (10) | (2.6) | (4.1) | (5.2) | (6.6) |

Data inside the bracket apply by verification at longer testing periods than 1 year at the 110°C test.

Maximum operational pressures for hot water and central heating systems

| Heating Period | Temperature | Service Life | Permissible operational pressure (bars) | | |
|--|-------------|--------------|---|---------------|---------------|
| | | | PN-16 / SDR 7.4 | PN-20 / SDR 6 | PN-25 / SDR 5 |
| Constant operating temperature 70°C including 60 days per year at >> | 75°C | 5 | 11.40 | 14.30 | 15.90 |
| | | 10 | 10.90 | 13.70 | 14.50 |
| | | 25 | 9.30 | 11.80 | 13.70 |
| | | 45 | 8.10 | 10.40 | 12.80 |
| | 80°C | 5 | 10.07 | 12.90 | 15.80 |
| | | 10 | 9.70 | 12.20 | 15.40 |
| | | 25 | 8.60 | 10.70 | 13.20 |
| | | 40 | 7.80 | 9.80 | 11.60 |
| | 85°C | 5 | 9.94 | 12.51 | 15.78 |
| | | 10 | 9.50 | 11.90 | 15.30 |
| | | 25 | 7.80 | 9.70 | 13.20 |
| | | 35 | 7.10 | 8.90 | 11.20 |
| 90°C | 5 | 9.37 | 11.80 | 14.90 | |
| | 10 | 8.40 | 10.30 | 12.90 | |
| | 25 | 6.60 | 8.40 | 10.48 | |
| | 30 | 6.30 | 7.63 | 8.45 | |
| Constant operating temperature 70°C including 90 days per year at >> | 75°C | 5 | 11.50 | 13.95 | 14.73 |
| | | 10 | 10.80 | 13.40 | 13.80 |
| | | 25 | 9.20 | 11.50 | 12.40 |
| | | 45 | 7.00 | 8.90 | 11.20 |
| | 80°C | 5 | 10.14 | 12.75 | 16.10 |
| | | 10 | 9.81 | 12.33 | 15.50 |
| | | 25 | 8.02 | 10.06 | 12.71 |
| | | 37.5 | 7.27 | 9.15 | 11.52 |
| | 85°C | 5 | 9.54 | 12.00 | 15.15 |
| | | 10 | 9.00 | 11.29 | 14.20 |
| | | 25 | 7.63 | 9.62 | 12.16 |
| | | 32.5 | 7.20 | 9.07 | 11.40 |
| 90°C | 5 | 8.60 | 10.79 | 11.30 | |
| | 10 | 7.41 | 9.30 | 10.45 | |
| | 25 | 5.73 | 7.35 | 9.22 | |

• SDR= Standard Dimension Ratio (diameter/wall thickness ratio)
SDR=d/s (S=Pipe series index from ISO 4065)



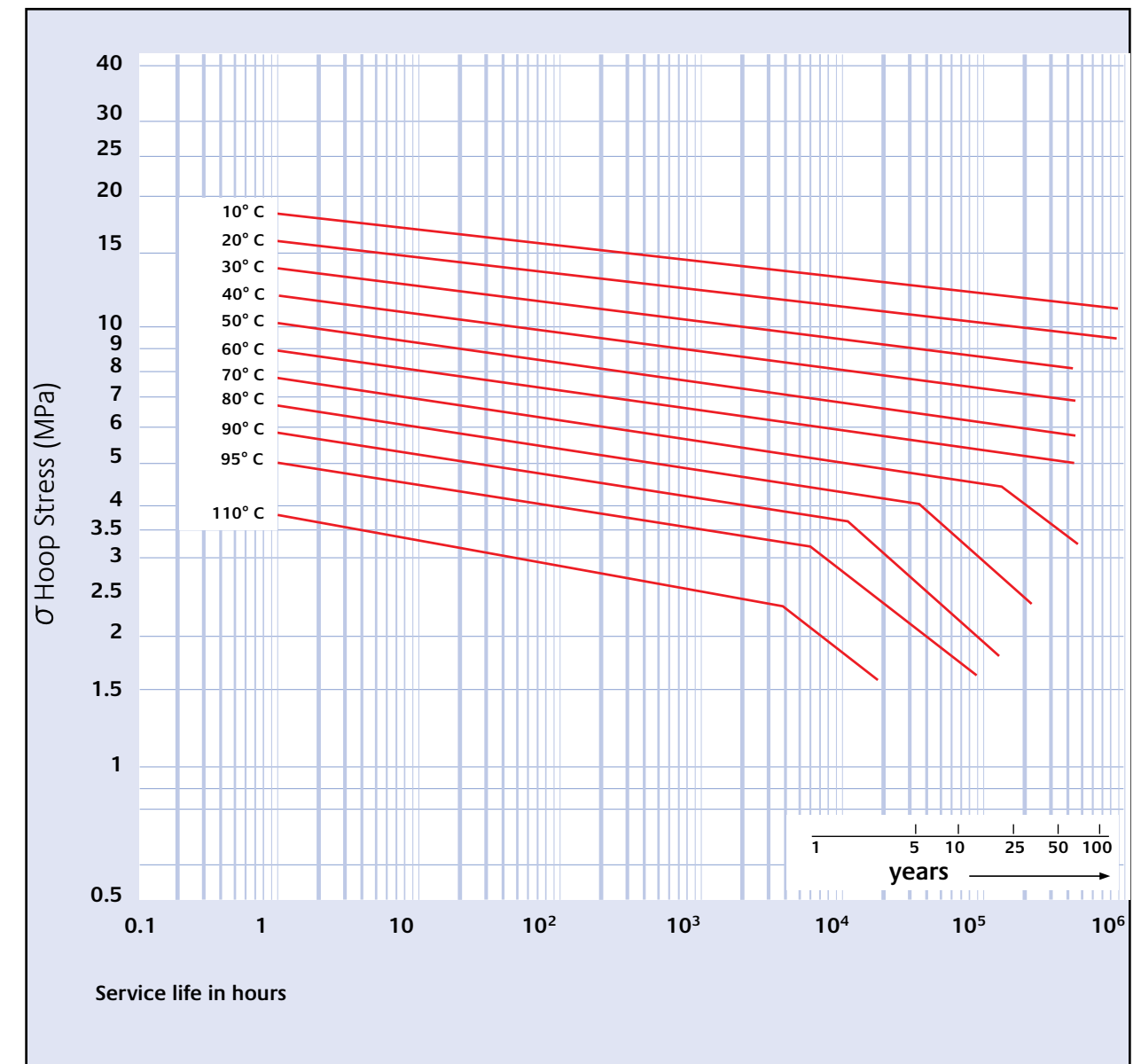
Hydrostatic Pressure Performance

To plot the hydrostatic pressure performance graph independently of dimensions, the hoop stress (σ) is calculated according to the formula:

$$\sigma = \frac{p(de-e)}{2e}$$

For this calculation, p= internal pressure, de= the external pipe diameter and e= the wall thickness of the pipe. Predictions for long-term life expectancy are extrapolated according to Arrhenius law.

Eurotherm PP-R Pipe System has the feature of resisting cracking under stress as the following regression curves demonstrate:



Chemical Resistance of Polypropylene random Copolymer (PP-R)

PP-R has high resistance to a large number of aggressive substances, and therefore particularly suitable for many special applications. They are highly resistant to attack by such chemicals as acids, alkalis, alcohols, low-boiling hydrocarbon solvents, and many inorganic chemicals. At room temperature, PP copolymers are essentially insoluble in most organic solvents. Also, they are not susceptible to environmental stress cracking failures when exposed to soaps, soap solutions, wetting agents, and alcohols, as are many other polymers. Contact with some chemicals particularly liquid hydrocarbons, chlorinated organic compounds, and strong oxidizing acids can cause surface

crazing or swelling. Generally, non-polar compounds are absorbed more easily by PP than are polar chemicals. The Table below provides resistance of PP-R to various chemicals. The table refers to the raw materials only and is not subject outside mechanical stresses and atmospheric pressures. For transportation of combustible fluids, please comply with any legal regulations in force

R = Resistant
LR = Limited Resistance
NR = Not Recommended
ND = No Data

| CHEMICALS | RESISTANCE | | |
|--------------------------|------------|-------|--------|
| | 20 °C | 60 °C | 100 °C |
| Acetaldehyde | R | ND | NR |
| Acetic acid (10%) | R | R | ND |
| Acetic acid (glac./anh.) | R | R | ND |
| Acetic anhydride | R | R | NR |
| Aceto-acetic ester | R | R | R |
| Acetone | R | R | ND |
| Other ketones | R | NR | NR |
| Acetonitrile | R | R | ND |
| Acetylene | ND | ND | ND |
| Acetyl salicylic acid | LR | LR | LR |
| Acid fumes | R | R | NR |
| Alcohols | R | R | ND |
| Aliphatic esters | R | NR | NR |
| Alkyl chlorides | NR | NR | NR |
| Alum | R | R | R |
| Aluminium chloride | R | R | R |
| Aluminium sulphate | R | R | R |
| Ammonia, anhydrous | R | R | R |
| Ammonia, aqueous | R | R | R |
| Ammonium chloride | R | R | R |
| Amyl acetate | R | NR | NR |
| Aniline | R | R | R |
| Antimony trichloride | R | R | ND |
| Aqua regia | R | NR | NR |
| Aromatic solvents | R | NR | NR |
| Ascorbic acid | ND | ND | ND |
| Beer | R | R | ND |
| Benzaldehyde | R | R | NR |
| Benzene | NR | NR | NR |
| Benzoic acid | R | R | ND |
| Benzoyl peroxide | NR | NR | NR |
| Boric acid | R | R | R |
| Brines, saturated | R | R | ND |
| Bromide (K) solution | R | R | ND |
| Bromine | NR | NR | NR |
| Bromine liquid, tech. | ND | ND | ND |

| | | | |
|----------------------------------|----|----|----|
| Bromine water, saturated aqueous | ND | ND | ND |
| Butyl acetate | P | NR | NR |
| Calcium chloride | R | R | R |
| Carbon disulphide | NR | NR | NR |
| Carbonic acid | R | R | ND |
| Carbon tetrachloride | NR | NR | NR |
| Caustic soda & potash | R | R | R |
| Cellulose paint | NR | NR | NR |
| Chlorates of Na, K, Ba | R | R | ND |
| Chlorine, dry | NR | NR | NR |
| Chlorine, wet | NR | NR | NR |
| Chlorides of Na, K, Ba | R | R | R |
| Chloroacetic acid | R | R | ND |
| Chlorobenzene | NR | NR | NR |
| Chloroform | NR | NR | NR |
| Chlorosulphonic acid | NR | NR | NR |
| Chromic acid (80%) | R | ND | ND |
| Citric acid | R | R | ND |
| Copper salts (most) | R | R | ND |
| Cresylic acids (50%) | ND | ND | ND |
| Cyclohexane | NR | NR | NR |
| Detergents, synthetic | R | R | R |
| Emulsifiers, concentrated | R | R | ND |
| Esters | R | NR | NR |
| Ether | NR | NR | NR |
| Fatty acids (>C6) | R | R | ND |
| Ferric chloride | R | R | R |
| Ferrous sulphate | R | R | R |
| Fluorinated refrigerants | NR | NR | NR |
| Fluorine, dry | NR | NR | NR |
| Fluorine, wet | NR | NR | NR |
| Fluorosilicic acid | R | R | ND |
| Formaldehyde (40%) | R | R | ND |
| Formic acid | R | ND | ND |
| Fruit juices | R | R | ND |
| Gelatine | R | R | ND |
| Glycerin | R | R | R |
| Glycols | R | R | ND |
| Glycol, ethylene | R | R | R |

| | | | |
|--|----|----|----|
| Glycolic acid | R | R | R |
| Hexamethylene diamine | NR | NR | NR |
| Hexamine | ND | ND | ND |
| Hydrazine | R | ND | ND |
| Hydrobromic acid (50%) | R | R | R |
| Hydrochloric acid (10%) | R | R | R |
| Hydrochloric acid (conc.) | R | R | NR |
| Hydrocyanic acid R R ND | R | R | ND |
| Hydrofluoric acid (40%) | R | ND | ND |
| Hydrofluoric acid (75%) | R | ND | NR |
| Hydrogen peroxide (30%) | NR | NR | NR |
| Hydrogen peroxide (30 - 90%) | NR | NR | NR |
| Hydrogen sulphide | R | R | ND |
| Hypochlorites | R | R | R |
| Hypochlorites (Na 12-14%) | R | R | R |
| Iso-butyl-acetate | R | NR | NR |
| Lactic acid (90%) | R | R | ND |
| Lead acetate | R | R | ND |
| Lead perchlorate | NR | NR | NR |
| Lime (CaO) | R | R | R |
| Maleic acid | R | R | R |
| Manganate, potassium (K) | R | R | ND |
| Meat juices | R | R | ND |
| Mercuric chloride | R | R | ND |
| Mercury | R | R | R |
| Methanol | R | R | R |
| Methylene chloride | NR | NR | NR |
| Milk products | R | R | R |
| Moist air | R | R | R |
| Molasses | R | R | ND |
| Monoethanolamine | LR | LR | LR |
| Naptha | R | ND | ND |
| Napthalene | R | R | R |
| Nickel salts | R | R | R |
| Nitrates of Na, K and NH3 | R | R | ND |
| Nitric acid (<25%) | R | R | R |
| Nitric acid (50%) | NR | NR | NR |
| Nitric acid (90%) | NR | NR | NR |
| Nitric acid (fuming) | NR | NR | NR |
| Nitrite (Na) | NR | NR | NR |
| Nitrobenzene | LR | LR | LR |
| Oils, diesel | R | NR | NR |
| Oils, essential | R | R | R |
| Oils, lubricating + aromatic additives | R | NR | NR |
| Oils, mineral | R | NR | NR |
| Oils, vegetable and animal | R | R | NR |
| Oxalic acid | R | R | NR |
| Ozone | ND | ND | ND |
| Paraffin wax | R | R | ND |
| Perchloric acid | NR | NR | NR |
| Petroleum spirits | NR | NR | NR |
| Phenol | R | R | ND |
| Phosphoric acid (20%) | R | R | R |
| Phosphoric acid (50%) | R | R | ND |
| Phosphoric acid (95%) | R | R | ND |
| Phosphorous chlorides | R | ND | ND |

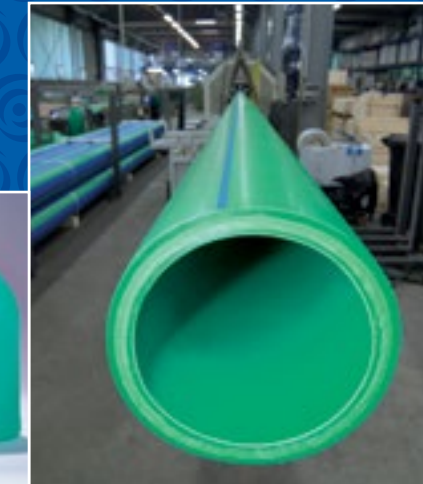
| | | | |
|---------------------------|----|----|----|
| Phosphorous pentoxide | R | R | ND |
| Phthalic acid | R | R | ND |
| Picric acid | R | R | ND |
| Pyridine | R | ND | ND |
| Salicyl aldehyde | ND | ND | ND |
| Sea water | R | R | R |
| Silicic acid | R | R | ND |
| Silicone fluids | R | R | ND |
| Silver nitrate | R | R | ND |
| Sodium carbonate | R | R | ND |
| Sodium peroxide | ND | ND | ND |
| Sodium silicate | R | R | R |
| Sodium sulphide | R | R | R |
| Stannic chloride | R | R | R |
| Starch | R | R | R |
| Sugar, syrups & jams | R | R | ND |
| Sulphamic acid | R | R | ND |
| Sulphates (Na, K, Mg, Ca) | R | R | NR |
| Sulphites | R | R | ND |
| Sulphonic acids | R | R | ND |
| Sulphur | R | R | NR |
| Sulphur dioxide, dry | R | R | NR |
| Sulphur dioxide, wet | R | R | ND |
| Sulphur dioxide (96%) | R | R | ND |
| Sulphur trioxide | ND | ND | ND |
| Sulphuric acid (<50%) | R | R | NR |
| Sulphuric acid (70%) | R | NR | NR |
| Sulphuric acid (95%) | R | NR | NR |
| Sulphuric acid, fuming | NR | NR | NR |
| Sulphur chlorides | ND | ND | ND |
| Tallow | R | R | ND |
| Tannic acid (10%) | R | R | ND |
| Tartaric acid | R | R | ND |
| Trichlorethylene | NR | NR | NR |
| Urea (30%) | R | R | NR |
| Vinegar | R | R | ND |
| Water, distilled. | R | R | R |
| Water, soft | R | R | R |
| Water, hard | R | R | R |
| Wetting agents (<5%) | R | R | R |
| Yeast | R | R | ND |
| Zinc chloride | R | R | ND |



Eurotherm polypropylene random co polymer (PP-R) pressure piping systems are engineered for use in potable water, hydronic heating & Cooling and Industrial application

Eurotherm PP-R piping systems are:

- Durable (engineered for a service life of 50+ years)
- Leak-proof (heat-fused connections leave no leak path)
- Fast (can provide over 50% on labor times versus other materials)
- Safe (installation requires no glues, solder, or open flames)
- Environmentally friendly (fully recyclable with no BPA's, dioxins, or VOCs)



Quality Assurance

The quality process is an integral part of everything we do. Our Quality action teams are continually working to improve products, process and procedure to better meet customer requirements.

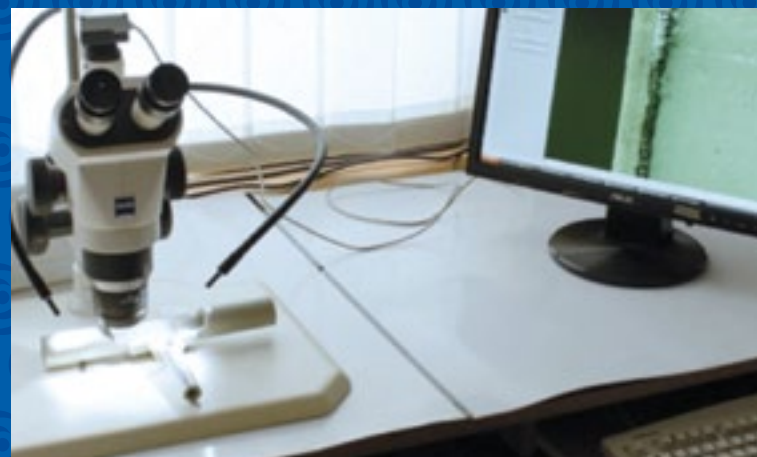
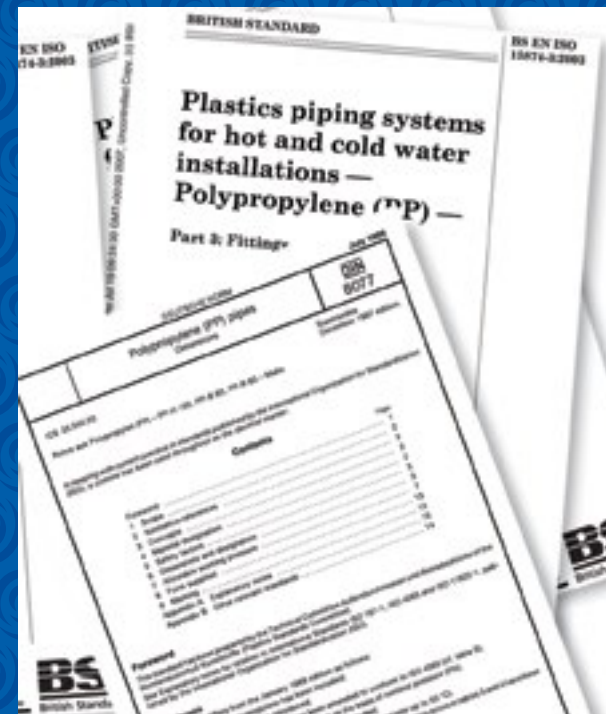
We have learned and adapted many of the best practices of successful quality management systems to create our own quality systems. For us there is no end for quality.

Quality is engineered into Eurotherm products during the entire manufacturing process. The three phases of quality control involve the incoming raw material, the pipe & fittings production and the finished product. The combination of all three areas ensures that the final product will fulfill the requirements and meet the desired specifications. Eurotherm pipes and fittings are subjected to the following extensive test programs:-

1. Material Characterization Tests
2. Melt Flow Rate Testing
3. Dimensional Tests
4. Surface inspection
5. Impact Strength Testing
6. Long term Hydrostatic Pressure Testing
7. Ageing Resistance Testing
8. Thermal Circulation Testing
9. Longitudinal Reversion Testing
10. Hygienic Inspection

Standard applied in production:

- DIN 8077 Polypropylene (PP) Pipes, Dimensions
- DIN 8078 Polypropylene (PP) Pipes, General Quality Requirements and Testing
- DIN 16962 Pipe Joint Assemblies and Fittings for Polypropylene Pressure Pipes
- EN ISO 15874 Plastic pipe systems for hot and cold water Installation.



Fusion Welding Process

The process of jointing Eurotherm pipes and fittings is very simple and results in inseparable water tight joints. It is carried out using a simple welding machine that melts the internal surface of the fitting and the external surface of the pipe, so that the material of the pipe and the fitting will be welded together.

The following steps describe the steps of the welding process.

1. Prepare the welding machine by fitting it with the welding dies of the diameters to be welded. Connect the plug to the 220V power supply socket and wait until the green light on the machine goes out indicating the welding machine has reached the working temperature (260 °C).
2. Cut the pipe at right angles to the pipe axis using suitable pipe cutter.

3. Mark the welding depth on the pipe using suitable marker.
4. Insert the end of the pipe without turning into the heating sleeve up to the marked welding depth and at the same time slide the fitting without turning into the other side of the heating tool up to the stop. It is essential to observe the mentioned heating times (refer to the below table)
5. Leave the pipe and fitting into the heating tool until the heating time is elapsed.
6. At the end of the heating time, remove the pipe and fitting from the heating tool and push them immediately against each other up to the mark indicating the welding depth. At this stage the depth mark will be covered with the welding bead. During this process, do not rotate the pipe and fitting relative to each other.
7. Allow the joint to cool fully before using.



Welding Depth, Heating, Welding and Cooling Time

| Pipe Diameter (mm) | Welding Depth (mm) | Heating Time(sec.) | Welding Time (sec.) | Cooling Time (min.) |
|--------------------|--------------------|--------------------|---------------------|---------------------|
| 20 | 14.0 | 5 | 4 | 2 |
| 25 | 15.0 | 7 | 4 | 2 |
| 32 | 16.5 | 8 | 6 | 4 |
| 40 | 18.0 | 12 | 6 | 4 |
| 50 | 20.0 | 24 | 8 | 6 |
| 63 | 24.0 | 24 | 8 | 6 |
| 75 | 26.0 | 30 | 8 | 8 |
| 90 | 29.0 | 40 | 8 | 8 |
| 110 | 32.5 | 50 | 10 | 8 |

Note: Heating time starts when both pipe and fitting are pushed in to correct depth. Welding time begins when joints are connected. Cooling time is the time taken for the joint to be completely cured. Never reduce cooling time by pouring water or by other means



General Guidelines

1. Check the quality of pipes and fittings at the site before use by ascertaining that they confirm to the specifications given by us.
 2. Check the outer and inner dia as per the catalogue to identify the class of pipes.
 3. Defective pipes shall be rejected and intimated to us.
 4. All fittings are categorized under Pn-25 and hence no assortment is required.
 5. To reduce from a large diameter pipe to a smaller diameter pipe, a socket must be used in conjunction with a reducer. For example, to reduce from pipe diameter of 50 mm to 25 mm, a socket 50 mm must be attached first to the 50 mm pipe followed by a reducer 50/25 mm and followed by the 25 mm pipe
 6. Eurotherm PP-R pipes and fittings are having sufficient UV stability in order to protect them from UV rays. However it is not advisable to use this pipes & fittings under direct sunlight continuously. For outdoor installation of pipelines it is recommended to make a acrylic paint coating on pipes or protect it from direct sunlight by giving shelter covering or installing induct.
 7. Possible Linear Thermal expansion/contraction needs to be taken care during designing and installing.
8. Stressing of pipes can be avoided by providing flexible free length and proper supporting.
 8. Provide insulation for centralized heating system and chilled water system.
 9. Eurotherm pipes should never come in to contact with sharp edges which may damage and cause fracture or cuts.
 10. Eurotherm pipes should not be accessed near fire as PP-R pipes are self inflammable.
 11. In case soil contains high content of sulphates and chlorides special precaution to be taken before laying to prevent any corrosion.
 12. Care should be taken to lay Eurotherm pipes always above the sewage line, preferably by concrete encasing to separate both at least by 1 meter.
 13. Installation of water meters is possible by using the welded part of male adaptor into the water meter junction.
 14. Service pipe line can be connected to G.I or cast iron with help of male or female adaptors or flanges.

Contrast of Property for Some Pipe System

| Pipe Style / Property | G.I Pipe | Copper Pipe | UPVC Pipe | CPVC Pipe | Pex-Al-Pex Pipe | PB Pipe | Eurotherm PP-R Pipe |
|--------------------------------|------------|-------------|-----------|-----------|-----------------|-----------|---------------------|
| Service Life | 5-10 Years | 25 Years | 25 Years | 25 Years | 50 Years | 50 Years | 50 Years |
| Resistance to High Temperature | Good | Very Good | Bad | Average | Very Good | Good | Very Good |
| Hygienic Property | Bad | Common | Bad | Common | Very Good | Very Good | Very Good |
| Recyclable and No Pollution | No | No | No | No | Yes | Yes | Yes |
| Pipe Furring | Yes | Yes | No | No | No | No | No |
| Corrosion Resistance | Bad | Bad | Average | Average | Very Good | Very Good | Very Good |
| Installation | Difficult | Difficult | Easy | Easy | Easy | Easy | Easy |
| Price | Average | High | Low | Average | High | High | Average |
| Reliability | Common | Good | Common | Common | Good | Common | Very Good |
| Self Insulation | Nil | Average | Poor | Poor | Good | Good | Very Good |
| Affects of UV Light | Affects | Does Not | Affects | Affects | Does Not | Does Not | Does Not |

PP-R Environmental Benefits at a Glance

| | PP-R | Stainless Steel | Copper | Steel | PEX | CPVC |
|---|------|-----------------|--------|-------|-----|------|
| Hygienic purity | | | | | | |
| Zero impact on taste | ✓ | ○ | ○ | - | ○ | ○ |
| Zero impact on smell | ✓ | ○ | ○ | - | - | ○ |
| Opaque, microorganism free | ✓ | ✓ | ✓ | ✓ | ○ | ○ |
| No leaching into water | ✓ | ✓ | ○ | - | ✓ | ○ |
| No leaching through pipe wall | ○ | ✓ | ✓ | ✓ | - | ○ |
| Longevity and performance | | | | | | |
| Resistant to abrasion and corrosion | ✓ | ✓ | ○ | - | ✓ | ✓ |
| Resistant to chemical breakdown | ✓ | ✓ | ○ | - | ✓ | - |
| Resistant to fitting leaks and failures | ✓ | ○ | ○ | ○ | - | - |
| Strong structural integrity | ✓ | ✓ | ✓ | ✓ | - | - |
| Resistant to scaling and electrolysis | ✓ | ○ | - | - | ✓ | ✓ |
| Tolerant to freezing | ✓ | - | - | - | ✓ | - |
| Engineered for 50 year life cycle | ✓ | - | - | - | - | - |
| Low production impact | | | | | | |
| Does not require extraction | ✓ | - | - | - | - | - |
| Does not require steel or copper mills | ✓ | - | - | - | ○ | ✓ |
| Does not require chlorine | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| Toxin-free material | | | | | | |
| No lead | ✓ | ○ | - | ○ | ○ | - |
| No copper | ✓ | ✓ | - | ✓ | ○ | ✓ |
| No iron | ✓ | - | ✓ | - | ✓ | ✓ |
| No PVC | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| No dioxins | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| No BPA | ✓ | ✓ | ✓ | ✓ | ○ | ○ |
| No VOCs | ✓ | ○ | ○ | ○ | ✓ | - |
| Minimum foreign materials | | | | | | |
| No toxic glues or solders | ✓ | ✓ | ○ | ✓ | ✓ | - |
| No gaskets | ✓ | ○ | ○ | ○ | ○ | ○ |
| No corrosion inhibitors for pipe | ✓ | ○ | ○ | - | ✓ | ✓ |
| Environmental responsibility | | | | | | |
| Recyclable | ✓ | ✓ | ✓ | ✓ | - | - |
| No hazardous waste | ✓ | ✓ | ✓ | ✓ | ✓ | - |
| Safe combustion by-products | ✓ | ✓ | ✓ | ✓ | ✓ | - |

✓ Excellent ○ Sometimes - Not Recommended

Product Range: Pipe

Eurotherm Pipe PP-R PN-10 / SDR 11 / Pipe Series (S) 5 According To DIN 8077/8078

| Dimension | Outer Diameter (OD)mm | Wall Thickness (S) | Internal Diameter (ID)mm | Water Content l/mtr | Kg/Mtr |
|-----------|-----------------------|--------------------|--------------------------|---------------------|--------|
| 20 mm | 20 | 1.9 | 16.2 | 0.206 | 0.107 |
| 25 mm | 25 | 2.3 | 20.4 | 0.327 | 0.164 |
| 32 mm | 32 | 2.9 | 26.2 | 0.531 | 0.261 |
| 40 mm | 40 | 3.7 | 32.6 | 0.834 | 0.412 |
| 50 mm | 50 | 4.6 | 40.8 | 1.307 | 0.638 |
| 63 mm | 63 | 5.8 | 51.4 | 2.075 | 1.010 |
| 75 mm | 75 | 6.8 | 61.4 | 2.941 | 1.410 |
| 90 mm | 90 | 8.2 | 73.6 | 4.254 | 2.030 |
| 110 mm | 110 | 10.0 | 90.0 | 6.362 | 3.010 |
| 160 mm | 160 | 14.6 | 130.8 | 13.430 | 6.380 |

Eurotherm Pipe PP-R PN-16 / SDR 7.4 / Pipe Series (S) 3.2 According To DIN 8077/8078

| Dimension | Outer Diameter (OD)mm | Wall Thickness (S) | Internal Diameter (ID)mm | Water Content l/mtr | Kg/Mtr |
|-----------|-----------------------|--------------------|--------------------------|---------------------|--------|
| 20 mm | 20 | 2.8 | 14.4 | 0.163 | 0.148 |
| 25 mm | 25 | 3.5 | 18.0 | 0.254 | 0.230 |
| 32 mm | 32 | 4.4 | 23.2 | 0.415 | 0.370 |
| 40 mm | 40 | 5.5 | 29.0 | 0.651 | 0.575 |
| 50 mm | 50 | 6.9 | 36.2 | 1.029 | 0.896 |
| 63 mm | 63 | 8.6 | 45.8 | 1.633 | 1.410 |
| 75 mm | 75 | 10.3 | 54.4 | 2.307 | 2.010 |
| 90 mm | 90 | 12.3 | 65.4 | 3.318 | 2.870 |
| 110 mm | 110 | 15.1 | 79.8 | 5.674 | 4.300 |
| 160 mm | 160 | 21.9 | 116.2 | 11.169 | 9.040 |

Eurotherm Pipe PP-R PN-20 / SDR 6 / Pipe Series (S) 2.5 According To DIN 8077/8078

| Dimension | Outer Diameter (OD)mm | Wall Thickness (S) | Internal Diameter (ID)mm | Water Content l/mtr | Kg/Mtr |
|-----------|-----------------------|--------------------|--------------------------|---------------------|--------|
| 20 mm | 20 | 3.4 | 13.2 | 0.137 | 0.172 |
| 25 mm | 25 | 4.2 | 16.6 | 0.216 | 0.266 |
| 32 mm | 32 | 5.4 | 21.2 | 0.353 | 0.434 |
| 40 mm | 40 | 6.7 | 26.6 | 0.556 | 0.671 |
| 50 mm | 50 | 8.3 | 33.4 | 0.866 | 1.040 |
| 63 mm | 63 | 10.5 | 42.0 | 1.385 | 1.650 |
| 75 mm | 75 | 12.5 | 50.0 | 1.963 | 2.340 |
| 90 mm | 90 | 15.0 | 60.0 | 2.827 | 3.360 |
| 110 mm | 110 | 18.3 | 73.4 | 4.208 | 5.010 |
| 160 mm | 160 | 26.6 | 106.8 | 9.729 | 10.600 |


Eurotherm Pipe PP-R PN-25 / SDR 5 / Pipe Series (S) 2 According To DIN 8077/8078

| Dimension | Outer Diameter (OD)mm | Wall Thickness (S) | Internal Diameter (ID)mm | Water Content l/mtr | Kg/Mtr |
|-----------|-----------------------|--------------------|--------------------------|---------------------|--------|
| 20 mm | 20 | 4.1 | 11.8 | 0.111 | 0.198 |
| 25 mm | 25 | 5.1 | 14.8 | 0.178 | 0.307 |
| 32 mm | 32 | 6.5 | 19.0 | 0.291 | 0.498 |
| 40 mm | 40 | 8.1 | 23.8 | 0.461 | 0.775 |
| 50 mm | 50 | 10.1 | 29.8 | 0.703 | 1.210 |
| 63 mm | 63 | 12.7 | 37.6 | 1.137 | 1.910 |
| 75 mm | 75 | 15.1 | 44.8 | 1.619 | 2.700 |
| 90 mm | 90 | 18.1 | 53.8 | 2.336 | 3.880 |
| 110 mm | 110 | 22.1 | 65.8 | 3.186 | 5.780 |
| 160 mm | 160 | 32.1 | 95.8 | 7.497 | 12.200 |

SOCKET

| Items | Size |
|---|-------|
|  | 20mm |
| | 25mm |
| | 32mm |
| | 40mm |
| | 50mm |
| | 63mm |
| | 75mm |
| | 90mm |
| | 110mm |
| | 160mm |


90° ELBOW

| Items | Size |
|---|--------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |
| | 75 mm |
| | 90 mm |
| | 110 mm |
| | 160 mm |

45° ELBOW

| Items | Size |
|--|--------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |
| | 75 mm |
| | 90 mm |
| | 110 mm |
| | 160 mm |


EQUAL TEE

| Items | Size |
|--|--------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |
| | 75 mm |
| | 90 mm |
| | 110 mm |
| | 160 mm |

END CAP

| Items | Size |
|---|-------|
|  | 20mm |
| | 25mm |
| | 32mm |
| | 40mm |
| | 50mm |
| | 63mm |
| | 75mm |
| | 90mm |
| | 110mm |
| | 160mm |

90° REDUCING ELBOW

| Items | Size |
|---|------------|
|  | 25 x 20 mm |
| | 32 x 20 mm |
| | 32 x 25 mm |
| | 40 x 25 mm |
| | 40 x 32 mm |
| | 50 x 25 mm |
| | 50 x 32 mm |
| | 50 x 40 mm |

PP - R PLASTIC UNION

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |


CROSS

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |

REDUCING SOCKET

| Items | Size |
|---|--------------|
|  | 25 x 20 mm |
| | 32 x 20 mm |
| | 32 x 25 mm |
| | 40 x 20 mm |
| | 40 x 25 mm |
| | 40 x 32 mm |
| | 50 x 20 mm |
| | 50 x 25 mm |
| | 50 x 32 mm |
| | 50 x 40 mm |
| | 63 x 20 mm |
| | 63 x 25 mm |
| | 63 x 32 mm |
| | 63 x 40 mm |
| | 63 x 50 mm |
| | 75 x 32 mm |
| | 75 x 40 mm |
| | 75 x 50 mm |
| | 75 x 63 mm |
| | 90 x 32 mm |
| | 90 x 40 mm |
| | 90 x 50 mm |
| | 90 x 63 mm |
| | 90 x 75 mm |
| | 110 x 50 mm |
| | 110 x 63 mm |
| | 110 x 75 mm |
| | 110 x 90 mm |
| | 160 x 110 mm |


BYPASS BEND

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |

BRIDGE WITH SOCKET

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |

PIPE PLUG

| Items | Size |
|---|---------|
|  | 1/2" |
| | 3/4" |
| | 1" |
| | 1. 1/4" |


REDUCING TEE

| Items | Size |
|--|-------------------|
|  | 25 x 20 x 25 mm |
| | 32 x 20 x 32 mm |
| | 32 x 25 x 32 mm |
| | 40 x 20 x 40 mm |
| | 40 x 25 x 40 mm |
| | 40 x 32 x 40 mm |
| | 50 x 20 x 50 mm |
| | 50 x 25 x 50 mm |
| | 50 x 32 x 50 mm |
| | 50 x 40 x 50 mm |
| | 63 x 20 x 63 mm |
| | 63 x 25 x 63 mm |
| | 63 x 32 x 63 mm |
| | 63 x 40 x 63 mm |
| | 63 x 50 x 63 mm |
| | 75 x 32 x 75 mm |
| | 75 x 40 x 75 mm |
| | 75 x 50 x 75 mm |
| | 75 x 63 x 75 mm |
| | 90 x 32 x 90 mm |
| | 90 x 40 x 90 mm |
| | 90 x 50 x 90 mm |
| | 90 x 63 x 90 mm |
| | 90 x 75 x 90 mm |
| | 110 x 50 x 110 mm |
| | 110 x 63 x 110 mm |
| | 110 x 75 x 110 mm |
| | 110 x 90 x 110 mm |
| | 160x110x160 mm |

PIPE CLIP

| Items | Size |
|--|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |

PP-R FLANGE ADAPTER SET

| Items | Size |
|--|--------|
|  | 40 mm |
| | 50 mm |
| | 63 mm |
| | 75 mm |
| | 90 mm |
| | 110 mm |
| | 160 mm |

PP-R BRASS UNION

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |


MALE THREADED ADAPTOR

| Items | Size |
|---|----------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1/2" |
| | 32 mm x 3/4" |
| | 32 mm x 1" |
| | 40 mm x 1 1/4" |
| | 50 mm x 1 1/2" |
| | 63 mm x 2" |
| | 75 mm x 2 1/2" |
| | 90 mm x 3" |
| | 110 mm x 4" |


FEMALE THREADED ADAPTOR

| Items | Size |
|---|----------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1/2" |
| | 32 mm x 3/4" |
| | 32 mm x 1" |
| | 40 mm x 1 1/4" |
| | 50 mm x 1 1/2" |
| | 63 mm x 2" |
| | 75 mm x 2 1/2" |
| | 90 mm x 3" |
| | 110 mm x 4" |

MALE THREADED UNION

| Items | Size |
|---|----------------|
|  | 20 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1" |
| | 40 mm x 1 1/4" |
| | 50 mm x 1 1/2" |
| | 63 mm x 2" |


MALE THREADED TEE

| Items | Size |
|---|--------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1/2" |
| | 32 mm x 3/4" |
| | 32 mm x 1" |


FEMALE THREADED TEE

| Items | Size |
|---|----------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1/2" |
| | 32 mm x 3/4" |
| | 32 mm x 1" |
| | 40 mm x 1 1/4" |


90° FEMALE THREADED ELBOW

| Items | Size |
|--|----------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1/2" |
| | 32 mm x 3/4" |
| | 32 mm x 1" |
| | 40 mm x 1 1/4" |

90° MALE THREADED ELBOW

| Items | Size |
|---|--------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1/2" |
| | 32 mm x 3/4" |
| | 32 mm x 1" |


FEMALE THREADED UNION

| Items | Size |
|---|----------------|
|  | 20 mm x 1/2" |
| | 25 mm x 3/4" |
| | 32 mm x 1" |
| | 40 mm x 1 1/4" |
| | 50 mm x 1 1/2" |
| | 63 mm x 2" |


MALE & FEMALE THREADED ELBOW WITH DISK

| Items | Size |
|---|--------------|
|  | 20 mm x 1/2" |
| | 25 mm x 1/2" |
| | 25 mm x 3/4" |

PLASTIC BALL VALVE - BV1

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |

STOP VALVE

| Items | Size |
|--|--------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |
| | 75 mm |
| | 90 mm |
| | 110 mm |

WELDING DEVICE

| Items | Size |
|---|-------------|
|  | 20 - 32 mm |
| | 40 - 75 mm |
| | 75 - 110 mm |
| | 160 mm |


WELDING TOOLS KIT

| Items | Size |
|---|------------|
|  | 20 - 32 mm |
| | 40 - 75mm |

DOUBLE UNION BALL VALVE

| Items | Size |
|--|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |

PLASTIC BALL VALVE - BV2

| Items | Size |
|--|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |
| | 40 mm |
| | 50 mm |
| | 63 mm |

CONCEALED STOP VALVE

| Items | Size |
|---|-------|
|  | 20 mm |
| | 25 mm |
| | 32 mm |

HOLE REPAIR TOOL & BAR

| Items | Size |
|--|------------|
|  | 9 mm |
| | 11 mm |
| | BAR |
| | 9 x 11 mm |

PIPE CUTTER

| Items | Size |
|--|-------------|
|  | 20 - 40 mm |
| | 20 - 63 mm |
| | 75 - 110 mm |

AUTOMATIC WELDING DIVICE

| Items | Size |
|--|-------------|
|  | 75 - 160 mm |

Stamp of Warranty

Eurotherm hereby warrants that all its pipes and fittings are free from any manufacturing defects and it adheres to International quality standards. In the event of any defect, the company shall stand to replace such materials if the complaint is bought to the notice. This warranty does not apply to the damage caused during transportation, rough handling, abnormal use or poor workmanship

50 YEARS GUARANTEE
For Operational Life For Leak Proof Joints

Series of horizontal dashed lines for notes.