

Plastic Pressure Systems



Plastic Pressure Systems – EFFTM2 Technical Manual



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Technical Manual

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EFFAST Technical Manual

Effast from Polypipe is a well-established brand name that is recognised throughout both the industrial process market and construction industries for its market-leading range of thermoplastic pipework systems suitable for use within industrial applications. The company now provides these components to customers all over the world and leads the way in the research and development of advanced new solutions that satisfy the specific needs of the market.

Polypipe, with its large UK based manufacturing capabilities, has developed Effast's comprehensive product portfolio such that it now offers a proven and effective solution to virtually any requirement. No matter what the project, the Effast range can offer the perfect combination of pressure pipe fittings, ball, butterfly, diaphragm and actuated valves, compression joints, adaptors and other fittings. Normally available in both metric and imperial dimensions these products are suited to many different commercial applications in such areas as food and beverage processing, chemical manufacture, water treatment and agriculture.

Outstanding performance and reliability have come to represent the hallmarks by which Polypipe's Effast products are recognised and with these products also carrying BSI Kite Mark accreditation and conforming to various other European standards they can be specified with complete confidence.

Dedicated to supporting its customers at every stage the company also complements its products and systems with a full technical information and support service, while a nationwide distribution network means that products are readily available, even when needed next day.

For further information please see our contact details on the back cover of this brochure.



PVC: KM60041
ABS: KM60042

WRAS
APPROVED
PRODUCT

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Effast product code guide

AFARCA032B

1

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Material

- 1** A = ABS
B = Brush
C = Cleaner
E = Rubber
M = Metal
P = Polypropylene
R = PVC

Type of Fitting

- 2** B = Ball Valve
F = Fitting
P = Pipe/Fitting Part

Type of Fitting

- 3** A = Imperial
B = Universal Metric/Imperial
C = Plain/Threaded Fittings
C = Class C Pipe
D = EPDM Seals
D = Class D Pipe
E = Class E Pipe
F = Threaded
I = Metric
O = O Ring/Cements/Cleaners
R = Metal Ring Fitting
V = Viton
10= 10 Bar Pipe
16= 16 Bar Pipe

Unique Product Code

- 4** Example RCA = Reducing Bush

Size Guide

- 5** 0160 = 16mm or $\frac{3}{8}$ "
0200 = 20mm or $\frac{1}{2}$ "
0250 = 25mm or $\frac{3}{4}$ "
0320 = 32mm or 1"
0400 = 40mm or $1\frac{1}{4}$ "
0500 = 50mm or $1\frac{1}{2}$ "
0630 = 63mm or 2"
0750 = 75mm or $2\frac{1}{2}$ "
0900 = 90mm or 3"
1100 = 110mm or 4"
1250 = 125mm
1400 = 140mm or 5"
1600 = 160mm or 6"
2000 = 200mm
2250 = 225mm or 8"
2500 = 250mm
3150 = 315mm

Size Guide Letter

- 6** A = 16mm or $\frac{3}{8}$ "
B = 20mm or $\frac{1}{2}$ "
C = 25mm or $\frac{3}{4}$ "
D = 32mm or 1"
E = 40mm or $1\frac{1}{4}$ "
F = 50mm or $1\frac{1}{2}$ "
G = 63mm or 2"
H = 75mm or $2\frac{1}{2}$ "
I = 90mm or 3"
L = 110mm or 4"
M = 125mm
N = 140mm or 5"
O = 160mm or 6"
P = 200mm
Q = 225mm or 8"
R = 315mm

Materials & Applications

	PVCu	Typical Applications
	Most Widely Used Plastic Material Large Choice of Fittings Excellent Chemical Resistance Rigid Construction	Industrial Process Systems Water Treatment and Chemical Dosing Food & Beverage Swimming Pools and Spas Cold Water Supply
	ABS	
	Wide Temperature Range High Impact Strength Abrasion Resistance Non Toxic	Chilled Water Boosted Cold Water Plant Rooms Chemical & Pharmaceutical
	Polypropylene	
	High Impact Strength Good Thermal and Electrical Insulator Excellent Chemical Resistance High Temperatures (<110°C)	Chemical Process Systems Metal Finishing Chemical Dosing
	PE100	
	Large Size Range High Impact Strength Excellent Abrasion Resistance UV Resistant Flexible	Above and Below Ground Water Supply Power Generation Attenuation

All Effast materials are suitable for a number of applications. The table below details common applications and the appropriate Effast materials for that situation

Applications Guide	ABS	PVCu	PP-H (pipe)	PE100
Acids and Alkalis	✓	✓	✓	✓
A/C and Refrigeration	✓		✓	✓
Biotechnology	✓	✓	✓	
Boosted Cold Water	✓	✓	✓	✓
Condensate	✓			
Chemical Dosing	✓	✓	✓	✓
Chemical Drainage			✓	✓
Chilled Water	✓		✓	✓
Compressed Air			✓	
De-Mineralised Water	✓	✓	✓	
Effluent Treatment	✓		✓	✓
Electro Plating	✓	✓	✓	
Film Processing	✓	✓	✓	
Food Processing & Beverages	✓			✓
Gas			✓	

Applications Guide	ABS	PVCu	PP-H (pipe)	PE100
Glycol Systems	✓			
Hot Cold Water		✓	✓	
Hot Corrosive Materials			✓	
Hot Water			✓	
Irrigation	✓	✓		✓
Marine / Brine	✓			✓
Pharmaceutical	✓	✓	✓	
Potable Water	✓	✓		✓
Pulp and Paper	✓		✓	
Semi Conductor	✓	✓	✓	
Slurries	✓			✓
Sprinklers			✓	
Swimming Pools	✓	✓		
Water & Sewage Treatments	✓	✓	✓	✓
Water Industry	✓	✓		✓

PVCu Pipe Systems

Unplasticised polyvinyl chloride (PVCu) is one of the most widely used thermoplastic materials for pipe installations.

Being odourless and tasteless it is suitable for conveying potable water and many food products. PVCu has excellent chemical resistance.

The good flow characteristics are the result of the smooth bore and has good resistance to abrasion. It is light in weight, easy to join together making PVCu a good alternative to the more traditional materials.

PVCu is resistant to most solutions of acids, alkalis, salts and solvents that can be mixed with water. Additional information in this respect can be obtained from our Technical Department.

Materials

Polypipe Effast PVCu is stabilised with compounds conforming to the EEC safety levels for vinyl chloride monomer (VCM) and the WRAS requirements for use with potable water.

Colour

PVCu products are recognised by their dark grey colour.

Chemical Resistance

The chemical resistance properties of PVCu are excellent: it is resistant to most solutions of acids, alkalis and salts and to solvents that can be mixed with water. PVCu is not resistant to aromatic and chlorinated hydrocarbons.

Standards

Individual products are in compliance with appropriate British Standards:

Fittings (inch size)	BS 4346 Part 1, BS EN 1452 Part 3
Pipe (inch size)	BS 3505/6, BS EN 1452 Part 2
Fittings (mm size)	DIN 8063, ISO 727, KIWA K504, UNI 7442/75
Pipe (mm size)	BS EN 1452 Part 2
Threaded fittings	BS 21, DIN 2999, ISO 7
Solvent cement	BS 4346 Part 3



WRAS Approval

Water Regulations Advisory Scheme. Approved product for potable water



Kite Mark Licence Fittings No. KM 60041

Imperial and Metric Sizes

The following notes may be helpful to those unfamiliar with the different ways of describing metric and imperial sizes when specifying pipe or fittings.

When specifying Imperial pipe fittings and other components reference is made to the nominal size of the pipe bore in inches and fractions of an inch.

Metric Systems are specified by reference to the outside diameter of the pipe expressed in millimetres.

As a general guide the following table gives a comparison between metric and imperial sizes up to 8 inches. It is important to understand that metric sizes are not simply inch sizes which have been converted into millimetres and called metric. The actual equivalents are slightly different (except for Imperial size 2 1/2 inches and metric size 75mm and 5 inches and 140mm which happen to coincide exactly) and are not interchangeable.

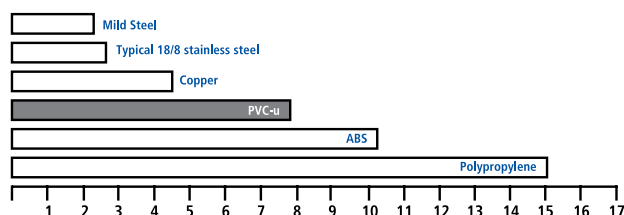
Imperial Sizes (inches)		Metric Sizes (mm)	
Nominal bore	Pipe outside dia.	Pipe outside dia.	Nominal bore
3/8"	17.1	16	10
1/2"	21.4	20	15
3/4"	26.7	25	20
1"	33.6	32	25
1 1/4"	42.2	40	32
1 1/2"	48.3	50	40
2"	60.3	63	50
2 1/2"	75.2	75	65
3"	88.9	90	80
4"	114.3	110	100
5"	140.2	140	125
6"	168.3	160	150
8"	219.1	225	200

Thermal Expansion

The thermal coefficient of linear expansion for PVCu is $7.8 \times 10^{-5} \text{m/m}^\circ\text{C}$

It is necessary in certain situations to make special provision for this expansion and contraction.

Thermal expansion of PVCu is compared with other materials, in the following chart.



General Information

0°C – 60°C

Imperial Solvent Weld

Threaded

Metric Solvent Weld

Threaded Adaptors

Temperature range

3/8" – 8"

3/8" – 4"

16–315mm

16–110mm

PVCu

General properties of PVCu

PVCu is thermally stable in the temperature range 0°C to 60°C, however at low temperatures the impact strength of PVCu decreases. It is therefore not recommended for use at very low temperatures unless there is no likelihood of the piping materials being disturbed or subjected to impact damage. PVCu is free from toxic metals thus ensuring that it is physiologically harmless for drinking water and foodstuffs applications.

Some important advantages of PVCu are:

- Extensive choice of component parts
- Wide range of applications
- Good chemical and corrosion resistance
- Safe for potable water applications
- Low friction loss
- Self extinguishing
- High mechanical strength
- Simplified installation techniques using solvent cement welding
- Approved for potable water applications

Properties of PVCu (Average values)	
Property	Value
Density	1.38 g/cm ³
Tensile Strength	55 N/mm ²
Elongation at Break	>30 %
Impact Strength	No crack kJ/m ² (23°C)
Modulus of Elasticity (Young's Modulus)	3000 N/mm ²
Coefficient of Linear Expansion	0.08 mm/m °C
Maximum Operating Temperature	60°C
Minimum Operating Temperature	0°C
Vicat Softening Point	>76°C (VST/B 50)
Water Absorption	<4 mg/cm ³
Surface Resistance Approx.	10 ¹³ Ω
Thermal Conductivity	0.140 W/m · K
Flammability	V-0 UL94
Colour	7011 Dark Grey RAL

Sample Engineering specification

All PVC pipework and fittings shall be manufactured by Effast and conform to EN 1452-1, BS 3505/6 and BS 4346 Part 1.

Extruded pipework and injection moulded fittings have WRAS accreditation for potable water supply and are available in both metric and imperial sizes

Temperature & Pressure Relationship

Temp °C	Class C	Class D	Class E	PN10	PN16
	Bar (psi)	Bar (psi)	Bar (psi)	Bar (psi)	Bar (psi)
0	9.0 (130)	12.0 (173)	15.0 (217)	10.0 (145)	16.0 (232)
20	9.0 (130)	12.0 (173)	15.0 (217)	10.0 (145)	16.0 (232)
30	8.1 (117)	10.8 (155)	13.5 (195)	8.0 (116)	12.8 (186)
35	7.2 (140)	9.6 (138)	12.0 (173)	7.1 (103)	11.8 (171)
40	6.3 (91)	8.4 (121)	10.5 (152)	6.4 (93)	10.2 (148)
45	5.4 (78)	7.2 (104)	9.0 (130)	5.1 (74)	8.2 (119)
50	4.0 (58)	5.4 (78)	6.7 (97)	4.4 (64)	7.0 (102)
55	2.7 (39)	3.6 (52)	4.5 (65)	3.3 (48)	5.2 (75)
60	1.3 (19)	1.8 (26)	2.2 (32)	2.6 (38)	4.1 (59)

Pressure Ratings Fittings & Valves Imperial

Unless otherwise indicated the pressure ratings are as follows

Product	Size	Pressure Rating
Fitting Solvent Cement	½" – 6"	15 bar (217psi)
	8"	9 bar (130psi)
Fittings Threaded	¾" – 4"	10 bar (145psi)
Valves	¾" – 2"	16 bar (232psi)
Valves	2½" – 4"	10 bar (145psi)

All pressure ratings are at 20°C

Pressure Ratings Fittings & Valves Metric

Unless otherwise indicated the pressure ratings are as follows

Product	Size	Pressure Rating
Fitting Solvent Cement	16mm - 160mm	16 bar (232psi)
	200mm - 315mm	10 bar (145psi)
Fittings Threaded	¾" – 4"	10 bar (145psi)
Valves	16mm - 63mm	16 bar (232psi)
Valves	75mm - 110mm	10 bar (145psi)

All pressure ratings are at 20°C

All threaded fittings are parallel threaded unless stated.

ie. BSP Female and BSP Male are parallel. BSPT = BSP taper thread



Useful Information

The following information may be helpful in understanding the specification of metric and imperial sizes and pressure ratings when selecting pipe.

When specifying imperial pipe, fittings and other components, reference is made to the nominal size of the pipe bore in inches and fractions of an inch. With metric systems, reference is made to the outside diameter and is expressed in millimetres. It is important to note that with the exception of 2½"/75mm and 5"/140mm the systems are not interchangeable.

PVCu Imperial Pressure Pipes 3m Lengths Plain Ended

Code: PSPVP

Pressure pipe class C

Nominal Size	Product code	Z Min	Z Max	Z Average	E	Weight (g / mtr)
2"	RPCCLC0630PE3	2.5	3.0	3.0	60.3	902
2½"	RPCCLC0750PE3	-	-	3.6	75.2	1502
3"	RPCCLC0900PE3	3.5	4.1	4.1	88.9	1828
4"	RPCCLC1100PE3	4.5	5.2	5.2	114.3	2990
5"	RPCCLC1400PE3	5.5	6.4	6.3	140.2	4488
6"	RPCCLC1600PE3	6.6	7.6	7.5	168.3	6417
8"	RPCCLC2250PE3	7.8	9.0	8.8	219.1	9932

Code: PSPVP

Pressure pipe class D

1¼"	RPDCLD0400PE3	2.2	2.7	2.7	42.2	543
1½"	RPDCLD0500PE3	2.5	3.0	3.0	48.3	712
2"	RPDCLD0630PE3	3.1	3.7	3.7	60.3	1092
3"	RPDCLD0900PE3	4.6	5.3	5.3	88.9	2342
4"	RPDCLD1100PE3	6.0	6.9	6.8	114.3	3918
6"	RPDCLD1600PE3	8.8	10.2	9.9	168.3	8407

Code: PSPVP

Pressure pipe class E

½"	RPECLE0200PE3	1.7	2.1	2.1	21.4	208
¾"	RPECLE0250PE3	1.9	2.5	2.5	26.7	292
1"	RPECLE0320PE3	2.2	2.7	2.7	33.6	425
1¼"	RPECLE0400PE3	2.7	3.2	3.2	42.2	660
1½"	RPECLE0500PE3	3.1	3.7	3.7	48.3	858
2"	RPECLE0630PE3	3.9	4.5	4.5	60.3	1337
2½"	RPECLE0750PE3	-	-	5.6	75.2	2250
3"	RPECLE0900PE3	5.7	6.6	6.5	88.9	2862
4"	RPECLE1100PE3	7.3	8.4	8.3	114.3	4677
6"	RPECLE1600PE3	10.8	12.5	12.1	168.3	10123

PVCu - Imperial

PVCu Imperial Pressure Pipes 6m Lengths Plain Ended

Code: PSPVP

Pressure pipe class C

Description	Product code	Z Min	Z Max	Z Average	E	Weight (g / mtr)
2"	RPCCLC0630PE	2.5	3.0	3.0	60.3	902
2½"	RPCCLC0750PE	-	-	3.6	75.2	1502
3"	RPCCLC0900PE	3.5	4.1	4.1	88.9	1828
4"	RPCCLC1100PE	4.5	5.2	5.2	114.3	2990
5"	RPCCLC1400PE	5.5	6.4	6.3	140.2	4488
6"	RPCCLC1600PE	6.6	7.6	7.5	168.3	6417
8"	RPCCLC2250PE	7.8	9.0	8.8	219.1	9932

Code: PSPVP

Pressure pipe class D

1¼"	RPDCLD0400PE	2.2	2.7	2.7	42.2	543
1½"	RPDCLD0500PE	2.5	3.0	3.0	48.3	712
2"	RPDCLD0630PE	3.1	3.7	3.7	60.3	1092
3"	RPDCLD0900PE	4.6	5.3	5.3	88.9	2342
4"	RPDCLD1100PE	6.0	6.9	6.8	114.3	3918
6"	RPDCLD1600PE	8.8	10.2	9.9	168.3	8407

Code: PSPVP

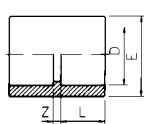
Pressure pipe class E

½"	RPECLE0200PE	1.7	2.1	2.1	21.4	208
¾"	RPECLE0250PE	1.9	2.5	2.5	26.7	292
1"	RPECLE0320PE	2.2	2.7	2.7	33.6	425
1¼"	RPECLE0400PE	2.7	3.2	3.2	42.2	660
1½"	RPECLE0500PE	3.1	3.7	3.7	48.3	858
2"	RPECLE0630PE	3.9	4.5	4.5	60.3	1337
2½"	RPECLE0750PE	-	-	5.6	75.2	2250
3"	RPECLE0900PE	5.7	6.6	6.5	88.9	2862
4"	RPECLE1100PE	7.3	8.4	8.3	114.3	4677
6"	RPECLE1600PE	10.8	12.5	12.1	168.3	10123

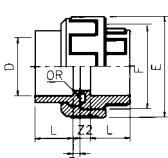
PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.
For backing rings and gaskets see Accessories section

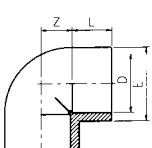
Socket Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	3/8"	RFAMAA0160	15	3	23	10	9
	1/2"	RFAMAA0200	17	3	27	10	15
	3/4"	RFAMAA0250	20	3	33	10	23
	1"	RFAMAA0320	23	3	41	10	36
	1 1/4"	RFAMAA0400	27	3	50	1	60
	1 1/2"	RFAMAA0500	31	3	61	1	85
	2"	RFAMAA0630	38	3	76	1	145
	2 1/2"	RFAMAA0750	44	4	90	1	222
	3"	RFAMAA0900	51	5	110	1	353
	4"	RFAMAA1100	63	6	133	1	605
	5"	RFAMAA1400	76	8	161	1	1100
	6"	RFAMAA1600	90	8	198	1	1400
	8"*	RFAMAA2250	119	11	258	1	4100

Union Plain. Unions up to 2" 15 bar (20°C), above 2" 9 bar (20°C)

Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	3/8"	RFABOA0160	15	3	10	3/4"	34	10	30
	1/2"	RFABOA0200	17	3	10	1"	42	10	42
	3/4"	RFABOA0250	20	3	10	1 1/4"	52	10	70
	1"	RFABOA0320	23	3	10	1 1/2"	59	10	97
	1 1/4"	RFABOA0400	27	3	12	2"	72	10	115
	1 1/2"	RFABOA0500	31	3	14	2 1/4"	79	10	216
	2"	RFABOA0630	38	3	18	2 3/4"	96	10	350
	2 1/2"*	RFABOA0750	44	3	18	3 1/2"	119	1	580
	3"*	RFABOA0900	52	5	18	4"	134	1	760
	4"*	RFABOA1100	63	5	18	5"	163	1	1340

Elbow 90° Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	3/8"	RFAGOA0160	15	9	23	10	13
	1/2"	RFAGOA0200	17	11	27	10	20
	3/4"	RFAGOA0250	20	14	33	10	35
	1"	RFAGOA0320	23	17	41	10	60
	1 1/4"	RFAGOA0400	27	23	51	10	90
	1 1/2"	RFAGOA0500	31	28	61	10	135
	2"	RFAGOA0630	38	34	75	10	220
	2 1/2"	RFAGOA0750	44	40	89	1	375
	3"	RFAGOA0900	52	48	106	1	600
	4"	RFAGOA1100	63	58	133	1	1060
	5"	RFAGOA1400	76	72	164	1	2000
	6"	RFAGOA1600	90	81	198	1	3200
	8"*	RFAGOA2250	119	115	258	1	7500

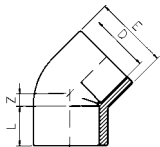
PVCu - Imperial

PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.
For backing rings and gaskets see Accessories section

Elbow 45° Plain

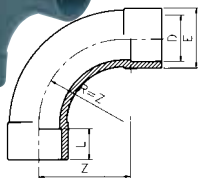
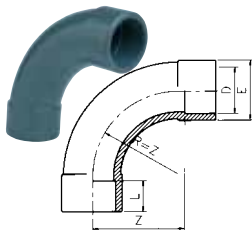
Code: PSPVF



Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
3/8"	RFAGYA0160	15	6	23	10	10
1/2"	RFAGYA0200	17	5	27	10	17
3/4"	RFAGYA0250	20	6	33	10	30
1"	RFAGYA0320	23	8	41	10	47
1 1/4"	RFAGYA0400	27	10	50	10	77
1 1/2"	RFAGYA0500	31	12	61	10	115
2"	RFAGYA0630	38	15	75	10	190
2 1/2"	RFAGYA0750	44	18	89	1	310
3"	RFAGYA0900	52	21	106	1	485
4"	RFAGYA1100	63	25	133	1	835
5"	RFAGYA1400	76	32	164	1	1640
6"	RFAGYA1600	90	36	198	1	2100
8" *	RFAGYA2250	119	49	258	1	6200

Bend 90° Short Radius Plain

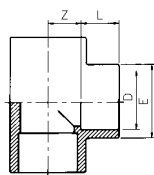
Code: PSPVF



Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
1/2"	RFACUA0200	17	39	27	10	30
3/4"	RFACUA0250	20	49	33	10	50
1"	RFACUA0320	23	63	41	10	92
1 1/4"	RFACUA0400	27	80	50	1	165
1 1/2"	RFACUA0500	31	100	61	1	270
2"	RFACUA0630	38	126	76	1	490
2 1/2"	RFACUA0750	44	150	90	1	990
3"	RFACUA0900	51	180	110	1	1600
4"	RFACUA1100	63	220	133	1	2150

Tee 90° Plain

Code: PSPVF



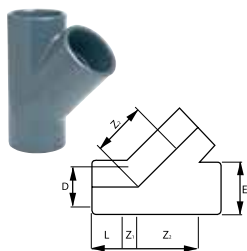
Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
3/8"	RFATIA0160	15	9	24	10	15
1/2"	RFATIA0200	17	11	28	10	25
3/4"	RFATIA0250	20	14	34	10	44
1"	RFATIA0320	23	17	42	10	75
1 1/4"	RFATIA0400	27	21	51	10	120
1 1/2"	RFATIA0500	31	26	61	10	172
2"	RFATIA0630	38	33	75	10	300
2 1/2"	RFATIA0750	44	39	89	1	495
3"	RFATIA0900	52	47	106	1	790
4"	RFATIA1100	63	57	133	1	1330
5"	RFATIA1400	76	71	163	1	2550
6"	RFATIA1600	90	81	198	1	4100
8" *	RFATIA2250	119	114	258	1	9700

PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.
For backing rings and gaskets see Accessories section

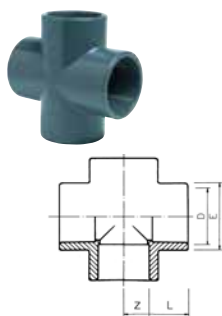
Tee 45° Plain

Code: PSPVF	Nominal Size	Code	L	Z1	Z2	E	Weight (GR)
	½"	RFATYA0200	17	7	29	27	36
	1"	RFATYA0320	23	8	44	42	103
	1½"	RFATYA0500	31	12	65	61	254
	2"	RFATYA0630	38	14	85	74	420



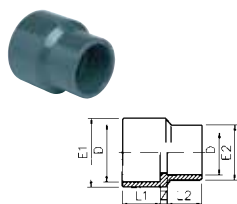
Cross 90° plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Weight (GR)
	1"	RFACXA0320	23	17	42	110
	1½"	RFACXA0500	31	26	61	270
	2"	RFACXA0630	38	33	75	510



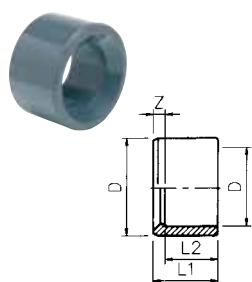
Reducing Socket Plain

Code: PSPVF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	1¼" x 1"	RFAMRA040D	27	23	10	50	41	10	75
	1½" x 1¼"	RFAMRA050E	31	27	12	63	50	10	110
	2" x 1½"	RFAMRA063F	38	31	12	75	61	10	130
	4" x 3"	RFAMRA110I	63	51	17	133	108	1	530



Reducing Bush Plain

Code: PSPVF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	½" x 3/8"	RFARCA020A	17	15	2	A	10	3
	¾" x ½"	RFARCA025B	20	17	3	A	10	6
	1" x ½"	RFARCA032B	23	17	6	B	10	15
	1" x ¾"	RFARCA032C	23	20	3	A	10	10
	1¼" x 1"	RFARCA040D	27	23	4	A	10	16
	1½" x ¾"	RFARCA050C	31	20	12	B	10	45
	1½" x 1"	RFARCA050D	31	23	9	B	10	40
	1½" x 1¼"	RFARCA050E	31	27	5	A	10	30
	2" x 1"	RFARCA063D	38	23	16	B	10	83
	2" x 1¼"	RFARCA063E	38	27	12	B	10	78
	2" x 1½"	RFARCA063F	38	31	7	A	10	61

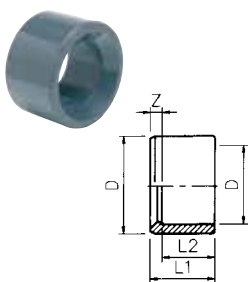


PVCu - Imperial

PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.
For backing rings and gaskets see Accessories section

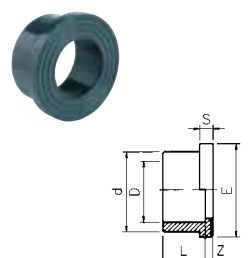
Reducing Bush Plain

Code: PSPVF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	2½" x 1½"	RFARCA075F	44	31	13	B	1	122
	2½" x 2"	RFARCA075G	44	38	6	A	1	80
	3" x 1½"	RFARCA090F	52	31	20	B	1	210
	3" x 2"	RFARCA090G	52	38	13	B	1	195
	3" x 2½"	RFARCA090H	52	44	7	A	1	140
	4" x 2"	RFARCA110G	63	38	23	B	1	372
	4" x 3"	RFARCA110I	63	52	10	A	1	275
	5" x 4"	RFARCA140L	76	63	15	B	1	510
	6" x 4"	RFARCA160L	90	63	25	B	1	830
	8" x 6"	RFARCA225M	119	90	33	B	1	1700

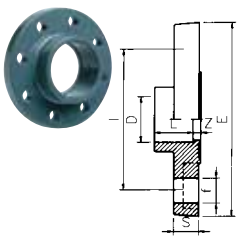
PVCu Flanges

For backing rings and gaskets see Accessories section

Stub Flange (serrated face) Plain

Code: PSPVF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	½"	RFAQRA0200	17	3	27	6	34	10	10
	¾"	RFAQRA0250	20	3	33	7	41	10	16
	1"	RFAQRA0320	23	3	41	7	50	10	25
	1¼"	RFAQRA0400	27	3	50	8	61	10	40
	1½"	RFAQRA0500	32	3	61	8	73	10	60
	2"	RFAQRA0630	39	3	76	9	90	10	105
	2½"	RFAQRA0750	44	3	90	10	106	1	160
	3"	RFAQRA0900	52	5	108	11	125	1	280
	4"	RFAQRA1100	63	5	133	12	150	1	445
	5"	RFAQRA1400	76	6	165	13	188	1	740
	6"	RFAQRA1600	90	7	193	13	218	1	1000
	8"	RFAQRA2250	119	7	248	19	274	1	1700

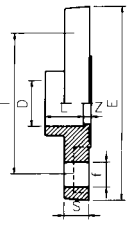
Drilled to BS 10 Table D&E Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	½"	RFAFFA0200	17	5	95	14	67	11	4	78
	¾"	RFAFFA0250	20	5	105	14	73	12	4	105
	1"	RFAFFA0320	23	5	115	14	83	14	4	143
	1½"	RFAFFA0500	32	5	152	18	98	16	4	280
	2"	RFAFFA0630	38	5	165	18	115	18	4	380
	3"	RFAFFA0900	51	7	200	18	146	20	8	685
	4"	RFAFFA110E	63	8	220	18	178	22	8	940

PVCu Flanges

For backing rings and gaskets see Accessories section

Drilled to BS 4504 NP10/16 Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	1/2"	RFAFNA0200	17	5	95	14	65	8	4	78
	3/4"	RFAFNA0250	20	5	105	14	75	9	4	105
	1"	RFAFNA0320	23	5	115	14	85	16	4	143
	1 1/4"	RFAFNA0400	27	5	142	18	100	17	4	220
	1 1/2"	RFAFNA0500	32	5	152	18	110	17	4	280
	2"	RFAFNA0630	38	5	165	18	125	20	4	380
	2 1/2"	RFAFNA0750	44	6	185	18	145	19	4	505

PVCu Blanking Flanges (drilled)

Maximum working pressure: 1/2" – 2" 15 bar (217 psi) at 20°C. 3" – 4" 10 bar (145 psi) at 20°C. 6" 6 bar (87 psi) at 20°C. 8" 4 bar (58 psi) at 20°C

Blanking Flange Drilled to BS 10 table D/E

Code: PSPVF	Nominal Size	Code	E	S	I	F	HOLES	Weight (GR)
	1/2"	RFAFEA0200	95	11	67	14	4	76
	3/4"	RFAFEA0250	105	12	73	14	4	104
	1"	RFAFEA0320	115	14	83	14	4	140
	1 1/4"	RFAFEA0400	142	15	88	18	4	220
	1 1/2"	RFAFEA0500	152	16	98	18	4	280
	2"	RFAFEA0630	165	18	115	18	4	370
	3"	RFAFEA0900	200	20	146	18	4	655
	4" D	RFAFEA110D	220	22	178	18	4	975
	4" E	RFAFEA110E	220	22	178	18	8	950
	6"	RFAFEA1600	285	28	235	22	8	1610

Blanking Flange Drilled to BS4504 NP10/16

Code: PSPVF	Nominal Size	MM	Code	E	S	I	F	HOLES	Weight (GR)
	1/2"	20	RFIFCI0200	95	11	65	14	4	76
	3/4"	25	RFIFCI0250	105	12	75	14	4	104
	1"	32	RFIFCI0320	115	14	85	14	4	140
	1 1/4"	40	RFIFCI0400	142	15	100	18	4	220
	1 1/2"	50	RFIFCI0500	152	16	110	18	4	280
	2"	63	RFIFCI0630	165	18	125	18	4	370
	2 1/2"	75	RFIFCI0750	185	19	145	18	4	495
	3"	90	RFIFCI0900	200	20	160	18	8	655
	4"	110	RFIFCI1100	220	22	180	18	8	850
	—	125	RFIFCI1250	230	24	190	18	8	950
	5"	140	RFIFCI1400	250	26	210	18	8	1165
	6"	160	RFIFCI1600	285	28	240	22	8	1610
	—	200	RFIFCI2000	340	30	295	22	8	2480
	8"	225	RFIFCI2250	340	30	295	22	8	2480

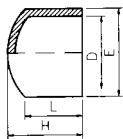
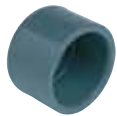
PVCu - Imperial

PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

Cap Plain

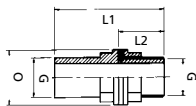
Code: PSPVF



Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
3/8"	RFACAA0160	15	26	23	10	7
1/2"	RFACAA0200	17	30	27	10	10
3/4"	RFACAA0250	20	34	33	10	18
1"	RFACAA0320	23	38	42	10	30
1 1/4"	RFACAA0400	27	43	50	10	45
1 1/2"	RFACAA0500	31	48	61	10	65
2"	RFACAA0630	38	56	75	10	110
2 1/2"	RFACAA0750	44	67	89	1	208
3"	RFACAA0900	52	78	106	1	325
4"	RFACAA1100	63	81	133	1	500
5"	RFACAA1400	76	114	162	1	920
6"	RFACAA1600	90	127	198	1	1120
8"*	RFACAA2250	119	165	255	1	2978

Tank Connector Plain/BSP Male Threaded EPDM Gasket. (1/2" to 4" 9 bar at 20°C)

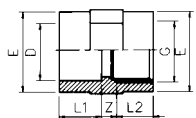
Code: PSPVF



Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)
1/2"	BSPM	RFCTCC0200	77	42	38	10	41
3/4"	BSPM	RFCTCC0250	77	42	42	10	52
1"	BSPM	RFCTCC0320	103	55	55	10	108
1 1/4"	BSPM	RFCTCC0400	121	70	65	10	153
1 1/2"	BSPM	RFCTCC0500	128	73	72	10	216
2"	BSPM	RFCTCC0630	154	82	93	10	370
2 1/2"	BSPM	RFCTCC0750	164	94	106	1	471
3"*	BSPM	RFCTCC0900	202	110	125	1	768
4"*	BSPM	RFCTCC1100	230	140	154	1	1421

Socket Plain/BSP Female Threaded

Code: PSPVF

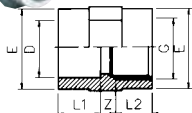


Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
1/2"	BSPF	RFCMAC0200	17	15	4	28	10	18
3/4"	BSPF	RFCMAC0250	20	16	6	34	10	25
1"	BSPF	RFCMAC0320	23	19	7	42	10	38
1 1/4"	BSPF	RFCMAC0400	27	21	7	51	10	60
1 1/2"	BSPF	RFCMAC0500	32	21	7	61	10	95
2"	BSPF	RFCMAC0630	39	26	7	75	10	165
2 1/2"	BSPF	RFCMAC0750	44	30	8	89	1	215
3"	BSPF	RFCMAC0900	52	33	9	106	1	340
4"	BSPF	RFCMAC1100	63	39	10	133	1	550

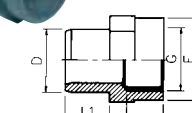
PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C).

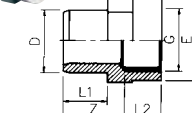
Socket Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	1/2"	BSPF	RFRMAR0200	17	15	4	28	10	22
	3/4"	BSPF	RFRMAR0250	20	16	6	34	10	33
	1"	BSPF	RFRMAR0320	23	19	6	42	10	50
	1 1/4"	BSPF	RFRMAR0400	27	21	8	51	10	76
	1 1/2"	BSPF	RFRMAR0500	32	21	13	61	10	115
	2"	BSPF	RFRMAR0630	39	26	15	75	10	189

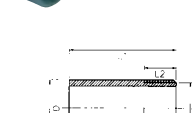
Spigot Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
	1/2"	BSPF	RFC AFC0200	17	15	28	24	10	20
	3/4"	BSPF	RFC AFC0250	20	16	34	27	10	25
	1"	BSPF	RFC AFC0320	23	19	42	30	10	43
	1 1/4"	BSPF	RFC AFC0400	27	21	51	36	10	65
	1 1/2"	BSPF	RFC AFC0500	32	21	58	41	10	73
	2"	BSPF	RFC AFC0630	39	26	72	48	10	135
	2 1/2"	BSPF	RFC AFC0750	44	30	89	58	1	225

Spigot Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSPVF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	1/2"	BSPF	RFRAF R0200	17	15	28	24	10	24
	3/4"	BSPF	RFRAF R0250	20	16	34	27	10	33
	1"	BSPF	RFRAF R0320	23	19	42	30	10	55
	1 1/4"	BSPF	RFRAF R0400	27	21	51	36	10	81
	1 1/2"	BSPF	RFRAF R0500	32	21	58	41	10	93
	2"	BSPF	RFRAF R0630	39	26	72	44	10	159

Barrel Nipple Plain/BSP Male Taper Threaded (1/2" to 4" 9 bar at 20°C)

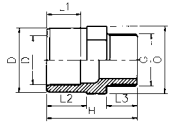
Code: PSPVF	Nominal Size	G	Code	L1	L2	Pack Qty	Weight (GR)
	3/8"	BSPM	RFCBNC0160	42	13	10	8
	1/2"	BSPM	RFCBNC0200	50	16	10	14
	3/4"	BSPM	RFCBNC0250	56	17	10	25
	1"	BSPM	RFCBNC0320	63	20	10	38
	1 1/4"	BSPM	RFCBNC0400	75	24	10	52
	1 1/2"	BSPM	RFCBNC0500	88	30	10	80
	2"	BSPM	RFCBNC0630	88	32	10	115
	2 1/2"	BSPM	RFCBNC0750	106	35	1	197
	3"*	BSPM	RFCBNC0900	128	39	1	300
	4"*	BSPM	RFCBNC1100	153	43	1	560

PVCu - Imperial

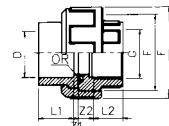
PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

Socket Plain/BSP Male Threaded

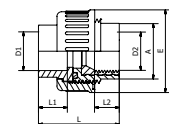
Code: PSPVF	Nominal Size	G	Code	L1	L2	L3	H	O	Pack Qty	Weight (GR)
	½"	BSPF	RFCAMC0200	17	20	15	46	30	10	15
	¾"	BSPF	RFCAMC0250	20	23	16	50	36	10	26
	1"	BSPF	RFCAMC0320	23	27	19	57	46	10	40
	1¼"	BSPF	RFCAMC0400	27	32	21	67	55	10	75
	1½"	BSPF	RFCAMC0500	32	39	21	74	65	10	113
	2"	BSPF	RFCAMC0630	39	44	26	84	80	10	150
	2½"	BSPF	RFCAMC0750	44	52	30	99	95	1	270
	3"	BSPF	RFCAMC0900	52	63	33	113	115	1	475
	4"	BSPF	RFCAMC1100	63	66	39	120	130	1	500

Union Plain/BSP Female Threaded. Unions up to 2" 15 bar (20°C).

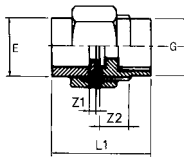
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	F	E	Pack Qty	Weight (GR)
	½"	BSPF	RFCBOC0200	17	15	3	11	1"	42	10	42
	¾"	BSPF	RFCBOC0250	20	16	3	13	1¼"	52	10	70
	1"	BSPF	RFCBOC0320	23	19	3	13	1½"	59	10	95
	1¼"	BSPF	RFCBOC0400	27	21	3	17	2"	72	10	155
	1½"	BSPF	RFCBOC0500	32	21	3	24	2¼"	79	10	240
	2"	BSPF	RFCBOC0630	39	26	3	30	2¾"	96	5	405
	2½" *	BSPF	RFCBOC0750	44	30	3	32	3½"	119	1	625
	3" *	BSPF	RFCBOC0900	52	33	5	36	4"	134	1	865
	4" *	BSPF	RFCBOC1100	61	39	5	40	5"	163	1	1340

* Maximum working pressure: 10 bar (145 psi) at 20°C Supplied with EPDM O ring—for FPM O ring see Accessories section

Composite Union Plain/BSP Female Brass Threaded with Plastic Nut

Code: PSPVF	Nominal Size	G	Code	D1	D2	L1	L2	L	A	E	Weight (GR)
	½"	BSPF	RFCPFC0200	20	½"	16	14	47	30	42	
	¾"	BSPF	RFCPFC0250	25	¾"	19	16	52	25	53	120
	1"	BSPF	RFCPFC0320	32	1"	22	19	58	46	59	
	1¼"	BSPF	RFCPFC0400	40	1¼"	26	23	65	55	72	
	1½"	BSPF	RFCPFC0500	50	1½"	32	23	71	65	81	316
	2"	BSPF	RFCPFC0630	63	2"	38	23	85	80	99	460

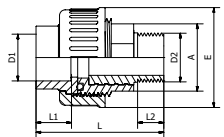
Composite Union Plain/BSP Female Brass Threaded

Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Z2	Pack Qty	Weight (GR)
	½"	BSPF	RFCBFC0200	28	45	3	8	1	165
	¾"	BSPF	RFCBFC0250	36	49	3	8	1	290
	1"	BSPF	RFCBFC0320	42	52	3	8	1	310
	1¼"	BSPF	RFCBFC0400	53	60	3	8	1	450
	1½"	BSPF	RFCBFC0500	59	68	3	9	1	490
	2"	BSPF	RFCBFC0630	74	81	3	10	1	950
	2½"	BSPF	RFCBFC0750	93	94	3	16	1	1357
	3"	BSPF	RFCBFC0900	105	103	5	14	1	1663

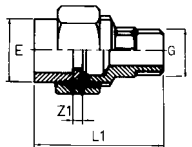
PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

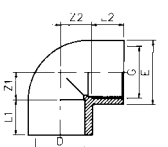
Composite Union Plain/BSP Male Brass Threaded with Plastic Nut

Code: PSPVF	Nominal Size	G	Code	D1	D2	L1	L2	L	A	E	Pack Qty	Weight (GR)
 	1/2"	BSPF	RFCPMC0200	20	1/2"	16	14	47	30	42	1	
	3/4"	BSPF	RFCPMC0250	25	3/4"	19	16	52	25	53	1	161
	1"	BSPF	RFCPMC0320	32	1"	22	19	58	46	59	1	
	1 1/4"	BSPF	RFCPMC0400	40	1 1/4"	26	23	65	55	72	1	
	1 1/2"	BSPF	RFCPMC0500	50	1 1/2"	32	23	71	65	81	1	451
	2"	BSPF	RFCPMC0630	63	2"	38	23	85	80	99	1	670

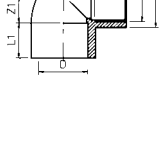
Composite Union Plain/BSP Male Taper Brass Threaded

Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
 	1/2"	BSPTM	RFCBMC0200	28	58	3	1	175
	3/4"	BSPTM	RFCBMC0250	36	69	3	1	238
	1"	BSPTM	RFCBMC0320	42	72	3	1	324
	1 1/4"	BSPTM	RFCBMC0400	53	86	3	1	469
	1 1/2"	BSPTM	RFCBMC0500	59	92	3	1	595
	2"	BSPTM	RFCBMC0630	74	109	3	1	982
	2 1/2"	BSPTM	RFCBMC0750	93	127	3	1	1663
	3"	BSPTM	RFCBMC0900	105	139	5	1	2184

Elbow 90° Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
 	1/2"	BSPF	RFCGOC0200	17	15	11	12	28	10	20
	3/4"	BSPF	RFCGOC0250	20	16	14	17	34	10	35
	1"	BSPF	RFCGOC0320	23	19	17	20	42	10	60
	1 1/4"	BSPF	RFCGOC0400	27	21	21	26	51	10	90
	1 1/2"	BSPF	RFCGOC0500	32	21	26	36	61	10	155
	2"	BSPF	RFCGOC0630	39	26	33	46	75	10	265
	2 1/2"	BSPF	RFCGOC0750	44	30	39	53	89	1	400
	3"	BSPF	RFCGOC0900	52	33	47	65	106	1	670

Elbow 90° Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

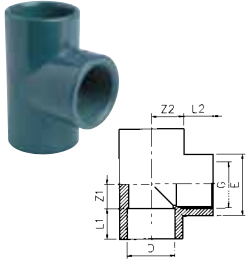
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	Pack Qty	Weight (GR)
 	1/2"	BSPF	RFRGOR0200	17	15	11	12	10	24
	3/4"	BSPF	RFRGOR0250	20	16	14	17	10	43
	1"	BSPF	RFRGOR0320	23	19	17	20	10	72
	1 1/4"	BSPF	RFRGOR0400	27	21	21	27	10	106
	1 1/2"	BSPF	RFRGOR0500	32	21	26	37	10	175
	2"	BSPF	RFRGOR0630	39	26	33	46	10	289

PVCu - Imperial

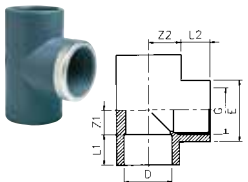
PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

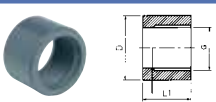
Tee 90° Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	RFCTIC0200	17	15	11	12	28	10	30
	¾"	BSPF	RFCTIC0250	19	16	14	17	34	10	45
	1"	BSPF	RFCTIC0320	23	19	17	20	42	10	75
	1¼"	BSPF	RFCTIC0400	27	21	21	26	51	10	120
	1½"	BSPF	RFCTIC0500	32	21	26	36	61	10	195
	2"	BSPF	RFCTIC0630	39	26	33	46	75	5	335
	2½"	BSPF	RFCTIC0750	44	30	39	53	89	1	505
	3"	BSPF	RFCTIC0900	52	33	47	65	106	1	810

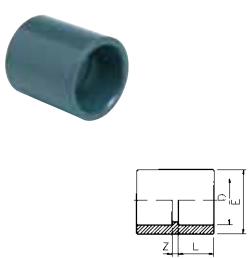
Tee 90° Plain/BSP Female Threaded Branch with Stainless Steel Reinforcing Ring

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	Pack Qty	Weight (GR)
	½"	BSPF	RFRTIR0200	17	15	11	12	10	34
	¾"	BSPF	RFRTIR0250	20	16	14	17	10	53
	1"	BSPF	RFRTIR0320	23	19	17	20	10	87
	1¼"	BSPF	RFRTIR0400	27	21	21	27	10	136
	1½"	BSPF	RFRTIR0500	32	21	26	37	10	215
	2"	BSPF	RFRTIR0630	39	26	33	46	5	359

Reducing Bush Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1	D	G	Pack Qty	Weight (GR)
	½" x ¾"	BSPF	RFCRCC020A	16	½"	¾"	10	5
	¾" x 1"	BSPF	RFCRCC025B	19	¾"	1"	10	8
	1" x 1¼"	BSPF	RFCRCC032C	22	1"	1¼"	10	15

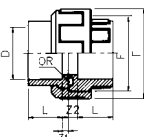
Adaptor Socket Plain

Code: PSPVF	Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
	½" x 20		RFBMAB0200	16	3	27	10	16
	¾" x 25		RFBMAB0250	19	3	33	10	25
	1" x 32		RFBMAB0320	22	3	41	10	39
	1¼" x 40		RFBMAB0400	27	3	52	10	53
	1½" x 50		RFBMAB0500	32	3	61	10	101
	2" x 63		RFBMAB0630	39	3	75	10	178
	3" x 90		RFBMAB0900	52	5	110	1	381
	4" x 110		RFBMAB1100	67	6	133	1	750
	6" x 160		RFBMAB1600	89	8	198	1	1695

PVCu Imperial Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

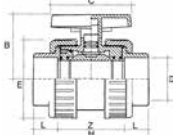
Union Plain Unions up to 63mm 15 bar (20°C), above 63mm 10 bar (20°C)

Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Weight (GR)
	½" x 20	RFBB0B0200	16	3	10	1"	42	42
	¾" x 25	RFBB0B0250	19	3	10	1¼"	52	70
	1" x 32	RFBB0B0320	22	3	10	1½"	59	97
	1¼" x 40	RFBB0B0400	26	3	12	2"	72	155
	1½" x 50	RFBB0B0500	31	3	14	2¼"	79	216
	2" x 63	RFBB0B0630	38	3	18	2¾"	100	350
	3" x 90*	RFBB0B0900	51	5	18	4"	134	760
	4" x 110*	RFBB0B1100	61	5	18	5"	163	1340

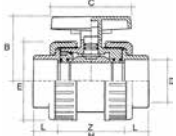
PVCu Valves

Valves from ¾" - 2" 16 bar (20°C), above 2" 10 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C. For seals see Accessories section

Industrial Double Union Ball Valve Plain Sockets EPDM Seals

Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	¾"	RBA22A0160	50	51	16	46	78	65	16	140
	½"	RBA22A0200	50	51	17	46	78	65	16	140
	¾"	RBA22A0250	60	58	20	52	90	70	16	200
	1"	RBA22A0320	68	65	23	60	104	82	16	300
	1¼"	RBA22A0400	80	76	27	68	120	92	16	450
	1½"	RBA22A0500	94	88	31	78	140	105	16	690
	2"	RBA22A0630	115	104	38	93	169	123	16	1150
	2½"	RBA22A0750	168	137	44	139	227	168	10	3100
	3"	RBA22A0900	168	138	51	139	242	168	10	3250
	4"	RBA22A1100	210	166	63	160	282	190	10	5500

Industrial Double Union Ball Valve Plain Sockets FPM Seals

Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	¾"	RBA23A0160	50	51	16	46	78	65	16	140
	½"	RBA23A0200	50	51	17	46	78	65	16	140
	¾"	RBA23A0250	60	58	20	52	90	70	16	200
	1"	RBA23A0320	68	65	23	60	104	82	16	300
	1¼"	RBA23A0400	80	76	27	68	120	92	16	450
	1½"	RBA23A0500	94	88	31	78	140	105	16	690
	2"	RBA23A0630	115	104	38	93	169	123	16	1150
	2½"	RBA23A0750	168	137	44	139	227	168	10	3100
	3"	RBA23A0900	168	138	51	139	242	168	10	3250
	4"	RBA23A1100	210	166	63	160	282	190	10	5500

PVCu - Imperial

PVCu Valves

Valves from 3/8" - 2" 16 bar (20°C), above 2" 10 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C. For valve spares see Accessories section

Economy Double Union Ball Valve Plain Sockets EPDM Seals

Code: PSPVV



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
3/8"	RBA21A0160	50	51	16	46	78	65	16	140
1/2"	RBA21A0200	50	51	17	46	78	65	16	140
3/4"	RBA21A0250	60	58	20	52	90	70	16	200
1"	RBA21A0320	68	65	23	60	104	82	16	300
1 1/4"	RBA21A0400	80	76	27	68	120	92	16	450
1 1/2"	RBA21A0500	94	88	31	78	140	105	16	690
2"	RBA21A0630	115	104	38	93	169	123	16	1150
2 1/2"	RBA21A0750	168	137	44	139	227	168	10	3100
3"	RBA21A0900	168	138	51	139	242	168	10	3250
4"	RBA21A1100	210	166	63	160	282	190	10	5500

Economy Single Union Ball Valve Plain Sockets EPDM Seals

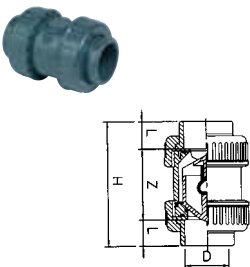
Code: PSPVV



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
3/8"	RBA11A0160	50	51	16	46	78	65	16	140
1/2"	RBA11A0200	50	51	17	46	78	65	16	140
3/4"	RBA11A0250	60	58	20	52	90	70	16	200
1"	RBA11A0320	68	65	23	60	104	82	16	300
1 1/4"	RBA11A0400	80	76	27	68	120	92	16	450
1 1/2"	RBA11A0500	94	88	31	78	140	105	16	690
2"	RBA11A0630	115	104	38	93	169	123	16	1150
2 1/2"	RBA11A0750	168	137	44	139	227	168	10	3100
3"	RBA11A0900	168	138	51	139	242	168	10	3250
4"	RBA11A1100	210	166	63	160	282	190	10	5500

Check Valve Plain Sockets with Stainless Steel Spring EPDM Seals

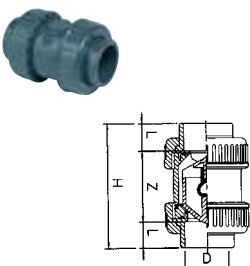
Code: PSPVV



Nominal Size	Code	L	Z	H	Weight (GR)
3/8"	RBA30A0160	16	46	78	110
1/2"	RBA30A0200	17	46	78	110
3/4"	RBA30A0250	20	52	90	180
1"	RBA30A0320	23	60	104	250
1 1/4"	RBA30A0400	27	68	120	380
1 1/2"	RBA30A0500	31	78	140	600
2"	RBA30A0630	38	93	169	1000
2 1/2"	RBA30A0750	44	139	227	2800
3"	RBA30A0900	51	139	242	3000
4"	RBA30A1100	61	160	282	4500

Check Valve Plain Sockets with Stainless Steel FPM Seals

Code: PSPVV

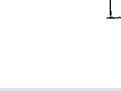
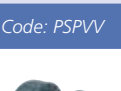


Nominal Size	Code	L	Z	H	Weight (GR)
3/8"	RBA32A0160	16	46	78	110
1/2"	RBA32A0200	17	46	78	110
3/4"	RBA32A0250	20	52	90	180
1"	RBA32A0320	23	60	104	250
1 1/4"	RBA32A0400	27	68	120	380
1 1/2"	RBA32A0500	31	78	140	600
2"	RBA32A0630	38	93	169	1000
2 1/2"	RBA32A0750	44	139	227	2800
3"	RBA32A0900	51	139	242	3000
4"	RBA32A1100	61	160	282	4500

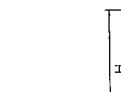
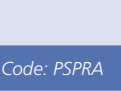
PVCu Valves

Fittings up to 3/8" - 2" 16 bar (20°C), above 2" 10 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C). For valve spares see Accessories section

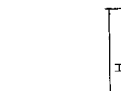
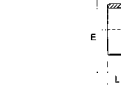
Check Valve Plain Sockets with PTFE Coated Spring EPDM Seals

Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	3/8"	RBA31A0160	16	46	78	110
	1/2"	RBA31A0200	17	46	78	110
	3/4"	RBA31A0250	20	52	90	180
	1"	RBA31A0320	23	60	104	250
	1 1/4"	RBA31A0400	27	68	120	380
	1 1/2"	RBA31A0500	31	78	140	600
	2"	RBA31A0630	38	93	169	1000
	2 1/2"	RBA31A0750	44	139	227	2800
	3"	RBA31A0900	51	139	242	3000

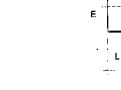
Check Valve Plain Sockets with PTFE Coated Spring FPM Seals

Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	3/8"	RBA34A0160	16	46	78	110
	1/2"	RBA34A0200	17	46	78	110
	3/4"	RBA34A0250	20	52	90	180
	1"	RBA34A0320	23	60	104	250
	1 1/4"	RBA34A0400	27	68	120	380
	1 1/2"	RBA34A0500	31	78	140	600
	2"	RBA34A0630	38	93	169	1000
	2 1/2"	RBA34A0750	44	139	227	2800
	3"	RBA34A0900	51	139	242	3000

Air Release Valve Plain Sockets with EPDM Seals

Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	3/8"	RBA33A0160	16	46	78	110
	1/2"	RBA33A0200	17	46	78	110
	3/4"	RBA33A0250	20	52	90	180
	1"	RBA33A0320	23	60	104	250
	1 1/4"	RBA33A0400	27	68	120	380
	1 1/2"	RBA33A0500	31	78	140	600
	2"	RBA33A0630	38	93	169	1000
	2 1/2"	RBA33A0750	44	139	227	2800
	3"	RBA33A0900	51	139	242	3000
	4"	RBA33A1100	61	160	282	4500

In Line Strainer Plain Sockets with EPDM Seals

Code: PSPRA	Nominal Size	Code	L	Z	H	E	PN	Weight (GR)
	1/2"	RBA35A0200	17	46	78	50	16	110
	3/4"	RBA35A0250	20	52	90	60	16	180
	1"	RBA35A0320	23	60	104	68	16	250
	1 1/4"	RBA35A0400	27	68	120	80	16	380
	1 1/2"	RBA35A0500	31	78	140	94	16	600
	2"	RBA35A0630	38	93	169	115	16	1000

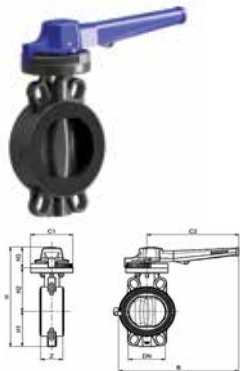
PVCu - Imperial

PVCu Butterfly Valves

Maximum working pressure: 10 bar (145 psi) at 20°C

Pro Flow H Series

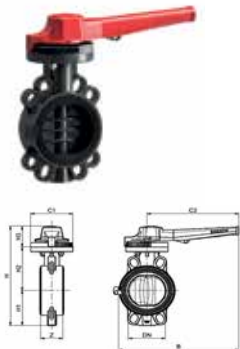
Code: PSPRO



Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
2½" 75mm	RBAPFH0750	2½"	65	80	132	62	274	48	113	245.5	312
3" 90mm	RBAPFH0900	3"	80	92	132	62	286	59	113	245.5	315
4" 110mm	RBAPFH1100	4"	100	106	132	62	300	59.5	113	245.5	320.5
5" 140mm	RBAPFH1400*	5"	AVAILABLE JAN 2018								
6" 160mm	RBAPFH1600*	6"	AVAILABLE JAN 2018								
8" 225mm	RBAPFH2250*	8"	AVAILABLE JAN 2018								

Pro Flow P Series EPDM Seals

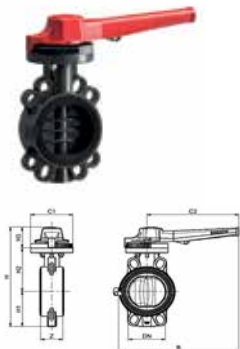
Code: PSAQU



Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
2½" 75mm	RBAPFP0750	2½"	65	80	132	62	274	48	113	245.5	312
3" 90mm	RBAPFP0900	3"	80	92	132	62	286	59	113	245.5	315
4" 110mm	RBAPFP1100	4"	100	106	132	62	300	59.5	113	245.5	320.5
5" 140mm	RBAPFP1400*	5"	AVAILABLE JAN 2018								
6" 160mm	RBAPFP1600*	6"	AVAILABLE JAN 2018								
8" 225mm	RBAPFP2250*	8"	AVAILABLE JAN 2018								

Pro Flow P Series FPM Seals

Code: PSAQU



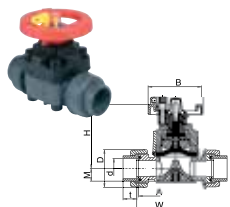
Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
2½" 75mm	RBAPFP075F	2½"	65	80	132	62	274	48	113	245.5	312
3" 90mm	RBAPFP090F	3"	80	92	132	62	286	59	113	245.5	315
4" 110mm	RBAPFP110F	4"	100	106	132	62	300	59.5	113	245.5	320.5
5" 140mm	RBAPFP140F*	5"	AVAILABLE JAN 2018								
6" 160mm	RBAPFP160F*	6"	AVAILABLE JAN 2018								
8" 225mm	RBAPFP225F*	8"	AVAILABLE JAN 2018								

PVCu Diaphragm Valves

Maximum working pressure: 10 bar (145 psi) at 20°C

Diaphragm Valve Plain Sockets EPDM Seals

Code: PSPVV



Nominal Size	Code	M	H	B	D	W	A	T
1/2"	RBA40A0200	17	100	86	43	96	90	16
3/4"	RBA40A0250	17	100	86	53	114	108	19
1"	RBA40A0320	21	107	86	60	122	116	22
1 1/4"	RBA40A0400	33	144	136	74	142	136	26
1 1/2"	RBA40A0500	33	144	136	83	160	154	31
2"	RBA40A0630	40.3	170	136	103	190	184	38

3 Way Ball Valve T Port Plain BS EPDM O Rings Plain Ends

Code: PSAQU



Nominal Size	Code	D
3/4"	RBA82T0250	3/4"
1"	RBA82T0320	1"
1 1/2"	RBA82T0500	1 1/2"
2"	RBA82T0630	2"

3 Way Ball Valve L Port Plain BS EPDM O Rings Plain Ends

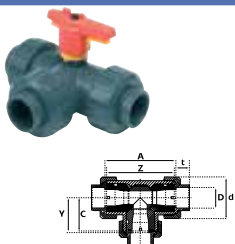
Code: PSAQU



Nominal Size	Code	D
3/4"	RBA83L0250	3/4"
1"	RBA83L0320	1"
1 1/2"	RBA83L0500	1 1/2"
2"	RBA83L0630	2"

3 Way Ball Valve L Port Plain Sockets EPDM Seals

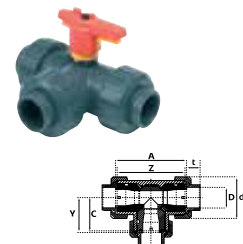
Code: PSPRA



Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
3/4"	RBA60A0250	120	126	20	70	82	52	63	60	10
1"	RBA60A0320	120	127	23	70	82	52	64	60	10
1 1/2"	RBA60A0500	162	171	32	101	108	73	86	81	10
2"	RBA60A0630	181	193	39	122	117	85	97	91	10

3 Way Ball Valve T Port Plain Sockets EPDM Seals

Code: PSPRA



Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
3/4"	RBA65A0250	120	126	20	70	82	52	63	60	10
1"	RBA65A0320	120	127	23	70	82	52	64	60	10
1 1/2"	RBA65A0500	162	171	32	101	108	73	86	81	10
2"	RBA65A0630	181	193	39	122	117	85	97	91	10

PVCu - Imperial

PVCu Diaphragm Valves

Maximum working pressure: 10 bar (145 psi) at 20°C

Swing Check Valve

Code: PSAQU



Nominal Size	Code	DN	PN	C	i DIN	i ANSI	S	α PN6	α PN10
2½" 75mm	RBA73A0750	65	10	46	145	140	20	80°	80°
3" 90mm	RBA73A0900	80	10	58	160	152	20	80°	77°
4" 110mm	RBA73A0110	100	10	74	190	190	23	79°	76°
5" 140mm	RBA73A0140	125	10	94	210	216	25	80°	76°
6" 160mm	RBA73A0160	150	6	112	240	241	30	77°	75°

Swing Check Valve With Spring

Code: PSAQU



Nominal Size	Code	DN	PN	C	i DIN	i ANSI	S	α PN6	α PN10
2½" 75mm	RBA74A0750	65	10	46	145	140	20	80°	80°
3" 90mm	RBA74A0900	80	10	58	160	152	20	80°	77°
4" 110mm	RBA74A0110	100	10	74	190	190	23	79°	76°
5" 140mm	RBA74A0140	125	10	94	210	216	25	80°	76°
6" 160mm	RBA74A0160	150	6	112	240	241	30	77°	75°

Electrically Actuated Double Union Ball Valve—Plain Sockets EPDM Seals

Code: PSPVV



Nominal Size	Code
½"	RBA24A0200
¾"	RBA24A0250
1"	RBA24A0320
1¼"	RBA24A0400
1½"	RBA24A0500
2"	RBA24A0630
2½"	RBA24A0750
3"	RBA24A0900
4"	RBA24A1100

Electrically Actuated Double Union Ball Valve—Plain Sockets EPDM Seals

Code: PSPVV



Nominal Size	Code
½"	RBA25A0200
¾"	RBA25A0250
1"	RBA25A0320
1¼"	RBA25A0400
1½"	RBA25A0500
2"	RBA25A0630
2½"	RBA25A0750
3"	RBA25A0900
4"	RBA25A1100

PVCu Actuated Double Union Ball Valves Fail Safe Closed

Valves up to 5" 10 bar (20°C), above 5" 6 bar (20°C)

Plain Sockets EPDM Seals

Code: PSPVV

Nominal Size

Code



1/2" RBA26A0200

3/4" RBA26A0250

1" RBA26A0320

1 1/4" RBA26A0400

1 1/2" RBA26A0500

2" RBA26A0630

2 1/2" RBA26A0750

3" RBA26A0900

4" RBA26A1100

FPM Seals

Code: PSPVV

Nominal Size

Code



1/2" RBA27A0200

3/4" RBA27A0250

1" RBA27A0320

1 1/4" RBA27A0400

1 1/2" RBA27A0500

2" RBA27A0630

2 1/2" RBA27A0750

3" RBA27A0900

4" RBA27A1100

Pressure relief valve - FPM Seals

Code: PSPVV

Nominal Size

Code

A

B

C



1/2" - 20mm RBAPRV0200 148 26 164

3/4" - 25mm RBAPRV0250 148 26 164

1" - 32mm RBAPRV0320 148 26 164

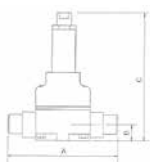
1 1/4" - 40mm RBAPRV0400 203 40 240

1 1/2" - 50mm RBAPRV0500 203 40 240

2" - 63mm RBAPRV0630 254 40 240

Up-rated spring available to increase maximum pressure to 10 bar.

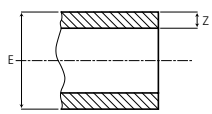
- Available in PVCu, ABS, PVCc, PP and PVDF.
- Diaphragms available in natural rubber, EPDM and FPM (Viton)
- Bi-Directional Design
- No metal parts in contact with line media
- Can be preset
- Can be installed in any position
- Also works as a Pressure Sustaining Valve
- Minimum set pressure 0.5 Bar (7 PSI) and maximum set pressure 6.8 Bar (100 PSI)
- Easily adjusted on site
- Connections Male Spigot: PVCu Imperial or Metric, ABS - Imperial, PVCc Metric, PP Metric, PVDF Metric.
- Mounting inserts provided in base as standard



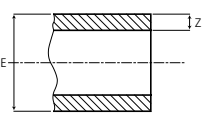
PVCu - Imperial

PVCu Metric Pressure Pipes 3m Lengths Plain Ended

3 Metre Pressure Pipe 10 Bar

Code: PSPVP	Nominal Size	Product code	Z	E	Weight (g / mtr)
 	40mm	RP10CL100400PE3	1.9	40	400
	50mm	RP10CL100500PE3	2.4	50	632
	63mm	RP10CL100630PE3	3.0	63	993
	75mm	RP10CL100750PE3	3.6	75	1397
	90mm	RP10CL100900PE3	4.3	90	2000
	110mm	RP10CL101100PE3	4.2	110	2417
	125mm	RP10CL101250PE3	4.8	125	3110
	140mm	RP10CL101400PE3	5.4	140	3977
	160mm	RP10CL101600PE3	6.2	160	5172
	200mm	RP10CL102000PE3	7.7	200	8035
	225mm	RP10CL102250PE3	8.6	225	10090
	250mm	RP10CL102500PE3	9.6	250	12495
	280mm	RP10CL102800PE3	10.7	280	15577
	315mm	RP10CL103150PE3	12.1	315	19760

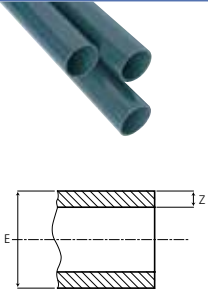
3 Metre Pressure Pipe 16 Bar

Code: PSPVP	Nominal Size	Product code	Z	E	Weight (g / mtr)
 	16mm	RP16CL160160PE3	1.2	16	122
	20mm	RP16CL160200PE3	1.5	20	157
	25mm	RP16CL160250PE3	1.9	25	242
	32mm	RP16CL160320PE3	2.4	32	392
	40mm	RP16CL160400PE3	3.0	40	602
	50mm	RP16CL160500PE3	3.7	50	927
	63mm	RP16CL160630PE3	4.7	63	1473
	75mm	RP16CL160750PE3	5.6	75	2085
	90mm	RP16CL160900PE3	6.7	90	2985
	110mm	RP16CL161100PE3	6.6	110	3657
	160mm	RP16CL161600PE3	9.5	160	7733

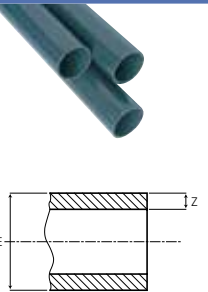
PVCu - Metric

PVCu Metric Pressure Pipes 3m Lengths Plain Ended

6 Metre Pressure Pipe 10 Bar

Code: PSPVP	Nominal Size	Product code	Z	E	Weight (g / mtr)
	40mm	RP10CL100400PE	1.9	40	400
	50mm	RP10CL100500PE	2.4	50	632
	63mm	RP10CL100630PE	3.0	63	993
	75mm	RP10CL100750PE	3.6	75	1397
	90mm	RP10CL100900PE	4.3	90	2000
	110mm	RP10CL101100PE	4.2	110	2417
	125mm	RP10CL101250PE	4.8	125	3110
	140mm	RP10CL101400PE	5.4	140	3977
	160mm	RP10CL101600PE	6.2	160	5172
	200mm	RP10CL102000PE	7.7	200	8035
	225mm	RP10CL102250PE	8.6	225	10090
	250mm	RP10CL102500PE	9.6	250	12495
	280mm	RP10CL102800PE	10.7	280	15577
	315mm	RP10CL103150PE	12.1	315	19760

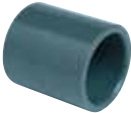
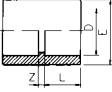
6 Metre Pressure Pipe 16 Bar

Code: PSPVP	Nominal Size	Product code	Z	E	Weight (g / mtr)
	16mm	RP16CL160160PE	1.2	16	122
	20mm	RP16CL160200PE	1.5	20	157
	25mm	RP16CL160250PE	1.9	25	242
	32mm	RP16CL160320PE	2.4	32	392
	40mm	RP16CL160400PE	3.0	40	602
	50mm	RP16CL160500PE	3.7	50	927
	63mm	RP16CL160630PE	4.7	63	1473
	75mm	RP16CL160750PE	5.6	75	2085
	90mm	RP16CL160900PE	6.7	90	2985
	110mm	RP16CL161100PE	6.6	110	3657
	160mm	RP16CL161600PE	9.5	160	7733

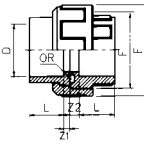
PVCu Metric Solvent Cement Fittings

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). *Maximum working pressure. 10 bar (145 psi) at 20°C.

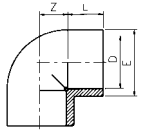
Socket Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	16	RFIMAI0160	14	3	23	10	9
	20	RFIMAI0200	16	3	27	10	15
	25	RFIMAI0250	19	3	33	10	23
	32	RFIMAI0320	22	3	41	10	36
	40	RFIMAI0400	26	3	50	10	60
	50	RFIMAI0500	31	3	61	10	85
	63	RFIMAI0630	38	3	75	10	145
	75	RFIMAI0750	44	4	88	1	222
	90	RFIMAI0900	51	5	106	1	353
	110	RFIMAI1100	61	6	129	1	605
	125	RFIMAI1250	69	7	145	1	840
	140	RFIMAI1400	76	8	161	1	1100

Union Plain. Unions up to 63mm 16 bar (20°C), above 63mm 10 bar (20°C). Supplied with EPDM O ring—for FPM O ring see Accessories section

Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	16	RFIBOI0160	14	3	10	3/4"	34	10	30
	20	RFIBOI0200	16	3	10	1"	42	10	42
	25	RFIBOI0250	19	3	10	1 1/4"	52	10	70
	32	RFIBOI0320	22	3	10	1 1/2"	59	10	97
	40	RFIBOI0400	26	3	12	2"	72	10	115
	50	RFIBOI0500	31	3	14	2 1/4"	79	10	216
	63	RFIBOI0630	38	3	18	2 3/4"	96	10	350
	75*	RFIBOI0750	44	3	18	3 1/2"	119	1	580
	90*	RFIBOI0900	51	5	18	4"	134	1	760
	110*	RFIBOI1100	61	5	18	5"	163	1	1340

Elbow 90° Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	16	RFIGOI0160	14	9	23	10	13
	20	RFIGOI0200	16	11	27	10	20
	25	RFIGOI0250	19	14	33	10	35
	32	RFIGOI0320	22	17	41	10	60
	40	RFIGOI0400	26	23	50	10	90
	50	RFIGOI0500	31	28	61	10	135
	63	RFIGOI0630	38	34	75	5	220
	75	RFIGOI0750	44	40	89	1	375
	90	RFIGOI0900	51	48	106	1	600
	110	RFIGOI1100	61	58	129	1	1060
	125	RFIGOI1250	69	66	145	1	1350
	140	RFIGOI1400	76	72	164	1	2000
	160	RFIGOI1600	86	81	188	1	3200
	200*	RFIGOI2000	106	102	232	1	5850
	225*	RFIGOI2250	119	115	258	1	7500
	250*	RFIGOI2500	131	188	287	1	12480
	280*	RFIGOI2800	147	210	325	1	17000
	315*	RFIGOI3150	164	236	359	1	23370

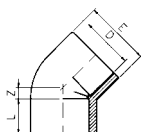
PVCu - Metric

PVCu Metric Solvent Cement Fittings

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). *Maximum working pressure. 10 bar (145 psi) at 20°C.

Elbow 45° Plain

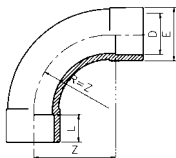
Code: PSPVF



Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
16	RFIGYI0160	14	6	23	10	10
20	RFIGYI0200	16	11	27	10	17
25	RFIGYI0250	19	6	33	10	30
32	RFIGYI0320	22	8	41	10	47
40	RFIGYI0400	26	10	50	10	77
50	RFIGYI0500	31	12	61	10	115
63	RFIGYI0630	38	15	75	10	190
75	RFIGYI0750	44	18	89	1	310
90	RFIGYI0900	51	21	106	1	485
110	RFIGYI1100	61	25	128	1	835
125	RFIGYI1250	69	27	145	1	1080
140	RFIGYI1400	76	32	164	1	1640
160	RFIGYI1600	86	36	184	1	2100
200*	RFIGYI2000	106	43	232	1	5000
225*	RFIGYI2250	119	49	258	1	6200
250*	RFIGYI2500	131	58	286	1	7700
280*	RFIGYI2800	146	62	320	1	10460
315*	RFIGYI3150	164	66	359	1	15500

Bend 90° Short Radius Plain

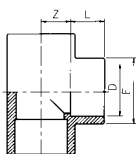
Code: PSPVF



Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
20	RFICUI0200	16	40	27	1	30
25	RFICUI0250	19	50	33	1	50
32	RFICUI0320	22	64	41	1	92
40	RFICUI0400	26	80	50	1	165
50	RFICUI0500	31	100	61	1	270
63	RFICUI0630	38	126	76	1	490
75	RFICUI0750	44	150	90	1	990
90	RFICUI0900	51	180	110	1	1600
110	RFICUI1100	61	220	132	1	2150

Tee 90° Plain

Code: PSPVF

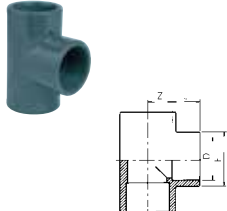


Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
16	RFITII0160	14	9	24	10	15
20	RFITII0200	16	11	28	10	25
25	RFITII0250	19	14	34	10	44
32	RFITII0320	22	17	42	10	75
40	RFITII0400	26	21	51	10	120
50	RFITII0500	31	26	61	10	172
63	RFITII0630	38	33	75	5	300
75	RFITII0750	44	39	89	1	495
90	RFITII0900	51	47	106	1	790
110	RFITII1100	61	57	129	1	1330
125	RFITII1250	69	67	146	1	2100

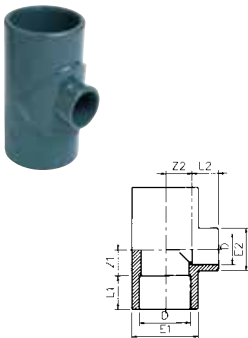
PVCu Metric Solvent Cement Fittings

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). *Maximum working pressure. 10 bar (145 psi) at 20°C.

Tee 90° Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	140	RFITII1400	76	71	163	1	2550
	160	RFITII1600	86	81	188	1	4100
	200*	RFITII2000	106	102	232	1	7200
	225*	RFITII2250	119	114	258	1	9700
	250*	RFITII2500	131	128	286	1	13250
	280*	RFITII2800	146	144	319	1	17840
	315*	RFITII3150	164	162	360	1	25300

Tee 90° Reduced on Branch Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Weight (GR)
	20 x 16	RFITRI020A	16	14	11	26
	25 x 16	RFITRI025A	19	14	14	40
	25 x 20	RFITRI025B	19	16	14	42
	32 x 16	RFITRI032A	22	14	17	68
	32 x 20	RFITRI032B	22	16	17	69
	32 x 25	RFITRI032C	22	19	17	70
	40 x 16	RFITRI040A	26	14	21	100
	40 x 20	RFITRI040B	26	16	21	105
	40 x 25	RFITRI040C	26	19	21	107
	40 x 32	RFITRI040D	26	22	21	112
	50 x 20	RFITRI050B	31	16	26	155
	50 x 25	RFITRI050C	31	19	26	157
	50 x 32	RFITRI050D	31	22	26	162
	50 x 40	RFITRI050E	31	26	26	168
	63 x 25	RFITRI063C	38	19	33	270
	63 x 32	RFITRI063D	38	22	33	275
	63 x 40	RFITRI063E	38	26	33	277
	63 x 50	RFITRI063F	38	31	33	278
	75 x 40	RFITRI075E	44	26	39	465
	75 x 50	RFITRI075F	44	31	39	465
	75 x 63	RFITRI075G	44	38	39	478
	90 x 50	RFITRI090F	51	31	47	703
	90 x 63	RFITRI090G	51	38	47	713
	90 x 75	RFITRI090H	51	44	47	730
	110 x 50	RFITRI110F	61	31	57	1250
	110 x 63	RFITRI110G	61	38	57	1265
	110 x 75	RFITRI110H	61	44	57	1260
	110 x 90	RFITRI110I	61	51	57	1295
	160 x 90	RFITRI160I	86	51	82	3750
	160 x 110	RFITRI160L	86	61	82	3800
	160 x 140	RFITRI160N	86	76	82	3940

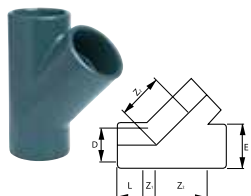
PVCu - Metric

PVCu Metric Solvent Cement Fittings

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). *Maximum working pressure. 10 bar (145 psi) at 20°C.

Tee 45° Plain

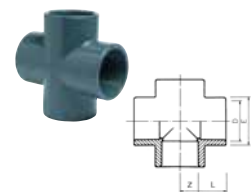
Code: PSPVF



Nominal Size	Code	L	Z	E	Weight (GR)
20	RFITYI0200	16	7	29	36
25	RFITYI0250	19	7	36	59
32	RFITYI0320	22	8	44	103
40	RFITYI0400	26	10	54	125
50	RFITYI0500	31	12	65	254
63	RFITYI0630	38	14	80	420
75	RFITYI0750	44	18	101	513
90	RFITYI0900	51	20	122	1100
110	RFITYI1100	61	27	149	1950

Cross 90° Plain

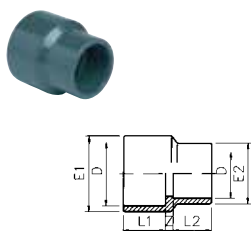
Code: PSPVF



Nominal Size	Code	L	Z	E	Weight (GR)
20	RFICXI0200	16	11	28	30
25	RFICXI0250	19	14	34	60
32	RFICXI0320	22	17	42	110
40	RFICXI0400	26	21	51	180
50	RFICXI0500	31	26	61	270
63	RFICXI0630	38	33	75	510

Reducing Socket Plain

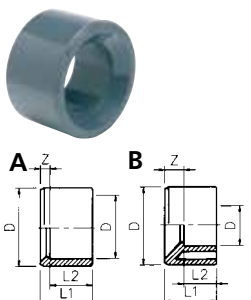
Code: PSPVF



Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
20 x 16	RFIMRI020A	16	14	6	25	23	10	15
25 x 20	RFIMRI025B	19	16	6	32	28	10	25
32 x 25	RFIMRI032C	22	19	6	40	33	10	35
40 x 32	RFIMRI040D	26	22	10	50	41	10	75
50 x 40	RFIMRI050E	31	26	12	63	50	10	110
63 x 40	RFIMRI063E	38	26	17	75	50	10	140
63 x 50	RFIMRI063F	38	31	12	75	61	10	130
75 x 63	RFIMRI075G	44	38	18	90	75	1	295
90 x 75	RFIMRI090H	51	44	16	100	88	1	525
110 x 90	RFIMRI110I	61	51	17	125	106	1	530
125 x 110	RFIMRI125L	69	61	17	140	129	1	580
140 x 110	RFIMRI140L	76	61	18	160	129	1	905

Reducing Bush Plain

Code: PSPVF



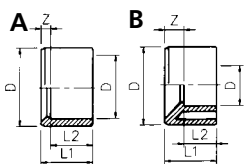
Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
20 x 16	RFIRCI020A	16	14	2	A	10	3
25 x 16	RFIRCI025A	19	14	5	B	10	10
25 x 20	RFIRCI025B	19	16	3	A	10	6
32 x 16	RFIRCI032A	22	14	8	B	10	15
32 x 20	RFIRCI032B	22	16	6	B	10	15
32 x 25	RFIRCI032C	22	19	3	A	10	10
40 x 20	RFIRCI040B	26	16	10	B	10	25
40 x 25	RFIRCI040C	26	19	7	B	10	30
40 x 32	RFIRCI040D	26	22	4	A	10	16

PVCu Metric Solvent Cement Fittings

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). *Maximum working pressure. 10 bar (145 psi) at 20°C.

Socket Plain

Code: PSPVF



Nominal Size	Code	L	Z	E		Pack Qty	Weight (GR)
50 x 40	RFIRCI050E	31	26	5	A	10	30
63 x 32	RFIRCI063D	38	22	16	B	10	83
63 x 40	RFIRCI063E	38	26	12	B	10	78
63 x 50	RFIRCI063F	38	31	7	A	10	61
75 x 40	RFIRCI075E	44	26	18	B	1	120
75 x 50	RFIRCI075F	44	31	13	B	1	122
75 x 63	RFIRCI075G	44	38	6	A	1	80
90 x 50	RFIRCI090F	51	31	20	B	1	210
90 x 63	RFIRCI090G	51	38	13	B	1	195
90 x 75	RFIRCI090H	51	44	7	A	1	140
110 x 63	RFIRCI110G	61	38	23	B	1	372
110 x 75	RFIRCI110H	61	44	17	B	1	370
110 x 90	RFIRCI110I	61	51	10	A	1	275
125 x 75	RFIRCI125H	69	44	25	B	1	412
125 x 90	RFIRCI125I	69	51	18	B	1	450
125 x 110	RFIRCI125L	69	61	8	A	1	275
140 x 90	RFIRCI140I	76	51	25	B	1	550
140 x 110	RFIRCI140L	76	61	15	B	1	510
140 x 125	RFIRCI140M	76	69	7	A	1	320
160 x 110	RFIRCI160L	86	61	25	B	1	820
160 x 125	RFIRCI160M	86	69	17	B	1	725
160 x 140	RFIRCI160N	86	76	10	A	1	555
200 x 160*	RFIRCI200O	96	86	10	A	1	710
225 x 160*	RFIRCI225O	119	86	33	B	1	1700
225 x 200*	RFIRCI225P	119	106	13	A	1	1360
250 x 160*	RFIRCI250O	132	87	45	B	1	3050
250 x 200*	RFIRCI250P	132	97	35	A	1	3500
250 x 225*	RFIRCI250Q	132	107	25	A	1	2150
280 x 225*	RFIRCI280Q	146	119	27	B	1	2630
315 x 200*	RFIRCI315P	165	107	58	B	1	8650
315 x 225*	RFIRCI315Q	165	120	45	B	1	8100
315 x 250*	RFIRCI315R	165	132	33	B	1	5080

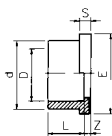
PVCu - Metric

PVCu Flanges

For backing rings and gaskets see Accessories section

Stub Flange (serrated face) Plain

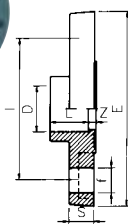
Code: PSPVF



Nominal Size	Code	L	Z	D	S	E	Pack Qty	Weight (GR)
20	RFIQR10200	16	3	27	6	34	10	10
25	RFIQR10250	19	3	33	7	41	10	16
32	RFIQR10320	22	3	41	7	50	10	25
40	RFIQR10400	26	3	50	8	61	10	40
50	RFIQR10500	31	3	61	8	73	10	60
63	RFIQR10630	38	3	76	9	90	10	105
75	RFIQR10750	44	3	90	10	106	1	160
90	RFIQR10900	51	5	107	11	125	1	280
110	RFIQR11100	61	5	131	12	150	1	445
125	RFIQR11250	74	4	146	12	168	1	540
140	RFIQR11400	78	6	163	13	188	1	740
160	RFIQR11600	86	7	185	13	213	1	1000
200*	RFIQR12000	106	7	232	18	254	1	2000
225*	RFIQR12250	119	7	248	19	274	1	1700
250*	RFIQR12500	131	9	279	20	308	1	2300
280*	RFIQR12800	147	15	307	32	327	1	3650
315*	RFIQR13150	165	16	346	32	377	1	4950

Full Faced Flange Drilled to BS4504 NP10/16 Plain

Code: PSPVF

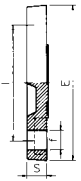


Nominal Size	Code	L	Z	E	I	F	HOLES	Weight (GR)
20	RFIFFI0200	16	5	95	65	14	4	78
25	RFIFFI0250	19	5	105	75	14	4	105
32	RFIFFI0320	22	5	115	85	14	4	143
40	RFIFFI0400	26	5	142	100	18	4	220
50	RFIFFI0500	31	5	152	110	18	4	280
63	RFIFFI0630	38	5	165	125	18	4	380
75	RFIFFI0750	44	6	185	145	18	4	505
90	RFIFFI0900	51	7	200	160	18	8	685
110	RFIFFI1100	61	8	220	180	18	8	940

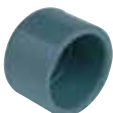
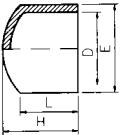
PVCu Metric Solvent Cement Fittings

Fittings up to 160mm 16 bar (20°C), fittings 200mm to 315mm 10 bar (20°C). *Maximum working pressure. 10 bar (145 psi) at 20°C.

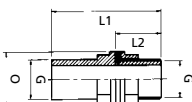
Blanking Flange Drilled to BS4504 NP10/16. Operating Pressure Show at 20°C

Code: PSPVF	Nominal Size	Code	E	S	I	F	HOLES	Weight (GR)
	20	RFIFCI0200	95	11	65	14	4	76
	25	RFIFCI0250	105	12	75	14	4	104
	32	RFIFCI0320	115	14	85	14	4	140
	40	RFIFCI0400	142	15	100	18	4	220
	50	RFIFCI0500	152	16	110	18	4	280
	63	RFIFCI0630	165	18	125	18	4	370
	75	RFIFCI0750	185	19	145	18	4	495
	90	RFIFCI0900	200	20	160	18	8	655
	110	RFIFCI1100	220	22	180	18	8	850
	125	RFIFCI1250	230	24	190	18	8	950
	140	RFIFCI1400	250	26	210	18	8	1165
	160	RFIFCI1600	285	28	240	22	8	1610
	200	RFIFCI2000	340	30	295	22	8	2480
	225	RFIFCI2250	340	30	295	22	8	2480

Cap Plain

Code: PSPVF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
	16	RFICAI0160	14	26	23	10	7
	20	RFICAI0200	16	30	27	10	10
	25	RFICAI0250	19	34	33	10	18
	32	RFICAI0320	22	38	42	10	30
	40	RFICAI0400	26	43	50	10	45
	50	RFICAI0500	31	48	61	10	65
	63	RFICAI0630	38	56	75	10	110
	75	RFICAI0750	44	67	89	1	208
	90	RFICAI0900	51	78	106	1	325
	110	RFICAI1100	61	81	128	1	500
	125	RFICAI1250	69	103	145	1	670
	140	RFICAI1400	76	114	162	1	920
	160*	RFICAI1600	86	127	181	1	1120
	200*	RFICAI2000	106	145	227	1	1680
	225*	RFICAI2250	120	165	255	1	2978

Tank Connector Metric/Imperial

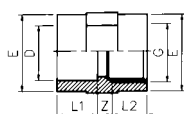
Code: PSPVF	Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)
	20 x 1/2"	BSPF	RFITCI0200	77	42	38	10	41
	25 x 3/4"	BSPF	RFITCI0250	77	42	42	10	52
	32 x 1"	BSPF	RFITCI0320	103	55	55	10	108
	40 x 1 1/4"	BSPF	RFITCI0400	121	70	65	10	153
	50 x 1 1/2"	BSPF	RFITCI0500	128	73	72	10	216
	63 x 2"	BSPF	RFITCI0630	154	82	93	10	370
	90 x 3"	BSPF	RFITCI0900	202	110	125	1	768
	110 x 4"	BSPF	RFITCI1100	230	140	154	1	1421

PVCu - Metric

PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C)

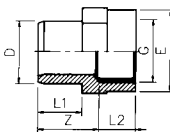
Socket Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
 	16 x 3/8"	BSPF	RFPMAP016A	14	11	6	23	10	9
	20 x 1/2"	BSPF	RFPMAP020B	17	15	4	28	10	18
	25 x 3/4"	BSPF	RFPMAP025C	20	16	6	34	10	25
	32 x 1"	BSPF	RFPMAP032D	23	19	7	42	10	38
	40 x 1 1/4"	BSPF	RFPMAP040E	28	21	7	51	10	60
	50 x 1 1/2"	BSPF	RFPMAP050F	32	21	7	61	10	95
	63 x 2"	BSPF	RFPMAP063G	39	26	7	75	10	165
	75 x 2 1/2"	BSPF	RFPMAP075H	44	30	8	89	1	215
	90 x 3"	BSPF	RFPMAP090I	51	33	9	106	1	340
	110 x 4"	BSPF	RFPMAP110L	61	39	10	129	1	550

Socket Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSPVF	Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)	
 	20 x ½"	BSPF	RFRMER0200	16	15	4	28	10	22
	25 x ¾"	BSPF	RFRMER0250	19	16	6	34	10	33
	32 x 1"	BSPF	RFRMER0320	22	19	6	42	10	50
	40 x 1¼"	BSPF	RFRMER0400	27	21	8	51	10	76
	50 x 1½"	BSPF	RFRMER0500	32	21	13	61	10	115
	63 x 2"	BSPF	RFRMER0630	39	26	15	75	10	189

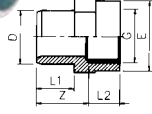
Spigot Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)	
 	16 x 3/8"	BSPF	RFPAPF016A	14	12	23	22	10	16
	20 x 1/2"	BSPF	RFPAPF020B	16	15	28	24	10	20
	20 x 3/4"	BSPF	RFPAPF020C	16	16	34	24	10	25
	25 x 1/2"	BSPF	RFPAPF025B	19	15	28	27	10	20
	25 x 3/4"	BSPF	RFPAPF025C	19	16	34	27	10	25
	25 x 1"	BSPF	RFPAPF025D	19	19	42	27	10	40
	32 x 3/4"	BSPF	RFPAPF032C	22	16	34	30	10	32
	32 x 1"	BSPF	RFPAPF032D	22	19	42	30	10	43
	40 x 1"	BSPF	RFPAPF040D	26	19	42	36	10	50
	40 x 1 1/4"	BSPF	RFPAPF040E	26	21	51	36	10	65
	50 x 1 1/2"	BSPF	RFPAPF050F	31	21	58	41	10	73
	50 x 2"	BSPF	RFPAPF050G	31	26	72	41	10	80
	63 x 2"	BSPF	RFPAPF063G	38	26	72	48	10	135
	75 x 2"	BSPF	RFPAPF075G	44	26	72	53	1	175
	75 x 2 1/2"	BSPF	RFPAPF075H	44	30	89	58	1	225
	75 x 3"	BSPF	RFPAPF075I	44	33	103	58	1	295
	90 x 2 1/2"	BSPF	RFPAPF090H	51	30	89	65	1	275
	90 x 3"	BSPF	RFPAPF090I	51	33	103	65	1	310
	90 x 4"	BSPF	RFPAPF090L	51	39	130	65	1	450
	110 x 3"	BSPF	RFPAPF110I	61	33	103	76	1	440
	110 x 4"	BSPF	RFPAPF110L	61	39	130	76	1	480

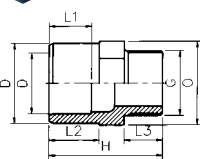
PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C)

Spigot Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSPVF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	20 x 1/2"	BSPF	RFRAER0200	16	15	28	24	10	24
	25 x 3/4"	BSPF	RFRAER0250	19	16	34	27	10	33
	32 x 1"	BSPF	RFRAER0320	22	19	42	30	10	55
	40 x 1 1/4"	BSPF	RFRAER0400	27	21	51	36	10	81
	50 x 1 1/2"	BSPF	RFRAER0500	32	21	58	41	10	93
	63 x 2"	BSPF	RFRAER0630	39	26	72	44	10	159

Socket or Spigot Plain/BSP Male Threaded

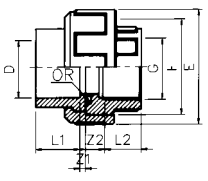
Code: PSPVF	Nominal Size	Code	L1	L2	L3	H	O	Pack Qty	Weight (GR)
	12 x 16 x 3/8"	RFPAMP012A	12	14	11	36	22	10	9
	16 x 20 x 3/8"	RFPAMP016A	14	16	11	40	24	10	10
	16 x 20 x 1/2"	RFPAMP016B	14	16	15	43	24	10	11
	20 x 25 x 3/8"	RFPAMP020A	16	19	11	43	30	10	15
	20 x 25 x 1/2"	RFPAMP020B	16	19	15	46	30	10	15
	20 x 25 x 3/4"	RFPAMP020C	16	19	16	47	30	10	18
	25 x 32 x 1/2"	RFPAMP025B	19	22	15	49	36	10	25
	25 x 32 x 3/4"	RFPAMP025C	19	22	16	50	36	10	26
	25 x 32 x 1"	RFPAMP025D	19	22	19	53	36	10	30
	32 x 40 x 3/4"	RFPAMP032C	22	26	16	54	46	10	35
	32 x 40 x 1"	RFPAMP032D	22	26	19	57	46	10	40
	32 x 40 x 1 1/4"	RFPAMP032E	22	26	21	60	46	10	45
	40 x 50 x 1"	RFPAMP040D	26	31	19	64	55	10	68
	40 x 50 x 1 1/4"	RFPAMP040E	26	31	21	67	55	10	75
	40 x 50 x 1 1/2"	RFPAMP040F	26	31	21	67	55	10	77
	50 x 63 x 1 1/4"	RFPAMP050E	31	38	21	74	65	10	110
	50 x 63 x 1 1/2"	RFPAMP050F	31	38	21	74	65	10	113
	50 x 63 x 2"	RFPAMP050G	31	38	26	78	65	10	120
	63 x 75 x 1 1/2"	RFPAMP063F	38	44	21	80	80	1	160
	63 x 75 x 2"	RFPAMP063G	38	44	26	84	80	1	150
	63 x 75 x 2 1/2"	RFPAMP063H	38	44	30	91	80	1	170
	75 x 90 x 2"	RFPAMP075G	44	52	26	94	95	1	270
	75 x 90 x 2 1/2"	RFPAMP075H	44	52	30	99	95	1	270
	75 x 90 x 3"	RFPAMP075I	44	52	33	102	95	1	280
	90 x 110 x 2 1/2"	RFPAMP090H	51	61	30	110	115	1	460
	90 x 110 x 3"	RFPAMP090I	51	61	33	113	115	1	475
	90 x 110 x 4"	RFPAMP090L	51	61	39	118	115	1	485
	110 x 125 x 3"	RFPAMP110I	61	66	33	115	130	1	475
	110 x 125 x 4"	RFPAMP110L	61	66	39	120	130	1	500

PVCu - Metric

PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C)

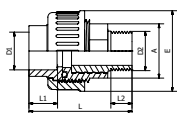
Union plain/BSP Female Threaded. Maximum working pressure: 10 bar (145 psi) at 20°C Supplied with EPDM O ring—for FPM O ring see Accessories section

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	F	E	Pack Qty	Weight (GR)
 	16 x 3/8"	BSPF	RFPBOP016A	14	11	3	14	3/4"	34	10	30
	20 x 1/2"	BSPF	RFPBOP020B	16	15	3	11	1"	42	10	42
	25 x 3/4"	BSPF	RFPBOP025C	19	16	3	13	1 1/4"	52	10	70
	32 x 1"	BSPF	RFPBOP032D	22	19	3	13	1 1/2"	59	10	95
	40 x 1 1/4"	BSPF	RFPBOP040E	26	21	3	17	2"	72	10	155
	50 x 1 1/2"	BSPF	RFPBOP050F	31	21	3	24	2 1/4"	79	10	240
	63 x 2"	BSPF	RFPBOP063G	38	26	3	30	2 3/4"	96	10	405
	75 x 2 1/2"*	BSPF	RFPBOP075H	44	30	3	32	3 1/2"	119	1	625
	90 x 3"*	BSPF	RFPBOP090I	51	33	5	36	4"	134	1	865
	110 x 4"*	BSPF	RFPBOP110L	61	39	5	40	5"	163	1	1340

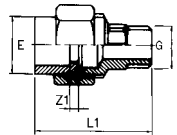
PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C), Unions up to 63mm 16 bar (20°C), above 63mm 10 bar (20°C)

Composite Union Plain Metric/BSP Male Brass Taper Threaded with Plastic Nut

Code: PSPVF	Nominal Size	G	Code	D1	D2	L1	L2	L	A	E	Pack Qty	Weight (GR)
 	20 x 1/2"	BSPTM	RGRBNG020B	20	1/2"	16	14	47	30	42	1	
	25 x 3/4"	BSPTM	RGRBNG025C	25	3/4"	19	16	52	25	53	1	161
	32 x 1"	BSPTM	RGRBNG032D	32	1"	22	19	58	46	59	1	
	40 x 1 1/4"	BSPTM	RGRBNG040E	40	1 1/4"	26	23	65	55	72	1	
	50 x 1 1/2"	BSPTM	RGRBNG050F	50	1 1/2"	32	23	71	65	81	1	451
	63 x 2"	BSPTM	RGRBNG063G	63	2"	38	23	85	80	99	1	670

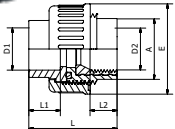
Composite Union Plain Metric/BSP Male Brass Taper Threaded

Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
 	20 x 1/2"	BSPTM	RGRBNG020B	28	58	3	1	175
	25 x 3/4"	BSPTM	RGRBNG025C	36	69	3	1	238
	32 x 1"	BSPTM	RGRBNG032D	42	72	3	1	324
	40 x 1 1/4"	BSPTM	RGRBNG040E	53	86	3	1	469
	50 x 1 1/2"	BSPTM	RGRBNG050F	59	92	3	1	595
	63 x 2"	BSPTM	RGRBNG063G	74	109	3	1	982
	90 x 3"	BSPTM	RGRBNG090I	105	139	5	1	2184

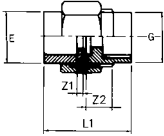
PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C), Unions up to 63mm 16 bar (20°C), above 63mm 10 bar (20°C)

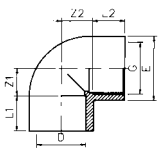
Composite Union Plain Metric/BSP Female Brass Threaded with Plastic Nut

Code: PSPVF	Nominal Size	G	Code	D1	D2	L1	L2	L	A	E	Pack Qty	Weight (GR)
	20 x 1/2"	BSPTM	RGRBNG020B	20	1/2"	16	14	47	30	42	1	
	25 x 3/4"	BSPTM	RGRBNG025C	25	3/4"	19	16	52	25	53	1	120
	32 x 1"	BSPTM	RGRBNG032D	32	1"	22	19	58	46	59	1	
	40 x 1 1/4"	BSPTM	RGRBNG040E	40	1 1/4"	26	23	65	55	72	1	
	50 x 1 1/2"	BSPTM	RGRBNG050F	50	1 1/2"	32	23	71	65	81	1	316
	63 x 2"	BSPTM	RGRBNG063G	63	2"	38	23	85	80	99	1	460

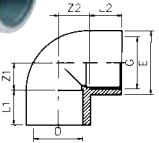
Composite Union Plain Metric/BSP Female Brass Threaded

Code: PSPVF	Nominal Size	G	Code	E	L1	Z1	Z2	Pack Qty	Weight (GR)
	20 x 1/2"	BSPF	RGRBBG020B	28	45	3	8	1	165
	25 x 3/4"	BSPF	RGRBBG025C	36	49	3	8	1	290
	32 x 1"	BSPF	RGRBBG032D	42	52	3	8	1	310
	40 x 1 1/4"	BSPF	RGRBBG040E	53	60	3	8	1	450
	50 x 1 1/2"	BSPF	RGRBBG050F	59	68	3	9	1	490
	63 x 2"	BSPF	RGRBBG063G	74	81	3	10	1	950
	90 x 3"	BSPF	RGRBBG090I	105	103	5	14	1	1663

Elbow 90° Plain/BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	16 x 3/8"	BSPF	RFPGOP016A	14	11	9	12	23	10	13
	20 x 1/2"	BSPF	RFPGOP020B	16	15	11	12	28	10	20
	25 x 3/4"	BSPF	RFPGOP025C	19	16	14	17	34	10	35
	32 x 1"	BSPF	RFPGOP032D	22	19	17	20	42	10	60
	40 x 1 1/4"	BSPF	RFPGOP040E	26	21	21	26	51	10	90
	50 x 1 1/2"	BSPF	RFPGOP050F	31	21	26	36	61	10	155
	63 x 2"	BSPF	RFPGOP063G	38	26	33	45	75	10	265
	75 x 2 1/2"	BSPF	RFPGOP075H	44	30	39	53	89	1	400
	90 x 3"	BSPF	RFPGOP090I	51	33	47	65	106	1	670
	110 x 4"	BSPF	RFPGOP110L	61	39	57	79	129	1	1055

Elbow 90° Plain/BSP Female with Stainless Steel Reinforcing Ring

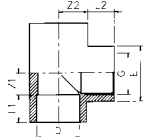
Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	20 x 1/2"	BSPF	RFRGER0200	16	15	11	12	28	10	24
	25 x 3/4"	BSPF	RFRGER0250	19	16	14	17	34	10	43
	32 x 1"	BSPF	RFRGER0320	22	19	17	20	42	10	72
	40 x 1 1/4"	BSPF	RFRGER0400	26	21	21	26	51	10	106
	50 x 1 1/2"	BSPF	RFRGER0500	31	21	26	36	61	10	175
	63 x 2"	BSPF	RFRGER0630	38	26	33	45	75	10	289

PVCu - Metric

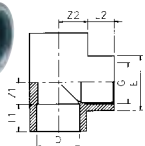
PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C), Unions up to 63mm 16 bar (20°C), above 63mm 10 bar (20°C)

Tee 90° plain/BSP Female Threaded Branch

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
 	16 x 3/8"	BSPF	RFPTIP016A	14	11	9	12	23	10	17
	20 x 1/2"	BSPF	RFPTIP020B	16	15	11	12	28	10	30
	25 x 3/4"	BSPF	RFPTIP025C	19	16	14	17	34	10	45
	32 x 1"	BSPF	RFPTIP032D	22	19	17	20	42	10	75
	40 x 1 1/4"	BSPF	RFPTIP040E	26	21	21	26	51	10	120
	50 x 1 1/2"	BSPF	RFPTIP050F	31	21	26	36	61	10	195
	63 x 2"	BSPF	RFPTIP063G	38	26	33	45	75	5	335
	75 x 2 1/2"	BSPF	RFPTIP075H	44	30	39	53	89	1	505
	90 x 3"	BSPF	RFPTIP090I	51	33	47	65	106	1	810
	110 x 4"	BSPF	RFPTIP110L	61	39	57	79	129	1	1325

Tee 90° Plain/BSP Female Threaded Branch with Stainless Steel Reinforcing Ring

Code: PSPVF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
 	20 x 1/2"	BSPF	RFRTER0200	16	15	11	12	28	10	34
	25 x 3/4"	BSPF	RFRTER0250	19	16	14	17	34	10	53
	32 x 1"	BSPF	RFRTER0320	22	19	17	20	42	10	87
	40 x 1 1/4"	BSPF	RFRTER0400	27	21	21	26	51	10	136
	50 x 1 1/2"	BSPF	RFRTER0500	32	21	26	36	61	10	215
	63 x 2"	BSPF	RFRTER0630	39	26	33	45	75	5	359

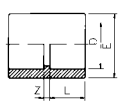
Adaptor Bush Metric Plain/BSP

Code: PSPVF	Nominal Size	Code	Pack Qty	Weight (GR)
	25 x 1/2"	RGRRCG025B	10	8
	32 x 3/4"	RGRRCG032C	10	10
	40 x 1"	RGRRCG040D	10	17
	50 x 1 1/4"	RGRRCG050E	10	30
	63 x 1 1/2"	RGRRCG063F	10	72
	75 x 2"	RGRRCG075G	1	105
	90 x 2 1/2"	RGRRCG090H	1	154
	110 x 3"	RGRRCG110I	1	300

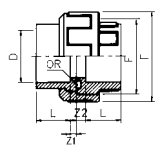
PVCu Metric Solvent Cement Fittings

Fittings up to 110mm 16bar (20°C), Unions up to 63mm 16 bar (20°C), above 63mm 10 bar (20°C)

Adaptor Socket Plain

Code: PSPVF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	1/2" x 20	RFBMAB0200	16	3	27	10	16
	3/4" x 25	RFBMAB0250	19	3	33	10	25
	1" x 32	RFBMAB0320	22	3	41	10	39
	1 1/4" x 40	RFBMAB0400	27	3	52	10	53
	1 1/2" x 50	RFBMAB0500	32	3	61	10	101
	2" x 63	RFBMAB0630	39	3	75	10	178
	3" x 90	RFBMAB0900	52	5	110	1	381
	4" x 110	RFBMAB1100	67	6	133	1	750
	6" x 160	RFBMAB1600	89	8	198	1	1695

Union Plain Unions up to 63mm 15 bar (20°C), above 63mm 10 bar (20°C)

Code: PSPVF	Nominal Size	Code	L	Z1	Z2	F	E	Weight (GR)
	1/2" x 20	RFBBOB0200	16	3	10	1"	42	42
	3/4" x 25	RFBBOB0250	19	3	10	1 1/4"	52	70
	1" x 32	RFBBOB0320	22	3	10	1 1/2"	59	97
	1 1/4" x 40	RFBBOB0400	26	3	12	2"	72	155
	1 1/2" x 50	RFBBOB0500	31	3	14	2 1/4"	79	216
	2" x 63	RFBBOB0630	38	3	18	2 3/4"	100	350
	3" x 90*	RFBBOB0900	51	5	18	4"	134	760
	4" x 110*	RFBBOB1100	61	5	18	5"	163	1340

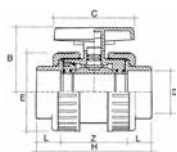
PVCu - Metric

PVCu Valves

Valves from 16mm - 63mm 16 bar (20°C), above 63mm 10 bar (20°C). For valve spares see Accessories section

Industrial Double Union Ball Valve Plain Sockets EPDM Seals Metric

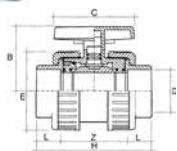
Code: PSPVV



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
16	RBI22I0160	50	51	16	46	78	65	16	140
20	RBI22I0200	50	51	16	46	78	65	16	140
25	RBI22I0250	60	58	19	52	90	70	16	200
32	RBI22I0320	68	65	22	60	104	82	16	300
40	RBI22I0400	80	76	26	68	120	92	16	450
50	RBI22I0500	94	88	31	78	140	105	16	690
63	RBI22I0630	115	104	38	93	169	123	16	1150
75	RBI22I0750	168	137	44	139	227	168	10	3100
90	RBI22I0900	168	138	51	139	242	168	10	3250
110	RBI22I1100	210	166	61	160	282	190	10	5500

Industrial Double Union Ball Valve Plain Sockets FPM Seals Metric

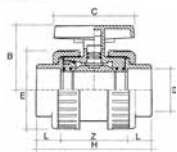
Code: PSPVV



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
16	RBI23I0160	50	51	16	46	78	65	16	140
20	RBI23I0200	50	51	16	46	78	65	16	140
25	RBI23I0250	60	58	19	52	90	70	16	200
32	RBI23I0320	68	65	22	60	104	82	16	300
40	RBI23I0400	80	76	26	68	120	92	16	450
50	RBI23I0500	94	88	31	78	140	105	16	690
63	RBI23I0630	115	104	38	93	169	123	16	1150
75	RBI23I0750	168	137	44	139	227	168	10	3100
90	RBI23I0900	168	138	51	139	242	168	10	3250
110	RBI23I1100	210	166	61	160	282	190	10	5500

Economy Double Union Ball Valve Plain Sockets EPDM Seals Metric

Code: PSPVV



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
16	RBI21I0160	50	51	16	46	78	65	16	140
20	RBI21I0200	50	51	16	46	78	65	16	140
25	RBI21I0250	60	58	19	52	90	70	16	200
32	RBI21I0320	68	65	22	60	104	82	16	300
40	RBI21I0400	80	76	26	68	120	92	16	450
50	RBI21I0500	94	88	31	78	140	105	16	690
63	RBI21I0630	115	104	38	93	169	123	16	1150
75	RBI21I0750	168	137	44	139	227	168	10	3100
90	RBI21I0900	168	138	51	139	242	168	10	3250
110	RBI21I1100	210	166	61	160	282	190	10	5500

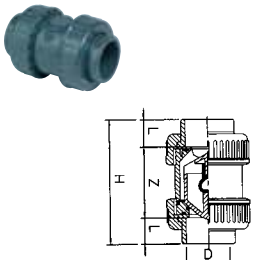
PVCu Valves

Valves from 16mm - 63mm 16 bar (20°C), above 63mm 10 bar (20°C). For valve spares see Accessories section

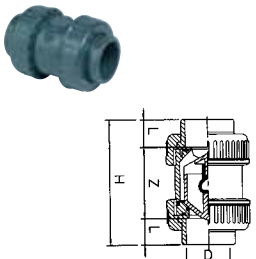
Economy Single Union Ball Valve Plain Sockets EPDM Seals

Code: PSPVV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	16	RBI11I0160	50	51	16	46	78	65	16	140
	20	RBI11I0200	50	51	16	46	78	65	16	140
	25	RBI11I0250	60	58	19	52	90	70	16	200
	32	RBI11I0320	68	65	22	60	104	82	16	300
	40	RBI11I0400	80	76	26	68	120	92	16	450
	50	RBI11I0500	94	88	31	78	140	105	16	690
	63	RBI11I0630	115	104	38	93	169	123	16	1150
	75	RBI11I0750	168	137	44	139	227	168	10	3100
	90	RBI11I0900	168	138	51	139	242	168	10	3250
	110	RBI11I1100	210	166	61	160	282	190	10	5500

Check Valve Plain Sockets with Stainless Steel Spring EPDM Seals Metric

Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	RBI30I0160	16	46	78	110
	20	RBI30I0200	16	46	78	110
	25	RBI30I0250	19	52	90	180
	32	RBI30I0320	22	60	104	250
	40	RBI30I0400	26	68	120	380
	50	RBI30I0500	31	78	140	600
	63	RBI30I0630	38	93	169	1000
	75	RBI30I0750	44	139	227	2800
	90	RBI30I0900	51	139	242	3000
	110	RBI30I1100	61	160	282	4500

Check Valve Plain Sockets with PTFE Coated Spring EPDM Seals Metric

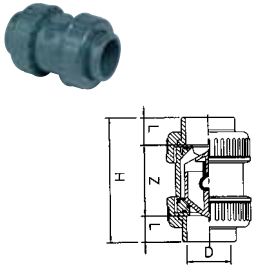
Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	RBI31I0160	16	46	78	110
	20	RBI31I0200	16	46	78	110
	25	RBI31I0250	19	52	90	180
	32	RBI31I0320	22	60	104	250
	40	RBI31I0400	26	68	120	380
	50	RBI31I0500	31	78	140	600
	63	RBI31I0630	38	93	169	1000
	75	RBI31I0750	44	139	227	2800
	90	RBI31I0900	51	139	242	3000

PVCu - Metric

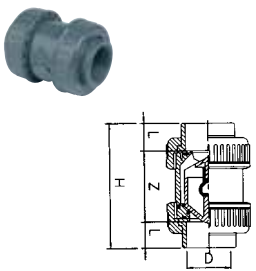
PVCu Valves

Valves from 16mm - 63mm 16 bar (20°C), above 63mm 10 bar (20°C). For valve spares see Accessories section

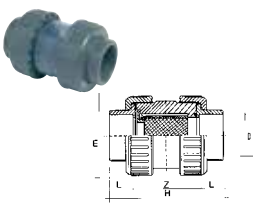
Check Valve Plain Sockets with PTFE Coated Spring FPM Seals Metric

Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	RBI34I0160	16	46	78	110
	20	RBI34I0200	16	46	78	110
	25	RBI34I0250	19	52	90	180
	32	RBI34I0320	22	60	104	250
	40	RBI34I0400	26	68	120	380
	50	RBI34I0500	31	78	140	600
	63	RBI34I0630	38	93	169	1000
	75	RBI34I0750	44	139	227	2800
	90	RBI34I0900	51	139	242	3000

Air Release Valve Plain Sockets with EPDM Seals Metric

Code: PSPVV	Nominal Size	Code	L	Z	H	Weight (GR)
	16	RBI33I0160	16	46	78	110
	20	RBI33I0200	16	46	78	110
	25	RBI33I0250	19	52	90	180
	32	RBI33I0320	22	60	104	250
	40	RBI33I0400	26	68	120	380
	50	RBI33I0500	31	78	140	600
	63	RBI33I0630	38	93	169	1000
	75	RBI33I0750	44	139	227	2800
	90	RBI33I0900	51	139	242	3000
	110	RBI33I1100	61	160	282	4500

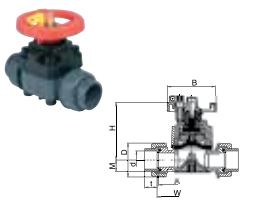
In Line Strainer Plain Sockets with EPDM Seals Metric

Code: PSPRA	Nominal Size	Code	L	Z	H	E	PN	Weight (GR)
	20	RBI35I0200	16	46	78	50	16	110
	25	RBI35I0250	19	52	90	60	16	180
	32	RBI35I0320	22	60	104	68	16	250
	40	RBI35I0400	26	68	120	80	16	380
	50	RBI35I0500	31	78	140	94	16	600
	63	RBI35I0630	38	93	169	115	16	1000

PVCu Metric Solvent Cement Valves

Maximum working pressure: 10 bar (20°C)

Diaphragm Valve Plain Sockets EPDM Seals Metric

Code: PSPRA	Nominal Size	Code	M	H	B	D	W	A	T
	20	RBI40I0200	17	100	86	43	96	90	16
	25	RBI40I0250	17	100	86	53	114	108	19
	32	RBI40I0320	21	107	86	60	122	116	22
	40	RBI40I0400	33	144	136	74	142	136	26
	50	RBI40I0500	33	144	136	83	160	154	31
	63	RBI40I0630	40.3	170	136	103	190	184	38

PVCu Metric Solvent Cement Valves

Maximum working pressure: 10 bar (20°C)

3 Way Ball Valve L Port EPDM O Rings Plain Ends

Code: PSAQU



Nominal Size	Code	D
25	RBI80L0250	25
32	RBI80L0320	32
50	RBI80L0500	50
63	RBI80L0630	63

3 Way Ball Valve T Port EPDM O Rings Plain Ends

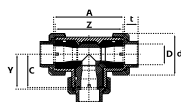
Code: PSAQU



Nominal Size	Code	D
25	RBI81T0250	25
32	RBI81T0320	32
50	RBI81T0500	50
63	RBI81T0630	63

3 Way Ball Valve L Port Plain Sockets EPDM Seals Metric

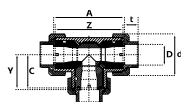
Code: PSPRA



Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
25	RBI60I0250	120	126	20	70	82	52	63	60	10
32	RBI60I0320	120	127	23	70	82	52	64	60	10
50	RBI60I0500	162	171	32	101	108	73	86	81	10
63	RBI60I0630	181	193	39	122	117	85	97	91	10

3 Way Ball Valve T Port Plain Sockets EPDM Seals Metric

Code: PSPRA



Nominal Size	Code	A	Z	t	d	H	B	Y	C	PN
25	RBI65I0250	120	126	20	70	82	52	63	60	10
32	RBI65I0320	120	127	23	70	82	52	64	60	10
50	RBI65I0500	162	171	32	101	108	73	86	81	10
63	RBI65I0630	181	193	39	122	117	85	97	91	10

PVCu - Metric

PVCu Butterfly Valves

Maximum working pressure: 10 bar (145 psi) at 20°C

Pro Flow H Series

Code: PSPRO



Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
2½" 75mm	RBAPFH0750	2½"	65	80	132	62	274	48	113	245.5	312
3" 90mm	RBAPFH0900	3"	80	92	132	62	286	59	113	245.5	315
4" 110mm	RBAPFH1100	4"	100	106	132	62	300	59.5	113	245.5	320.5
5" 140mm	RBAPFH1400*	5"	AVAILABLE JAN 2018								
6" 160mm	RBAPFH1600*	6"	AVAILABLE JAN 2018								
8" 225mm	RBAPFH2250*	8"	AVAILABLE JAN 2018								

*Available in 2018

Pro Flow P Series EPDM Seals

Code: PSPRO



Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
2½" 75mm	RBAPFP0750	2½"	65	80	132	62	274	48	113	245.5	312
3" 90mm	RBAPFP0900	3"	80	92	132	62	286	59	113	245.5	315
4" 110mm	RBAPFP1100	4"	100	106	132	62	300	59.5	113	245.5	320.5
5" 140mm	RBAPFP1400*	5"	AVAILABLE JAN 2018								
6" 160mm	RBAPFP1600*	6"	AVAILABLE JAN 2018								
8" 225mm	RBAPFP2250*	8"	AVAILABLE JAN 2018								

*Available in 2018

Pro Flow P Series FPM Seals

Code: PSPRO



Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
2½" 75mm	RBAPFP075F	2½"	65	80	132	62	274	48	113	245.5	312
3" 90mm	RBAPFP090F	3"	80	92	132	62	286	59	113	245.5	315
4" 110mm	RBAPFP110F	4"	100	106	132	62	300	59.5	113	245.5	320.5
5" 140mm	RBAPFP140F*	5"	AVAILABLE JAN 2018								
6" 160mm	RBAPFP160F*	6"	AVAILABLE JAN 2018								
8" 225mm	RBAPFP225F*	8"	AVAILABLE JAN 2018								

*Available in 2018

Pro Flow H Series Butterfly Valve—Complete EDPM O rings

Code: PSAQU



Nominal Size	Code
75	RBIFBH0750
90	RBIFBH0900
110	RBIFBH1100
140	RBIFBH1400*
160	RBIFBH1600*
200-225	RBIFBH2250*

*Available in 2018

PVCu Butterfly Valves

Maximum working pressure: 10 bar (145 psi) at 20°C

Pro Flow P Series Butterfly Valve—Complete EPDM or FPM seals

Code: PSAQU

Nominal Size

Code



75

RBIFBP0750

90

RBIFBP0900

110

RBIFBP1100

140

RBIFBP1400*

160

RBIFBP1600*

200-225

RBIFBP2250*

*Available in 2018

Swing Check Valve EPDM Seals

Code: PSPRA

Nominal Size

Code

DN

PN

C

i DIN

i ANSI

S

α PN6

α PN10



75

RBA73A0750

65

10

46

145

140

20

80°

80°

90

RBA73A0900

80

10

58

160

152

20

80°

77°

110

RBA73A0110

100

10

74

190

190

23

79°

76°

140

RBA73A0140

125

10

94

210

216

25

80°

76°

160

RBA73A0160

150

6

112

240

241

30

77°

75°

Swing Check Valve with Spring EPDM Seals

Code: PSPRA

Nominal Size

Code

DN

PN

C

i DIN

i ANSI

S

α PN6

α PN10



75

RBA74A0750

65

10

46

145

140

20

80°

80°

90

RBA74A0900

80

10

58

160

152

20

80°

77°

110

RBA74A0110

100

10

74

190

190

23

79°

76°

140

RBA74A0140

125

10

94

210

216

25

80°

76°

160

RBA74A0160

150

6

112

240

241

30

77°

75°

PVCu Actuated Double Union Ball Valves - Fail Safe Closed

Electrically Actuated Double Union Ball Valve—Plain Sockets EPDM Seals (220-240 volt) (110 volt)

Code: PSPVV

Nominal Size

Code



20

RB124I0200

25

RB124I0250

32

RB124I0320

40

RB124I0400

50

RB124I0500

63

RB124I0630

75

RB124I0750

90

RB124I0900

110

RB124I1100

PVCu - Metric

PVCu Actuated Double Union Ball Valves - Fail Safe Closed

Electrically Actuated Double Union Ball Valve-Plain Sockets FPM Seals (220-240 volt) (110 volt)

Code: PSPVV

Nominal Size

Code



20

RBI25I0200

25

RBI25I0250

32

RBI25I0320

40

RBI25I0400

50

RBI25I0500

63

RBI25I0630

75

RBI25I0750

90

RBI25I0900

110

RBI25I1100

PVCu Pneumatically Actuated Double Union Ball Valves Fail Safe Closed

Plain Sockets EPDM Seals

Code: PSPVV

Nominal Size

Code



20

RBI26I0200

25

RBI26I0250

32

RBI26I0320

40

RBI26I0400

50

RBI26I0500

63

RBI26I0630

75

RBI26I0750

90

RBI26I0900

110

RBI26I1100

FPM seals

Code: PSPVV

Nominal Size

Code



20

RBI27I0200

25

RBI27I0250

32

RBI27I0320

40

RBI27I0400

50

RBI27I0500

63

RBI27I0630

75

RBI27I0750

90

RBI27I0900

110

RBI27I1100

PVCu actuated butterfly valves EPDM

Electrically Actuated Butterfly Valve EPDM

Code: PSAQU

Nominal Size

Code



63-75

RBI90I0750

90

RBI90I0900

110

RBI90I1100

125

RBI90I1250

140

RBI90I1400

160

RBI90I1600

200-225

RBI90I2250

315

RBI90I3150

PVCu actuated butterfly valves EPDM

Electrically Actuated Butterfly Valve FPM

Code: PSAQU

Nominal Size

Code



63-75

RBI91I0750

90

RBI91I0900

110

RBI91I1100

125

RBI91I1250

140

RBI91I1400

160

RBI91I1600

200-225

RBI91I2250

315

RBI91I3150

Pneumatic Single Acting/Spring Return Butterfly Valve EPDM

Code: PSAQU

Nominal Size

Code



63-75

RBI92I0750

90

RBI92I0900

110

RBI92I1100

125

RBI92I1250

140

RBI92I1400

160

RBI92I1600

200-225

RBI92I2250

Pneumatic Single Acting/Spring Return Butterfly Valve FPM

Code: PSAQU

Nominal Size

Code



63-75

RBI93I0750

90

RBI93I0900

110

RBI93I1100

125

RBI93I1250

140

RBI93I1400

160

RBI93I1600

200-225

RBI93I2250

PVCu - Metric

PVCu actuated butterfly valves EPDM

Pneumatic Double Acting Butterfly Valve FPM

Code: PSAQU



Nominal Size	Code
63-75	RBI94I0750
90	RBI94I0900
110	RBI94I1100
125	RBI94I1250
140	RBI94I1400
160	RBI94I1600
200-225	RBI94I2250

Pneumatic Double Acting Butterfly Valve EPDM

Code: PSAQU



Nominal Size	Code
63-75	RBI95I0750
90	RBI95I0900
110	RBI95I1100
125	RBI95I1250
140	RBI95I1400
160	RBI95I1600
200-225	RBI95I2250

Diaphragm Valves

Diaphragm Valves Pneumatically Actuated (please specify when ordering "Normally Open" or "Normally Closed")

Code: PSAQU



Nominal Size	Code	DN	A	A 1	B	od	oD	G	LA
20	RBI46I0200	15	85	31	63	20	43	G. 1	90
25	RBI46I0250	20	135	33	105	25	60	G. 1 1/2	116
32	RBI46I0320	25	135	33	105	32	60	G. 1 1/2	116
40	RBI46I0400	32	222	79	151	40	83	G. 2 1/4	154
50	RBI46I0500	40	222	79	151	50	83	G. 2 1/4	154
63	RBI46I0630	50	234	90	161	63	103	G. 3 3/4	182

Diaphragm Valves Manually Operated

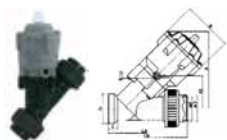
Code: PSAQU



Nominal Size	Code	DN	A	A 1	B	od	oD	G	LA
20	RBI47I0200	15	85	31	63	20	43	G. 1	90
25	RBI47I0250	20	135	33	105	25	60	G. 1 1/2	116
32	RBI47I0320	25	135	33	105	32	60	G. 1 1/2	116
40	RBI47I0400	32	222	79	151	40	83	G. 2 1/4	154
50	RBI47I0500	40	222	79	151	50	83	G. 2 1/4	154
63	RBI47I0630	50	234	90	161	63	103	G. 3 3/4	182

Angle Seat Globe Valves Plastic

Code: PSAQU



Nominal Size	Code	DN	A	A 1	B	od	oD	G	LA
20	RBI45I0200				19.5	G. 1	123.8		178.57
25	RBI45I0250				24.5	G. 1 1/2	158.0		216.66
32	RBI45I0320				31.5	G. 1 1/2	162.0		216.66
63	RBI45I0630				62.5	G. 2 3/4	235.0		290.00

Diaphragm Valves

Diaphragm Valve

Code: PSAQU



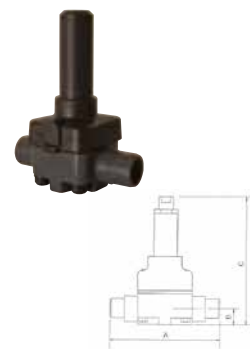
Nominal Size	Code	dmm	DN	Box	C	G	H	L	Z	Weight (GR)
40	RBI41I0400	40	32	40	38	1/4	73	204	150	1.100
50	RBI41I0500	50	40	50	36	1/4	73	192	130	1.150
63	RBI41I0630	63	50	63	45	1/4	80	224	148	1.700
1" x 1 1/4"	RBA41A032E	1" x 1 1/4"			38	1/4	73	204	150	1.100
1 1/4"	RBA41A040E	1 1/4" x 1 1/4"			38	1/4	73	204	150	1.100

Pressure Relief Valve

Pressure Relief Valve

(operates between 0.5 and 6.5 bar) EPDM Seals

Code: PSAQU



Nominal Size	Code	A	B	C
1/2" - 20mm	RBAPRV0200	148	26	164
3/4" - 25mm	RBAPRV0250	148	26	164
1" - 32mm	RBAPRV0320	148	26	164
1 1/4" - 40mm	RBAPRV0400	203	40	240
1 1/2" - 50mm	RBAPRV0500	203	40	240
2" - 63mm	RBAPRV0630	254	40	240

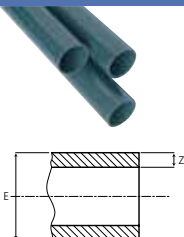
Up-rated spring available to increase maximum pressure to 10 bar.

- Available in PVCu, ABS, PVCc, PP and PVDF.
- Diaphragms available in natural rubber, EPDM and FPM (Viton)
- Bi-Directional Design
- No metal parts in contact with line media
- Can be preset
- Can be installed in any position
- Also works as a Pressure Sustaining Valve
- Minimum set pressure 0.5 Bar (7 PSI) and maximum set pressure 6.8 Bar (100 PSI)
- Easily adjusted on site
- Connections Male Spigot: PVCu Imperial or Metric, ABS - Imperial, PVCc Metric, PP Metric, PVDF Metric.
- Mounting inserts provided in base as standard

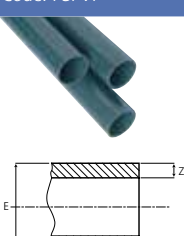
PVCu - Metric

PVCu Class 7 Pressure Pipes Plain Ended

Pressure Pipe Class 7 (machining quality max. 12 bar at 20°C)

Code: PSPVP	Nominal Size	Product code	Z	E	Weight (g / mtr)
	1/2"	RP7CL70200PE3	4.0	21.4	357
	3/4"	RP7CL70250PE3	4.2	26.7	487
	1"	RP7CL70320PE3	4.8	33.6	783
	1 1/4"	RP7CL70400PE3	5.2	42.2	1078
	1 1/2"	RP7CL70500PE3	5.5	48.3	1330
	2"	RP7CL70630PE3	5.9	60.3	1820

Pressure Pipe Class 7 (machining quality max. 12 bar at 20°C)

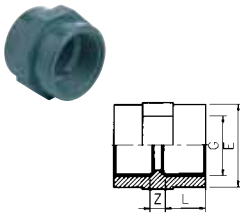
Code: PSPVP	Nominal Size	Product code	Z	E	Weight (g / mtr)
	1/2"	RP7CL70200PE	4.0	21.4	357
	3/4"	RP7CL70250PE	4.2	26.7	487
	1"	RP7CL70320PE	4.8	33.6	783
	1 1/4"	RP7CL70400PE	5.2	42.2	1078
	1 1/2"	RP7CL70500PE	5.5	48.3	1330
	2"	RP7CL70630PE	5.9	60.3	1820

PVCu - Threaded

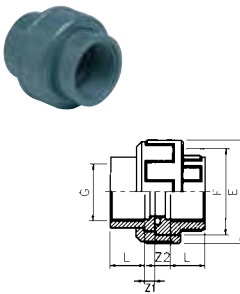
PVCu Threaded Fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For PTFE tape see Accessories section

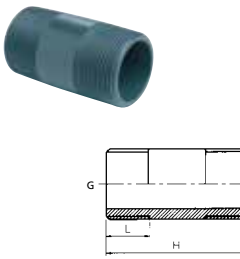
Socket BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
	3/8"	BSPF	RFFMAF0160	11	6	23	10	8
	1/2"	BSPF	RFFMAF0200	15	7	27	10	20
	3/4"	BSPF	RFFMAF0250	16	7	33	10	25
	1"	BSPF	RFFMAF0320	19	8	41	10	45
	1 1/4"	BSPF	RFFMAF0400	21	8	50	10	65
	1 1/2"	BSPF	RFFMAF0500	21	8	61	10	70
	2"	BSPF	RFFMAF0630	26	8	75	10	125
	2 1/2"	BSPF	RFFMAF0750	30	9	88	1	190
	3"	BSPF	RFFMAF0900	33	10	106	1	290
	4"	BSPF	RFFMAF1100	39	11	129	1	460

Union BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	3/8"	BSPF	RFFBOF0160	11	6	14	3/4"	34	10	27
	1/2"	BSPF	RFFBOF0200	15	4	11	1"	42	10	45
	3/4"	BSPF	RFFBOF0250	16	6	13	1 1/4"	52	10	72
	1"	BSPF	RFFBOF0320	19	6	13	1 1/2"	59	10	100
	1 1/4"	BSPF	RFFBOF0400	21	8	17	2"	72	10	160
	1 1/2"	BSPF	RFFBOF0500	21	13	24	2 1/4"	79	10	264
	2"	BSPF	RFFBOF0630	26	15	30	2 3/4"	96	5	455
	2 1/2" *	BSPF	RFFBOF0750	30	17	32	3 1/2"	119	1	635
	3" *	BSPF	RFFBOF0900	33	23	36	4"	134	1	905
	4" *	BSPF	RFFBOF1100	39	27	40	5"	163	1	1355

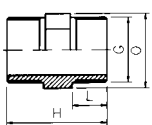
Barrel Nipple BSP Male Taper Threaded

Code: PSPVF	Nominal Size	G	Code	L	H	Pack Qty	Weight (GR)
	3/8"	BSPT	RFFBAF0160	14	44	10	11
	1/2"	BSPT	RFFBAF0200	16	50	10	13
	3/4"	BSPT	RFFBAF0250	19	56	10	20
	1"	BSPT	RFFBAF0320	21	62	10	30
	1 1/4"	BSPT	RFFBAF0400	24	75	10	51
	1 1/2"	BSPT	RFFBAF0500	32	87	10	83
	2"	BSPT	RFFBAF0630	29	87	10	119
	2 1/2"	BSPT	RFFBAF0750	30	105	1	169
	3"	BSPT	RFFBAF0900	37	128	1	243
	4"	BSPT	RFFBAF1100	42	156	1	485

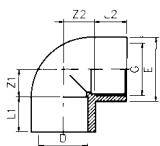
PVCu Threaded Fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For PTFE tape see Accessories section

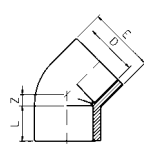
Hexagon Nipple BSP Male Threaded/BSP Male Threaded

Code: PSPVF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
	3/8"	BSPM	RFFNIF0160	11	33	22	10	9
	1/2"	BSPM	RFFNIF0200	15	42	24	10	10
	3/4"	BSPM	RFFNIF0250	16	44	30	10	18
	1"	BSPM	RFFNIF0320	19	50	36	10	30
	1 1/4"	BSPM	RFFNIF0400	21	58	46	10	45
	1 1/2"	BSPM	RFFNIF0500	21	58	50	10	50
	2"	BSPM	RFFNIF0630	26	66	65	10	90
	2 1/2"	BSPM	RFFNIF0750	30	78	80	1	140
	3"	BSPM	RFFNIF0900	33	85	95	1	220
	4"	BSPM	RFFNIF1100	39	96	120	1	345

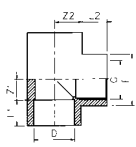
Elbow 90° BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1-L2	Z1-Z2	E	Pack Qty	Weight (GR)
	3/8"	BSPF	RFFGOF0160	11	12	24	10	15
	1/2"	BSPF	RFFGOF0200	15	12	28	10	22
	3/4"	BSPF	RFFGOF0250	16	17	34	10	37
	1"	BSPF	RFFGOF0320	19	20	42	10	60
	1 1/4"	BSPF	RFFGOF0400	21	26	51	10	95
	1 1/2"	BSPF	RFFGOF0500	21	36	62	10	180
	2"	BSPF	RFFGOF0630	26	45	77	10	310
	2 1/2"	BSPF	RFFGOF0750	30	53	89	1	425
	3"	BSPF	RFFGOF0900	33	65	106	1	740
	4"	BSPF	RFFGOF1100	39	79	129	1	1050

Elbow 45° BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
	3/8"	BSPF	RFFGYF0160	11	8	24	10	10
	1/2"	BSPF	RFFGYF0200	15	6	28	10	18
	3/4"	BSPF	RFFGYF0250	16	9	34	10	30
	1"	BSPF	RFFGYF0320	19	11	42	10	50
	1 1/4"	BSPF	RFFGYF0400	21	15	51	10	80
	1 1/2"	BSPF	RFFGYF0500	21	22	62	10	155
	2"	BSPF	RFFGYF0630	26	26	77	10	275
	2 1/2"	BSPF	RFFGYF0750	30	31	89	1	360
	3"	BSPF	RFFGYF0900	33	38	106	1	620
	4"	BSPF	RFFGYF1100	39	46	129	1	830

Tee 90° BSP Female Threaded

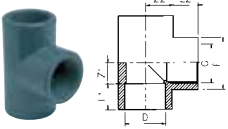
Code: PSPVF	Nominal Size	G	Code	L1-L2	Z1-Z2	E	Pack Qty	Weight (GR)
	3/8"	BSPF	RFFTIF0160	11	12	24	10	18
	1/2"	BSPF	RFFTIF0200	15	12	28	10	30
	3/4"	BSPF	RFFTIF0250	16	17	34	10	50
	1"	BSPF	RFFTIF0320	19	20	42	10	75
	1 1/4"	BSPF	RFFTIF0400	21	26	51	10	120

PVCu - Threaded

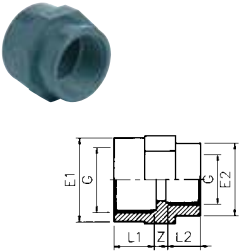
PVCu Threaded Fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For PTFE tape see Accessories section

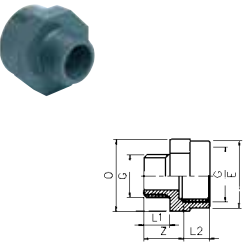
Tee 90° BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	L1-L2	Z1-Z2	E	Pack Qty	Weight (GR)
	1½"	BSPF	RFFTIF0500	21	36	62	10	240
	2"	BSPF	RFFTIF0630	26	45	77	5	410
	2½"	BSPF	RFFTIF0750	30	53	89	1	540
	3"	BSPF	RFFTIF0900	33	65	106	1	880
	4"	BSPF	RFFTIF1100	39	79	129	1	1310

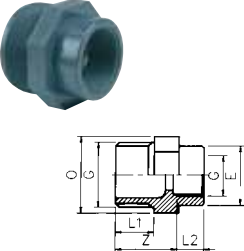
Reducing Piece BSP Female Threaded/BSP Female Threaded

Code: PSPVF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	½" x ¾"	RFFMRF020A	15	11	6	28	23	10	17
	¾" x ½"	RFFMRF025B	16	15	7	34	27	10	25
	1" x ¾"	RFFMRF032C	19	16	7	42	33	10	40
	1¼" x 1"	RFFMRF040D	21	19	8	51	41	10	62
	1½" x 1¼"	RFFMRF050E	21	21	8	58	50	10	72
	2" x 1½"	RFFMRF063F	26	21	8	72	61	10	115
	2½" x 2"	RFFMRF075G	30	26	8	89	75	1	128
	3" x 2½"	RFFMRF090H	33	30	9	103	88	1	286
	4" x 3"	RFFMRF110I	39	33	10	130	106	1	436

Reducing Piece BSP Female Threaded/BSP Male Threaded

Code: PSPVF	Nominal Size	Code	L1	L2	Z	O	E	Pack Qty	Weight (GR)
	½" x ¾"	RFFMGF020A	11	15	22	30	28	10	16
	¾" x ½"	RFFMGF025B	15	16	24	36	34	10	22
	1" x ¾"	RFFMGF032C	16	19	26	46	42	10	37
	1¼" x 1"	RFFMGF040D	19	21	30	55	51	10	59
	1½" x 1¼"	RFFMGF050E	21	21	33	60	58	10	75
	2" x 1½"	RFFMGF063F	21	26	34	75	72	10	110
	2½" x 2"	RFFMGF075G	26	30	38	90	89	1	190
	3" x 2½"	RFFMGF090H	30	33	44	105	103	1	262
	4" x 3"	RFFMGF110I	33	39	48	130	130	1	350

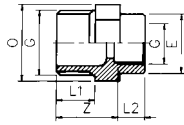
Reducing Piece BSP Male Threaded/BSP Female Threaded

Code: PSPVF	Nominal Size	Code	L1	L2	Z	E	O	Pack Qty	Weight (GR)
	½" x ¾"	RFFRIF020A	15	11	24	23	24	10	12
	¾" x ¾"	RFFRIF025A	16	11	25	23	30	10	16
	¾" x ½"	RFFRIF025B	16	15	26	28	30	10	20
	1" x ¾"	RFFRIF032A	19	11	28	23	36	10	25
	1" x ½"	RFFRIF032B	19	15	29	28	36	10	26
	1" x ¾"	RFFRIF032C	19	16	30	34	36	10	26
	1¼" x ½"	RFFRIF040B	21	15	33	28	46	10	42
	1¼" x ¾"	RFFRIF040C	21	16	33	34	46	10	43
	1¼" x 1"	RFFRIF040D	21	19	33	42	46	10	46
	1½" x ¾"	RFFRIF050C	21	16	34	34	50	10	46
	1½" x 1"	RFFRIF050D	21	19	34	42	50	10	50
	1½" x 1¼"	RFFRIF050E	21	21	34	51	55	10	60

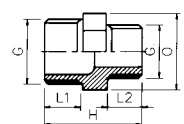
PVCu Threaded Fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For PTFE tape see Accessories section

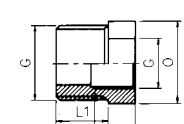
Reducing Piece BSP Male Threaded/BSP Female Threaded

Code: PSPVF	Nominal Size	Code	L1	L2	Z	E	O	Pack Qty	Weight (GR)
 	2" x 1"	RFFRIF063D	26	19	37	42	65	10	85
	2" x 1¼"	RFFRIF063E	26	21	37	51	65	10	85
	2" x 1½"	RFFRIF063F	26	21	37	58	65	10	87
	2½" x 1¼"	RFFRIF075E	30	21	43	51	80	1	140
	2½" x 1½"	RFFRIF075F	30	21	43	58	80	1	138
	2½" x 2"	RFFRIF075G	30	26	43	72	80	1	142
	3" x 1½"	RFFRIF090F	33	21	47	58	95	1	200
	3" x 2"	RFFRIF090G	33	26	47	72	95	1	205
	3" x 2½"	RFFRIF090H	33	30	47	89	95	1	215
	4" x 2"	RFFRIF110G	39	26	53	72	120	1	325
	4" x 2½"	RFFRIF110H	39	30	53	89	120	1	330
	4" x 3"	RFFRIF110I	39	33	53	103	120	1	350

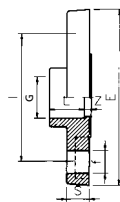
Reducing Nipple BSP Male Threaded/BSP Male Threaded

Code: PSPVF	Nominal Size	Code	L1	L2	Z	E	O	Pack Qty	Weight (GR)
 	½" x ¾"	RFFNRF020A	15	11	38	24		10	10
	¾" x ½"	RFFNRF025B	16	15	43	30		10	17
	1" x ¾"	RFFNRF032C	19	16	47	36		10	25
	1¼" x 1"	RFFNRF040D	21	19	56	46		10	42
	1½" x 1¼"	RFFNRF050E	21	21	58	50		10	48
	2" x 1½"	RFFNRF063F	26	21	62	65		10	80
	2½" x 2"	RFFNRF075G	30	26	73	80		1	138
	3" x 2½"	RFFNRF090H	33	30	82	95		1	208
	4" x 3"	RFFNRF110I	39	33	90	120		1	340

Reducing Bush BSP Male Threaded/BSP Female Threaded

Code: PSPVF	Nominal Size	Code	L1	L2	Z	O	Pack Qty	Weight (GR)
 	¾" x ½"	RFFRCF025B	16	15	13	30	10	13
	1" x ¾"	RFFRCF032C	19	16	15	36	10	20
	1¼" x 1"	RFFRCF040D	21	19	16	46	10	35
	1½" x 1¼"	RFFRCF050E	21	21	14	50	10	37
	2" x 1½"	RFFRCF063F	26	21	18	65	10	67
	2½" x 2"	RFFRCF075G	30	26	21	80	1	135
	3" x 2½"	RFFRCF090H	33	30	20	95	1	160
	4" x 3"	RFFRCF110I	39	33	24	120	1	380

Full Face Flange Drilled to BS 4504 NP10/16 BSP Female Threaded

Code: PSPVF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Pack Qty	Weight (GR)
 	½"	BSPF RFFFFF0200	15	5	95	14	65	8	4		78
	¾"	BSPF RFFFFF0250	18	5	105	14	75	9	4		105
	1"	BSPF RFFFFF0320	19	5	115	14	85	16	4		143
	1¼"	BSPF RFFFFF0400	21	5	142	18	100	17	4		220
	1½"	BSPF RFFFFF0500	21	5	152	18	110	17	4		280
	2"	BSPF RFFFFF0630	26	5	165	18	125	20	4		380
	2½"	BSPF RFFFFF0750	30	6	185	18	145	22	4		520
	3"	BSPF RFFFFF0900	33	7	200	18	160	22	8		735
	4"	BSPF RFFFFF1100	40	8	220	18	180	23	8		940

PVCu - Threaded

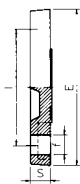
PVCu Threaded Fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For PTFE tape see Accessories section

Blanking Flange Drilled to BS4504 NP10/16. Operating Pressure Show at 20°C.

Maximum working pressure: 20mm – 160mm 16 bar (232 psi) at 20°C. 200 – 225mm 10 bar (145 psi) at 20°C.

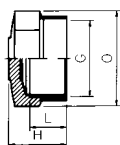
Code: PSPVF



Nominal Size	Code	E	S	I	f	HOLES	Pack Qty	Weight (GR)
20	RFIFCI0200	95	11	65	14	4		76
25	RFIFCI0250	105	12	75	14	4		104
32	RFIFCI0320	115	14	85	14	4		140
40	RFIFCI0400	142	15	100	18	4		220
50	RFIFCI0500	152	16	110	18	4		280
63	RFIFCI0630	165	18	125	18	4		370
75	RFIFCI0750	185	19	145	18	4		495
90	RFIFCI0900	200	20	160	18	8		655
110	RFIFCI1100	220	22	180	18	8		850
125	RFIFCI1250	230	24	190	18	8		950
140	RFIFCI1400	250	26	210	18	8		1165
160	RFIFCI1600	285	28	240	22	8		1610
200	RFIFCI2000	340	30	295	22	8		2480
225	RFIFCI2250	340	30	295	22	8		2480

Plug BSP Male Threaded

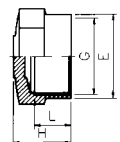
Code: PSPVF



Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
3/8"	BSPM	RFFTA0160	11	23	19	10	8
1/2"	BSPM	RFFTA0200	15	29	24	10	10
3/4"	BSPM	RFFTA0250	16	30	30	10	15
1"	BSPM	RFFTA0320	19	33	36	10	25
1 1/4"	BSPM	RFFTA0400	21	39	46	10	40
1 1/2"	BSPM	RFFTA0500	21	39	50	10	45
2"	BSPM	RFFTA0630	26	43	65	10	80
2 1/2"	BSPM	RFFTA0750	30	51	80	1	137
3"	BSPM	RFFTA0900	33	56	95	1	210
4"	BSPM	RFFTA1100	39	63	120	1	340

Cap BSP Female Threaded

Code: PSPVF

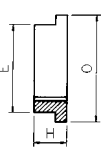


Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)
3/8"	BSPF	RFFCAF0160	11	22	23	10	7
1/2"	BSPF	RFFCAF0200	15	21	28	10	15
3/4"	BSPF	RFFCAF0250	16	23	34	10	17
1"	BSPF	RFFCAF0320	19	26	42	10	20
1 1/4"	BSPF	RFFCAF0400	21	29	51	10	35
1 1/2"	BSPF	RFFCAF0500	21	32	61	10	50
2"	BSPF	RFFCAF0630	26	37	75	10	80
2 1/2"	BSPF	RFFCAF0750	30	50	89	10	190
3"	BSPF	RFFCAF0900	33	53	103	10	270
4"	BSPF	RFFCAF1100	39	59	130	10	420

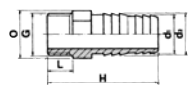
PVCu Threaded Fittings

Suitable for use with class 7 threaded pipe max.12 bar (20°C). For PTFE tape see Accessories section

Backnut BSP Female Threaded

Code: PSPVF	Nominal Size	G	Code	E	H	O	Pack Qty	Weight (GR)
	1/2"	BSPF	RFFNUF0200	28	13	38	10	13
	3/4"	BSPF	RFFNUF0250	33	14	43	10	16
	1"	BSPF	RFFNUF0320	46	16	56	10	30
	1 1/4"	BSPF	RFFNUF0400	50	18	65	10	35
	1 1/2"	BSPF	RFFNUF0500	60	19	72	10	45
	2"	BSPF	RFFNUF0630	80	21	94	10	90
	2 1/2"	BSPF	RFFNUF0750	95	23	105	1	180
	3"	BSPF	RFFNUF0900	110	27	125	1	235
	4"	BSPF	RFFNUF1100	140	31	154	1	350

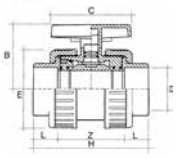
Hose Adaptor BSP Male Threaded/Spigot Serrated

Code: PSPVF	Nominal Size	Code	L	H	D1	D2	O	Pack Qty	Weight (GR)
	3/8" x 16	RFFPGF016A	12	64	16	18	19	1	15
	1/2" x 20	RFFPGF020B	15	70	20	22	24	1	20
	3/4" x 25	RFFPGF025C	17	76	25	27	30	1	30
	1" x 32	RFFPGF032D	20	80	32	34	36	1	50
	1 1/4" x 40	RFFPGF040E	22	92	40	42	46	1	70
	1 1/2" x 50	RFFPGF050F	23	99	50	52	50	1	118
	2" x 63	RFFPGF063G	26	118	60	63	65	1	190

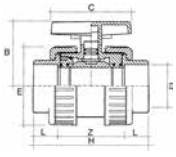
PVCu Threaded Union Valves

Maximum working pressure for valves 1/2" – 2" 16 bar, for valves 2 1/2" – 4" 10 bar at 20°C

Industrial Double Union Ball Valve BSP Female Threaded Sockets EPDM Seals

Code: PSPVV	Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
	3/8"	BSPF	RBF22F0160	50	51	16	46	78	65	16	140
	1/2"	BSPF	RBF22F0200	50	51	16	46	78	65	16	140
	3/4"	BSPF	RBF22F0250	60	58	19	52	90	70	16	200
	1"	BSPF	RBF22F0320	68	65	22	60	104	82	16	300
	1 1/4"	BSPF	RBF22F0400	80	76	24	68	116	92	16	450
	1 1/2"	BSPF	RBF22F0500	94	88	24	78	126	105	16	690
	2"	BSPF	RBF22F0630	115	104	28	93	149	123	16	1150
	2 1/2"	BSPF	RBF22F0750	168	137	33	139	205	168	10	3050
	3"	BSPF	RBF22F0900	168	138	36	139	212	168	10	3200
	4"	BSPF	RBF22F1100	210	166	42	160	244	190	10	5400

Industrial Double Union Ball Valve BSP Female Threaded Sockets FPM Seals

Code: PSPVV	Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
	3/8"	BSPF	RBF23F0160	50	51	16	46	78	65	16	140
	1/2"	BSPF	RBF23F0200	50	51	16	46	78	65	16	140
	3/4"	BSPF	RBF23F0250	60	58	19	52	90	70	16	200
	1"	BSPF	RBF23F0320	68	65	22	60	104	82	16	300
	1 1/4"	BSPF	RBF23F0400	80	76	24	68	116	92	16	450
	1 1/2"	BSPF	RBF23F0500	94	88	24	78	126	105	16	690
	2"	BSPF	RBF23F0630	115	104	28	93	149	123	16	1150
	2 1/2"	BSPF	RBF23F0750	168	137	33	139	205	168	10	3050
	3"	BSPF	RBF23F0900	168	138	36	139	212	168	10	3200
	4"	BSPF	RBF23F1100	210	166	42	160	244	190	10	5400

PVCu - Threaded

PVCu manual Ball Valves-Economy

Maximum working pressure for valves ½" – 2" 16 bar, for valves 2 ½" – 4" 10 bar at 20°C

Double Union Ball Valve BSP Female Threaded Sockets EPDM Seals

Code: PSPVV



Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
3/8"	BSPF	RBF21F0160	50	51	16	46	78	65	16	140
½"	BSPF	RBF21F0200	50	51	16	46	78	65	16	140
¾"	BSPF	RBF21F0250	60	58	19	52	90	70	16	200
1"	BSPF	RBF21F0320	68	65	22	60	104	82	16	300
1¼"	BSPF	RBF21F0400	80	76	24	68	116	92	16	450
1½"	BSPF	RBF21F0500	94	88	24	78	126	105	16	690
2"	BSPF	RBF21F0630	115	104	28	93	149	123	16	1150
2½"	BSPF	RBF21F0750	168	137	33	139	205	168	10	3050
3"	BSPF	RBF21F0900	168	138	36	139	212	168	10	3200
4"	BSPF	RBF21F1100	210	166	42	160	244	190	10	5400

Single Union Ball Valve BSP Female Threaded Sockets EPDM Seals

Code: PSPVV



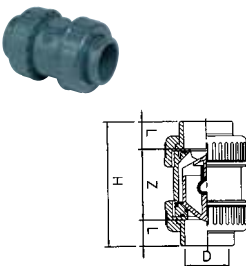
Nominal Size	G	Code	E	B	L	Z	H	C	PN	Weight (GR)
3/8"	BSPF	RBF11F0160	50	51	16	46	78	65	16	140
½"	BSPF	RBF11F0200	50	51	16	46	78	65	16	140
¾"	BSPF	RBF11F0250	60	58	19	52	90	70	16	200
1"	BSPF	RBF11F0320	68	65	22	60	104	82	16	300
1¼"	BSPF	RBF11F0400	80	76	24	68	116	92	16	450
1½"	BSPF	RBF11F0500	94	88	24	78	126	105	16	690
2"	BSPF	RBF11F0630	115	104	28	93	149	123	16	1150
2½"	BSPF	RBF11F0750	168	137	33	139	205	168	10	3050
3"	BSPF	RBF11F0900	168	138	36	139	212	168	10	3200
4"	BSPF	RBF11F1100	210	166	42	160	244	190	10	5400

PVCu Check Valves

Maximum working pressure for valves ½" – 2" 16 bar, for valves 2 ½" – 4" 10 bar at 20°C

Check Valve BSP Female Threaded Sockets with Stainless Steel Spring EPDM Seals

Code: PSPVV

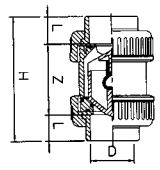


Nominal Size	G	Code	L	Z	H	Weight (GR)
3/8"	BSPF	RBF30F0160	16	46	78	110
½"	BSPF	RBF30F0200	16	46	78	110
¾"	BSPF	RBF30F0250	19	52	90	180
1"	BSPF	RBF30F0320	22	60	104	250
1¼"	BSPF	RBF30F0400	24	68	116	380
1½"	BSPF	RBF30F0500	24	78	126	600
2"	BSPF	RBF30F0630	28	93	149	1000
2½"	BSPF	RBF30F0750	33	139	205	2800
3"	BSPF	RBF30F0900	36	139	212	3000
4"	BSPF	RBF30F1100	61	160	282	4500

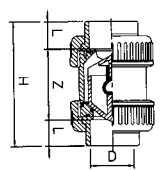
PVCu Check Valves

Maximum working pressure for valves 1/2" – 2" 16 bar, for valves 2 1/2" – 4" 10 bar at 20°C

Check Valve BSP Female Threaded Sockets with PTFE Coated Spring EPDM Seals

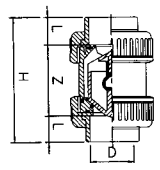
Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
 	3/8"	BSPF	RBF31F0160	16	46	78	110
	1/2"	BSPF	RBF31F0200	16	46	78	110
	3/4"	BSPF	RBF31F0250	19	52	90	180
	1"	BSPF	RBF31F0320	22	60	104	250
	1 1/4"	BSPF	RBF31F0400	24	68	116	380
	1 1/2"	BSPF	RBF31F0500	24	78	126	600
	2"	BSPF	RBF31F0630	28	93	149	1000
	2 1/2"	BSPF	RBF31F0750	33	139	205	2800
	3"	BSPF	RBF31F0900	36	139	212	3000

Check Valve BSP Female Threaded Sockets with PTFE Coated Spring FPM Seals

Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
 	3/8"	BSPF	RBF34F0160	16	46	78	110
	1/2"	BSPF	RBF34F0200	16	46	78	110
	3/4"	BSPF	RBF34F0250	19	52	90	180
	1"	BSPF	RBF34F0320	22	60	104	250
	1 1/4"	BSPF	RBF34F0400	24	68	116	380
	1 1/2"	BSPF	RBF34F0500	24	78	126	600
	2"	BSPF	RBF34F0630	28	93	149	1000
	2 1/2"	BSPF	RBF34F0750	33	139	205	2800
	3"	BSPF	RBF34F0900	36	139	212	3000

PVCu Air Release Valves

Air Release Valve BSP Female Threaded Sockets with EPDM Seals

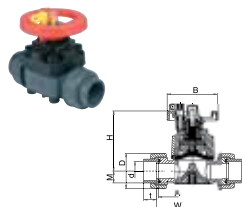
Code: PSPVV	Nominal Size	G	Code	L	Z	H	Weight (GR)
 	3/8"	BSPF	RBF33F0160	16	46	78	110
	1/2"	BSPF	RBF33F0200	16	46	78	110
	3/4"	BSPF	RBF33F0250	19	52	90	180
	1"	BSPF	RBF33F0320	22	60	104	250
	1 1/4"	BSPF	RBF33F0400	24	68	116	380
	1 1/2"	BSPF	RBF33F0500	24	78	126	600
	2"	BSPF	RBF33F0630	28	93	149	1000
	2 1/2"	BSPF	RBF33F0750	33	139	205	2800
	3"	BSPF	RBF33F0900	36	139	212	3000
	4"	BSPF	RBF33F1100	61	160	282	4500

PVCu - Threaded

PVCu Diaphragm Valves

Diaphragm Valve BSP Female Threaded Sockets EPDM Seals

Code: PSPRA



Nominal Size	G	Code	M	H	B	Weight (GR)
1/2"	BSPF	RB40F0200	17	100	86	
3/4"	BSPF	RB40F0250	17	100	86	
1"	BSPF	RB40F0320	21	107	86	
1 1/4"	BSPF	RB40F0400	33	144	136	
1 1/2"	BSPF	RB40F0500	33	144	136	
2"	BSPF	RB40F0630	40.3	170	136	

ABS Pipe Systems

ABS (Acrylonitrile Butadiene Styrene) is highly rated as a thermoplastic pipework system and is used in many applications such as food and beverage processing as well as water and sewerage treatment and many other industries.

ABS has good chemical resistance with high impact strength.

ABS is non toxic and conforms to the toxicological requirements of the British Plastic Federation, British Industrial Biological Research Association Code of Practice for food usage 45/5.

It also fulfils the EEC requirements for plastic materials in contact with foodstuffs.

ABS systems are lightweight, rigid and easy to install using a solvent cement.

Colour

ABS products are recognised by their light grey colour.

Chemical Resistance

Polypipe Effast ABS has good resistance to most diluted inorganic acids, salts, animal fats and oils and organic acids. It is not resistant to organic solvents, alcohol, petrol, acetic acid or vegetable oils. Recommendations can be given by our Technical Department regarding the resistance of ABS to specific chemicals.

Standards

Individual products are in compliance with appropriate British Standards:

Fittings (inch size) BS 5392 Part 1

Pipe (inch size) BS 5391

Threaded fittings BS 21, DIN 2999, ISO7

Solvent Cement BS 4346 Part 3

Imperial and Metric Sizes

The following notes may be helpful to those unfamiliar with the different ways of describing metric and imperial sizes when specifying pipe or fittings.

When specifying Imperial pipe fittings and other components reference is made to the nominal size of the pipe bore in inches and fractions of an inch.

Metric Systems are specified by reference to the outside diameter of the pipe expressed in millimetres.

As a general guide the following table gives a comparison between metric and imperial sizes up to 8 inches. It is important to understand that metric sizes are not simply inch sizes which have been converted into millimetres and called metric. The actual equivalents are slightly different (except for Imperial size 2 1/2 inches and metric size 75mm and 5 inches and 140mm which happen to coincide exactly) and are not interchangeable.

Imperial Sizes (inches)		Metric Sizes (mm)	
Nominal bore	Pipe outside dia.	Pipe outside dia.	Nominal bore
3/8"	17.1	16	10
1/2"	21.4	20	15
3/4"	26.7	25	20
1"	33.6	32	25
1 1/4"	42.2	40	32
1 1/2"	48.3	50	40
2"	60.3	63	50
2 1/2"	75.2	75	65
3"	88.9	90	80
4"	114.3	110	100
5"	140.2	140	125
6"	168.3	160	150
8"	219.1	225	200

Temperature and Pressure

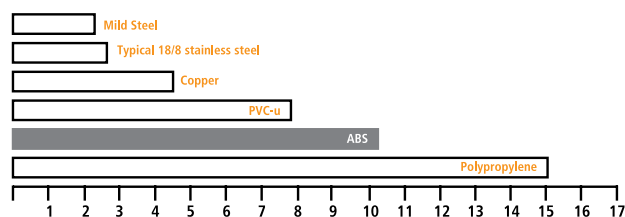
It is suitable for use over a wide temperature range from -40°C to +60°C at pressures up to 15 bar. Please consult the temperature/pressure relationship chart for specific ratings. It is important to remember that if the temperature is increased above 20°C then the pressure must be reduced.

ABS in sub-zero temperatures

ABS Pipe systems are suitable for temperatures as low as -40°C, however it is necessary as with any other pipeline to take preventative measures to ensure the pipeline fluid does not freeze, as freezing would cause subsequent damage to the system.

Thermal expansion

The thermal coefficient of linear expansion for ABS is $10.1 \times 10^{-5} \text{m/m} \cdot ^\circ\text{C}$. It is necessary in certain situations to make special provision for this expansion and contraction. Thermal expansion of ABS is compared with other materials, in the following chart.



General Information

-40°C to +60°C

Size range

Imperial Solvent weld
Threaded

Temperature range

1/2" – 8"
1/2" – 4"



WRAS Approval

Water Regulations Advisory Scheme.
Approved product for potable water



Kite Mark Licence
Fittings No. KM 60042

ABS - Imperial

Pressure Ratings Fittings & Valves Imperial

Unless otherwise indicated the pressure ratings are as follows

PRODUCT	SIZE	PRESSURE RATING
Fitting Solvent Cement	½" – 6"	15 bar (217psi)
	8"	9 bar (130psi)
Fittings Threaded	¾" – 4"	10 bar (145psi)
Valves	¾" – 2"	16 bar (232psi)
Valves	2½" – 4"	10 bar (145psi)

All pressure ratings are at 20°C

All threaded fittings are parallel thread unless otherwise stated.

ie: BSP Female and BSP Male are Parallel

BSPT = Tapered Thread

Temperature & Pressure Relationship

Temperature and pressure relationship for ABS pipes		
	Class C	Class E
Temperature (°C)	bar (psi)	bar (psi)
-40	9.0 (130)	15.0 (217)
-20	9.0 (130)	15.0 (217)
0	9.0 (130)	15.0 (217)
20	9.0 (130)	15.0 (217)
30	8.1 (117)	13.5 (195)
40	6.3 (91)	10.5 (152)
50	4.5 (65)	7.5 (108)
60	2.7 (39)	4.5 (65)

Sample Engineering specification

All ABS pipework and fittings shall be manufactured by EFFAST and conform to BS 5391, BS 5392 Part 1.

Extruded pipework and injection moulded fittings have WRAS accreditation for potable water supply and are available in imperial sizes.



Useful Information

The following information may be helpful in understanding the specification of metric and imperial sizes and pressure ratings when selecting pipe.

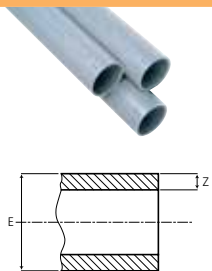
When specifying imperial pipe, fittings and other components, reference is made to the nominal size of the pipe bore in inches and fractions of an inch. With metric systems, reference is made to the outside diameter and is expressed in millimetres. It is important to note that with the exception of 2½"/75mm and 5"/140mm the systems are not interchangeable.

ABS Pressure Pipes 3m Lengths

Plain End

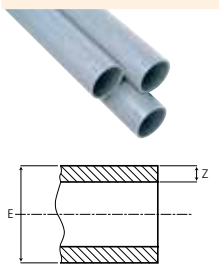
Code: PSABP

Pressure pipe class C

	Description	Product code	Z Min	Z Max	E	Weight (g / mtr)
	1"	APCCLC03203	1.9	2.1	33.6	200
	1¼"	APCCLC04003	2.4	2.6	42.2	337
	1½"	APCCLC05003	2.7	3.0	48.3	417
	2"	APCCLC06303	3.4	3.7	60.3	583
	2½"	APCCLC07503	3.6	-	75.2	1083
	3"	APCCLC09003	5.0	5.3	88.9	1167
	4"	APCCLC11003	6.4	6.9	114.3	1833
	6"	APCCLC16003	9.4	10.4	168.3	4000
	8"	APCCLC22503	12.2	13.2	219.1	9167

Code: PSABP

Pressure pipe class E

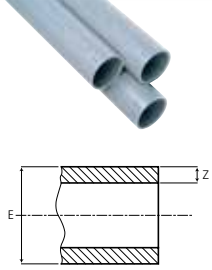
	½"	APECLE02003	1.9	2.1	21.4	105
	¾"	APECLE02503	2.4	2.6	26.7	125
	1"	APECLE03203	3.0	3.3	33.6	168
	1¼"	APECLE04003	3.8	4.1	42.2	417
	1½"	APECLE05003	4.4	4.7	48.3	517
	2"	APECLE06303	5.4	5.8	60.3	817
	3"	APECLE09003	8.0	8.5	88.9	1667
	4"	APECLE11003	10.3	10.9	114.3	2603

ABS Pressure Pipes 6m Lengths

Plain End

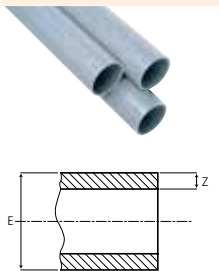
Code: PSABP

Pressure pipe class C

	Description	Product code	Z Min	Z Max	E	Weight (g / mtr)
	1"	APCCLC0320	1.9	2.1	33.6	200
	1¼"	APCCLC0400	2.4	2.6	42.2	337
	1½"	APCCLC0500	2.7	3.0	48.3	417
	2"	APCCLC0630	3.4	3.7	60.3	583
	2½"	APCCLC0750	3.6	-	75.2	1083
	3"	APCCLC0900	5.0	5.3	88.9	1167
	4"	APCCLC1100	6.4	6.9	114.3	1833
	6"	APCCLC1600	9.4	10.4	168.3	4000
	8"	APCCLC2250	12.2	13.2	219.1	9167

Code: PSABP

Pressure pipe class E

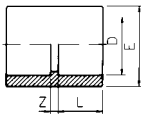
	½"	APECLE0200	1.9	2.1	21.4	105
	¾"	APECLE0250	2.4	2.6	26.7	125
	1"	APECLE0320	3.0	3.3	33.6	168
	1¼"	APECLE0400	3.8	4.1	42.2	417
	1½"	APECLE0500	4.4	4.7	48.3	517
	2"	APECLE0630	5.4	5.8	60.3	817
	3"	APECLE0900	8.0	8.5	88.9	1667
	4"	APECLE1100	10.3	10.9	114.3	2603

ABS - Imperial

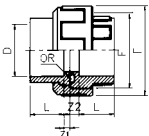
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

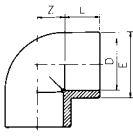
Socket Plain

Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
 	½"	AFAMAA0200	17	3	27	10	11
	¾"	AFAMAA0250	20	3	33	10	16
	1"	AFAMAA0320	23	3	41	10	25
	1¼"	AFAMAA0400	27	3	52	10	39
	1½"	AFAMAA0500	32	3	61	10	74
	2"	AFAMAA0630	37	3	75	10	132
	2½"	AFAMAA0750	44	4	90	1	164
	3"	AFAMAA0900	52	5	107	1	283
	4"	AFAMAA1100	67	6	133	1	526
	5"	AFAMAA1400	76	8	164	1	833
	6"	AFAMAA1600	90	8	198	1	1294
	8" *	AFAMAA2250	120	10	253	1	3391

Union Plain. Unions up to 2" 15 bar (20°C), above 2" 10 bar (20°C)

Code: PSABF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
 	½"	AFABOA0200	17	3	10	1"	42	10	31
	¾"	AFABOA0250	20	3	10	1¼"	52	10	49
	1"	AFABOA0320	23	3	10	1½"	59	10	67
	1¼"	AFABOA0400	27	3	12	2"	72	10	115
	1½"	AFABOA0500	32	3	14	2¼"	79	10	164
	2"	AFABOA0630	39	3	18	2¾"	96	10	288
	2½" *	AFABOA0750	44	3	18	3½"	119	1	434
	3" *	AFABOA0900	52	5	18	4"	134	1	599
	4" *	AFABOA1100	63	5	18	5"	163	1	876

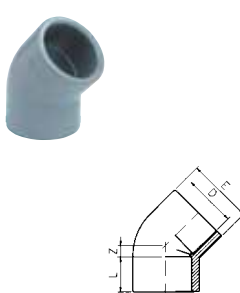
Elbow 90° Plain

Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
 	½"	AFAGOA0200	17	11	27	10	13
	¾"	AFAGOA0250	20	14	33	10	20
	1"	AFAGOA0320	23	17	41	10	35
	1¼"	AFAGOA0400	27	22	51	10	56
	1½"	AFAGOA0500	32	26	61	10	117
	2"	AFAGOA0630	37	34	75	10	222
	2½"	AFAGOA0750	44	39	90	1	301
	3"	AFAGOA0900	52	45	107	1	509
	4"	AFAGOA1100	63	59	133	1	948
	5"	AFAGOA1400	79	68	164	1	1543
	6"	AFAGOA1600	93	85	198	1	2961
	8" *	AFAGOA2250	116	116	258	1	6567

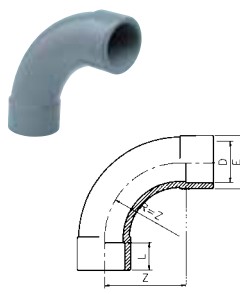
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C).

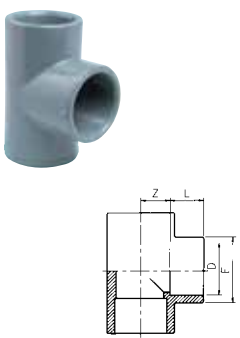
Elbow 45° Plain

Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	AFAGYA0200	17	5	27	10	12
	¾"	AFAGYA0250	20	6	33	10	18
	1"	AFAGYA0320	23	8	41	10	31
	1¼"	AFAGYA0400	27	10	52	10	47
	1½"	AFAGYA0500	32	12	61	10	97
	2"	AFAGYA0630	39	15	75	10	176
	2½"	AFAGYA0750	44	18	90	1	231
	3"	AFAGYA0900	52	21	107	1	390
	4"	AFAGYA1100	63	25	133	1	649
	6"	AFAGYA1600	90	36	198	1	2306
	8"*	AFAGYA2250	112	52	253	1	3820

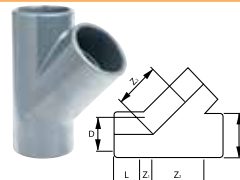
Bend 90° Short Radius Plain

Code: PSABF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
	½"	AFACUA0200	17	40	30	10	55
	¾"	AFACUA0250	20	50	36	10	55
	1"	AFACUA0320	23	64	44	10	90
	1¼"	AFACUA0400	27	80	54	1	156
	1½"	AFACUA0500	32	100	63	1	256
	2"	AFACUA0630	39	126	78	1	445
	2½"	AFACUA0750	44	150	94	1	777
	3"	AFACUA0900	51	180	113	1	1361
	4"	AFACUA1100	63	220	133	1	2150

Tee 90° Plain

Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	½"	AFATIA0200	17	11	27	10	17
	¾"	AFATIA0250	20	14	33	10	27
	1"	AFATIA0320	23	17	41	10	50
	1¼"	AFATIA0400	27	21	52	10	79
	1½"	AFATIA0500	32	26	61	10	116
	2"	AFATIA0630	37	33	75	5	284
	2½"	AFATIA0750	44	39	90	1	394
	3"	AFATIA0900	52	45	107	1	657
	4"	AFATIA1100	63	62	133	1	1131
	5"	AFATIA1400	76	71	164	1	2032
	6"	AFATIA1600	93	86	198	1	3755
	8"*	AFATIA2250	116	116	258	1	8453

Tee 45° plain

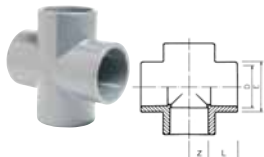
Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	1"	AFATYA0320	23	8	44	10	82
	1½"	AFATYA0500	31	12	65	10	203
	2"	AFATYA0630	38	14	85	10	336

ABS - Imperial

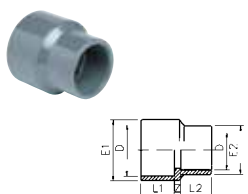
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C).

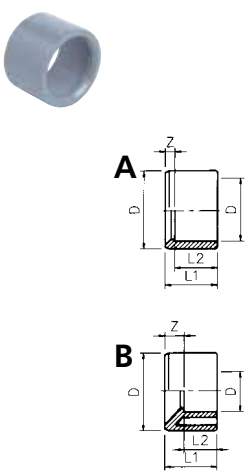
Cross 90° Plain

Code: PSABF	Nominal Size	Code	L	Z	E	Pack Qty	Weight (GR)
	1"	AFACXA0320	23	17	42	10	110
	1½"	AFACXA0500	31	26	61	10	270
	2"	AFACXA0630	38	33	75	10	510

Reducing Socket Plain

Code: PSABF	Nominal Size	Code	L1	L2	Z	E1	E2	Pack Qty	Weight (GR)
	1¼" x 1"	AFAMRA040D	27	23	5	51	42	10	49
	1½" x 1¼"	AFAMRA050E	32	27	5	61	52	10	84
	2" x 1½"	AFAMRA063F	39	32	5	75	62	10	155
	4" x 3"	AFAMRA110I	63	52	4	130	108	1	524

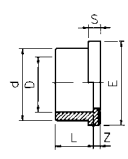
Reducing Bush Plain

Code: PSABF	Nominal Size	Code	L1	L2	Z	FIG	Pack Qty	Weight (GR)
	¾" x ½"	AFARCA025B	20	17	3	A	10	6
	1" x ½"	AFARCA032B	20	17	6	B	10	16
	1" x ¾"	AFARCA032C	23	20	3	A	10	10
	1¼" x 1"	AFARCA040D	27	23	4	A	10	20
	1½" x ¾"	AFARCA050C	32	20	12	B	10	39
	1½" x 1"	AFARCA050D	32	23	9	B	10	42
	1½" x 1¼"	AFARCA050E	32	27	5	A	10	22
	2" x 1"	AFARCA063D	39	23	16	B	10	69
	2" x 1¼"	AFARCA063E	39	27	12	B	10	71
	2" x 1½"	AFARCA063F	39	32	7	A	10	54
	2½" x 1½"	AFARCA075F	45	31	14	B	1	93
	2½" x 2"	AFARCA075G	44	39	5	A	1	95
	3" x 1½"	AFARCA090F	52	32	20	B	1	169
	3" x 2"	AFARCA090G	52	39	13	B	1	143
	3" x 2½"	AFARCA090H	52	44	8	A	1	96
	4" x 2"	AFARCA110G	63	39	24	B	1	336
	4" x 3"	AFARCA110I	63	52	11	A	1	258
	5" x 4"	AFARCA140L	77	65	12	A	1	415
	6" x 4"	AFARCA160L	90	63	27	B	1	745
	8" x 6"	AFARCA225M	118	91	27	B	1	1559

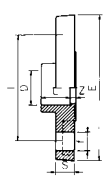
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C).

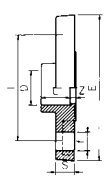
Stub Flange (Serrated Face) Plain

Code: PSABF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	1/2"	AFAQRA0200	17	3	27	6	34	10	8
	1"	AFAQRA0320	23	3	41	7	50	10	18
	1 1/2"	AFAQRA0500	32	3	61	8	73	10	50
	2"	AFAQRA0630	39	3	76	9	90	10	91
	2 1/2"	AFAQRA0750	44	3	90	10	106	1	118
	3"	AFAQRA0900	52	5	108	11	125	1	209
	4"	AFAQRA1100	63	5	134	12	155	1	330
	5"	AFAQRA1400	76	5	165	13	188	1	563
	6"	AFAQRA1600	90	6	197	14	218	1	816
	8"*	AFAQRA2250	119	7	248	19	274	1	1580

Full Face Flange Drilled to BS 10 Table E Plain

Code: PSABF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	1/2"	AFAFFA0200	17	4	95	14	65	8	4	70
	3/4"	AFAFFA0250	20	4	105	14	73	9	4	105
	1"	AFAFFA0320	23	4	115	14	83	16	4	145
	1 1/2"	AFAFFA0500	32	4	152	18	98	17	4	270
	2"	AFAFFA0630	38	4	165	18	115	20	4	380
	3"	AFAFFA0900	51	7	200	18	146	22	4	526
	4"	AFAFFA110E	61	5	220	18	178	23	8	663

Full Face Flange Drilled to BS 4504 NP10/16 Plain

Code: PSABF	Nominal Size	Code	L	Z	E	f	I	S	HOLES	Weight (GR)
	1/2"	AFAFNA0200	17	4	95	14	65	8	4	70
	3/4"	AFAFNA0250	20	4	105	14	73	9	4	105
	1"	AFAFNA0320	23	4	115	14	85	16	4	145
	1 1/4"	AFAFNA0400	27	4	142	18	100	17	4	220
	1 1/2"	AFAFNA0500	32	4	152	18	110	17	4	270
	2"	AFAFNA0630	38	4	165	18	125	20	4	380
	2 1/2"	AFAFNA0750	44	4	185	18	145	19	4	465
	3"	AFAFNA0900	51	7	200	18	160	22	8	524
	4"	AFAFNA1100	61	5	220	18	180	23	8	666

Blanking Flange Drilled to BS4504 NP10/16

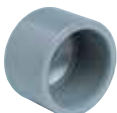
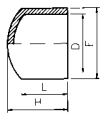
Code: PSABF	Nominal Size	Code	E	S	I	f	HOLES	Weight (GR)
	2"	AFIFCI0630	165	18	125	18	4	300
	3"	AFIFCI0900	200	20	160	18	8	524
	4"	AFIFCI1100	220	22	180	18	8	660
	6"	AFIFCI1600	285	28	240	22	8	1610

ABS - Imperial

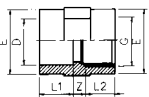
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

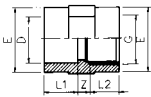
Cap Plain

Code: PSABF	Nominal Size	Code	L	H	E	Pack Qty	Weight (GR)
 	½"	AFACAA0200	17	37	27	10	9
	¾"	AFACAA0250	20	31	33	10	12
	1"	AFACAA0320	23	35	41	10	21
	1¼"	AFACAA0400	27	42	52	10	30
	1½"	AFACAA0500	32	47	61	10	59
	2"	AFACAA0630	39	48	75	10	104
	2½"	AFACAA0750	44	59	90	1	137
	3"	AFACAA0900	52	81	107	1	235
	4"	AFACAA1100	63	99	133	1	397
	6"	AFACAA1600	90	132	191	1	1021
	8"*	AFACAA2250	119	165	255	1	2311

Socket Plain/BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
 	½"	BSPF	AFCMAC0200	17	15	4	28	10	15
	¾"	BSPF	AFCMAC0250	20	16	6	34	10	22
	1"	BSPF	AFCMAC0320	23	19	6	42	10	37
	1¼"	BSPF	AFCMAC0400	27	21	8	51	10	60
	1½"	BSPF	AFCMAC0500	32	21	13	61	10	104
	2"	BSPF	AFCMAC0630	39	26	15	89	10	161
	3"	BSPF	AFCMAC0900	52	33	9	106	1	343

Socket Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSABF	Nominal Size	G	Code	L1	L2	Z	E	Pack Qty	Weight (GR)
 	½"	BSPT	AFRMER0200	17	15	4	28	10	19
	¾"	BSPF	AFRMER0250	20	16	6	34	10	30
	1"	BSPF	AFRMER0320	23	19	6	42	10	49
	1¼"	BSPF	AFRMER0400	27	21	8	51	10	76
	1½"	BSPF	AFRMER0500	32	21	13	61	10	124
	2"	BSPF	AFRMER0630	39	26	15	89	10	185

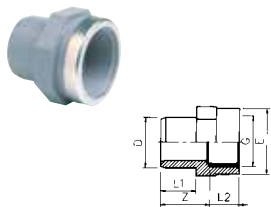
Adaptor Plain Male Spigot/BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
 	½"	BSPF	AFC AFC0200	17	15	28	24	10	19
	¾"	BSPF	AFC AFC0250	20	16	34	27	10	27
	1"	BSPF	AFC AFC0320	23	19	42	30	10	43
	1¼"	BSPF	AFC AFC0400	27	21	51	36	10	68
	1½"	BSPF	AFC AFC0500	32	21	58	41	10	73
	2"	BSPF	AFC AFC0630	39	25	72	48	10	115

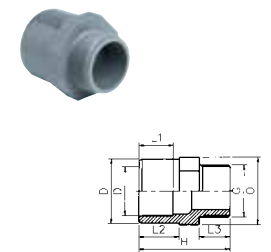
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C).

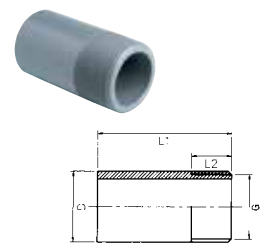
Adaptor Plain Male Spigot/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSABF	Nominal Size	G	Code	L1	L2	E	Z	Pack Qty	Weight (GR)
	½"	BSPF	AFRAER0200	17	15	28	24	10	23
	¾"	BSPF	AFRAER0250	20	16	34	27	10	35
	1"	BSPF	AFRAER0320	23	19	42	30	10	55
	1¼"	BSPF	AFRAER0400	27	21	51	36	10	84
	1½"	BSPF	AFRAER0500	32	21	58	41	10	93
	2"	BSPF	AFRAER0630	39	25	72	48	10	139

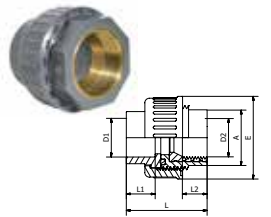
Adaptor Female Plain/BSP Male Threaded

Code: PSABF	Nominal Size	G	Code	L1	L2	L3	H	O	Pack Qty	Weight (GR)
	½"	BSPM	AFCAMC0200	17	19	15	46	30	10	16
	¾"	BSPM	AFCAMC0250	20	22	16	50	36	10	28
	1"	BSPM	AFCAMC0320	23	27	19	57	46	10	48
	1¼"	BSPM	AFCAMC0400	27	32	21	66	55	10	54
	1½"	BSPM	AFCAMC0500	32	39	21	74	65	10	113
	2"	BSPM	AFCAMC0630	39	44	25	84	80	10	184
	3"	BSPM	AFCAMC0900	52	61	33	113	115	1	356
	4"	BSPM	AFCAMC1100	63	66	39	120	130	1	454

Barrel Nipple Plain/BSP Male Taper Threaded

Code: PSABF	Nominal Size	G	Code	L1	L2	Pack Qty	Weight (GR)
	½"	BSPT	AFCBNC0200	50	17	10	14
	¾"	BSPT	AFCBNC0250	56	16	10	25
	1"	BSPT	AFCBNC0320	63	20	10	38
	1¼"	BSPT	AFCBNC0400	75	24	10	52
	1½"	BSPT	AFCBNC0500	88	30	10	80
	2"	BSPT	AFCBNC0630	88	32	10	115
	2½"	BSPT	AFCBNC0750	106	35	1	197
	3"	BSPT	AFCBNC0900	128	39	1	300
	4"	BSPT	AFCBNC1100	153	43	1	560

Composite Union Plain/BSP Female Brass Threaded with Plastic Nut

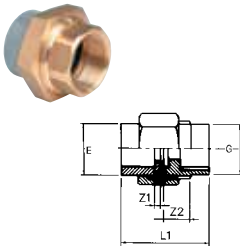
Code: PSABF	Nominal Size	G	Code	D1	D2	L1	L2	L	A	E	Weight (GR)
	½"	BSPT	AFCPFC0200	½"	½"	16	14	47	30	42	0.110
	¾"	BSPT	AFCPFC0250	¾"	¾"	19	16	52	36	53	
	1"	BSPT	AFCPFC0320	1"	1"	22	19	58	46	59	
	1¼"	BSPT	AFCPFC0400	1¼"	1¼"	26	23	65	55	72	0.290
	1½"	BSPT	AFCPFC0500	1½"	1½"	32	23	71	65	81	
	2"	BSPT	AFCPFC0630	2"	2"	38	23	85	80	99	

ABS - Imperial

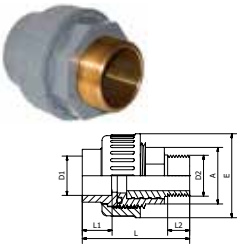
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

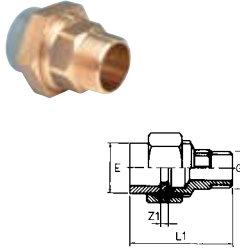
Composite Union Plain/BSP Female Brass Threaded

Code: PSABF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
	½"	BSPT	AFCBFC0200	28	58	3	1	175
	¾"	BSPT	AFCBFC0250	36	69	3	1	238
	1"	BSPT	AFCBFC0320	42	72	3	1	324
	1¼"	BSPT	AFCBFC0400	53	86	3	1	469
	1½"	BSPT	AFCBFC0500	59	92	3	1	595
	2"	BSPT	AFCBFC0630	74	109	3	1	982
	2½"	BSPT	AFCBFC0750	93	127	3	1	1663
	3"	BSPT	AFCBFC0900	105	139	5	1	2184

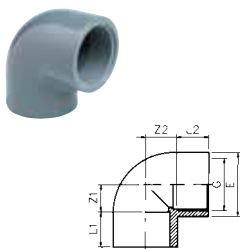
Composite Union Plain/BSP Taper Male Brass Threaded with Plastic Nut

Code: PSABF	Nominal Size	G	Code	D1	D2	L1	L2	L	A	E	Weight (GR)
	½"	BSPT	AFCPMC0200	½"	½"	16	13	61	30	42	155
	¾"	BSPT	AFCPMC0250	¾"	¾"	19	14	68	36	53	
	1"	BSPT	AFCPMC0320	1"	1"	22	18	77	46	59	
	1¼"	BSPT	AFCPMC0400	1¼"	1¼"	26	21	87	55	72	440
	1½"	BSPT	AFCPMC0500	1½"	1½"	32	21	94	65	81	
	2"	BSPT	AFCPMC0630	2"	2"	38	21	108	80	99	

Composite Union Plain/BSP Taper Male Brass Threaded

Code: PSABF	Nominal Size	G	Code	E	L1	Z1	Pack Qty	Weight (GR)
	½"	BSPT	AFCBMC0200	28	58	3	1	175
	¾"	BSPT	AFCBMC0250	36	69	3	1	238
	1"	BSPT	AFCBMC0320	42	72	3	1	324
	1¼"	BSPT	AFCBMC0400	53	86	3	1	469
	1½"	BSPT	AFCBMC0500	59	92	3	1	595
	2"	BSPT	AFCBMC0630	74	109	3	1	982
	2½"	BSPT	AFCBMC0750	93	127	3	1	1663
	3"	BSPT	AFCBMC0900	105	139	5	1	2184

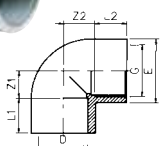
Elbow 90° Plain/BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	½"	BSPF	AFCGOC0200	17	15	11	12	28	10	16
	¾"	BSPF	AFCGOC0250	20	16	14	17	34	10	28
	1"	BSPF	AFCGOC0320	23	19	17	20	42	10	49
	1¼"	BSPF	AFCGOC0400	27	21	21	27	51	10	76
	1½"	BSPF	AFCGOC0500	32	21	26	37	61	10	163
	2"	BSPF	AFCGOC0630	39	26	33	46	75	10	308
	3"	BSPF	AFCGOC0900	51	35	47	66	106	1	549

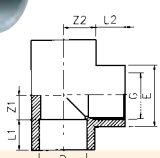
ABS Solvent Cement Fittings

Fittings up to 6" 15 bar (20°C), above 6" 9 bar (20°C). * Maximum working pressure: 9 bar (130 psi) at 20°C.

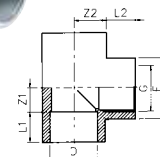
Elbow 90° Plain/BSP Female Threaded with Stainless Steel Reinforcing Ring

Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	1/2"	BSPT	AFRGER0200	17	15	11	12	28	10	20
	3/4"	BSPF	AFRGER0250	20	16	14	17	34	10	36
	1"	BSPF	AFRGER0320	23	19	17	20	42	10	61
	1 1/4"	BSPF	AFRGER0400	27	21	21	27	51	10	92
	1 1/2"	BSPF	AFRGER0500	32	21	26	37	61	10	183
	2"	BSPF	AFRGER0630	39	26	33	46	75	10	332

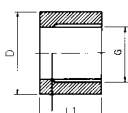
Tee 90° Plain/BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	1/2"	BSPF	AFCTIC0200	17	15	11	12	28	10	25
	3/4"	BSPF	AFCTIC0250	20	16	14	17	34	10	38
	1"	BSPF	AFCTIC0320	23	19	17	20	42	10	69
	1 1/4"	BSPF	AFCTIC0400	27	21	21	27	51	10	106
	1 1/2"	BSPF	AFCTIC0500	32	21	26	37	61	10	213
	2"	BSPF	AFCTIC0630	39	26	33	46	75	5	380
	3"	BSPF	AFCTIC0900	51	36	47	66	106	1	674

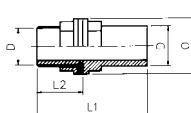
Tee 90° Plain/BSP Female Threaded Branch with Stainless Steel Reinforcing Ring

Code: PSABF	Nominal Size	G	Code	L1	L2	Z1	Z2	E	Pack Qty	Weight (GR)
	1/2"	BSPT	AFRTER0200	17	15	11	12	28	10	29
	3/4"	BSPF	AFRTER0250	20	16	14	17	34	10	46
	1"	BSPF	AFRTER0320	23	19	17	20	42	10	81
	1 1/4"	BSPF	AFRTER0400	27	21	21	27	51	10	122
	1 1/2"	BSPF	AFRTER0500	32	21	26	37	61	10	233
	2"	BSPF	AFRTER0630	39	26	33	46	75	5	404

Reducing Bush Plain/BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1	D	G	Pack Qty	Weight (GR)
	1/2" x 3/8"	BSPF	AFCRCC020A	16	1/2"	3/8"	10	2
	3/4" x 1/2"	BSPF	AFCRCC025B	19	3/4"	1/2"	10	5
	1" x 3/4"	BSPF	AFCRCC032C	22	1"	3/4"	10	9

Tank Connector Plain/BSP Male Threaded EPDM Gasket

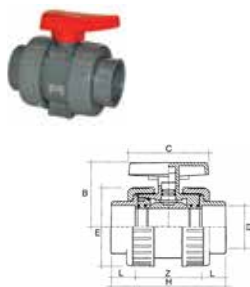
Code: PSABF	Nominal Size	Code	L	d	F	E	Weight (GR)
 	½"	BSPM AFCTCC0200	77	42	38	10	31
	¾"	BSPM AFCTCC0250	77	42	42	10	37
	1"	BSPM AFCTCC0320	103	55	55	10	71
	1¼"	BSPM AFCTCC0400	121	70	65	10	112
	1½"	BSPM AFCTCC0500	128	73	72	10	168
	2"	BSPM AFCTCC0630	154	85	93	10	317
	2½"	BSPM AFCTCC0750	164	88	106	1	358
	3"	BSPM AFCTCC0900	202	112	125	1	674
	4"	BSPM AFCTCC1100	230	130	154	1	1214

ABS - Imperial

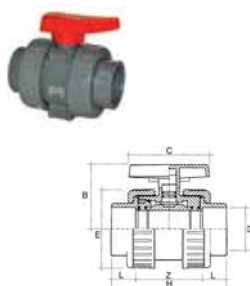
ABS Industrial Union Valves

Maximum working pressure for valves ½" – 2" 16 bar, for valves 2 ½" – 4" 10 bar at 20°C

Industrial Double Union Ball Valve Plain Sockets EPDM Seals

Code: PSABV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	ABA22A0160	50	51	16	46	78	65	16	112
	½"	ABA22A0200	50	51	17	46	78	65	16	112
	¾"	ABA22A0250	60	58	20	52	90	70	16	160
	1"	ABA22A0320	68	65	23	60	104	82	16	240
	1¼"	ABA22A0400	80	76	27	68	120	92	16	360
	1½"	ABA22A0500	94	88	31	78	140	105	16	552
	2"	ABA22A0630	115	104	38	93	169	123	16	920
	2½"	ABA22A0750	168	137	44	139	227	168	10	2480
	3"	ABA22A0900	168	138	51	139	242	168	10	2680
	4"	ABA22A1100	210	166	63	160	282	190	10	4400

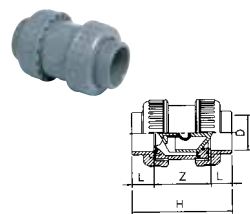
Industrial Double Union Ball Valve Plain Sockets FPM Seals

Code: PSABV	Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
	⅜"	ABA23A0160	50	51	16	46	78	65	16	112
	½"	ABA23A0200	50	51	17	46	78	65	16	112
	¾"	ABA23A0250	60	58	20	52	90	70	16	160
	1"	ABA23A0320	68	65	23	60	104	82	16	240
	1¼"	ABA23A0400	80	76	27	68	120	92	16	360
	1½"	ABA23A0500	94	88	31	78	140	105	16	552
	2"	ABA23A0630	115	104	38	93	169	123	16	920
	2½"	ABA23A0750	168	137	44	139	227	168	10	2480
	3"	ABA23A0900	168	138	51	139	242	168	10	2680
	4"	ABA23A1100	210	166	63	160	282	190	10	4400

ABS Check Valves

Maximum working pressure for valves ⅜" – 2" 16 bar, for valves 2" – 4" 10 bar at 20°C

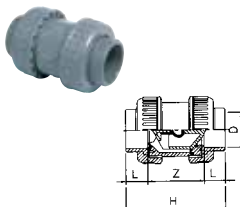
Check Valve Plain Sockets Stainless Steel Spring EPDM Seals

Code: PSABV	Nominal Size	Code	L	Z	H	Weight (GR)
	⅜"	ABA30A0160	16	46	78	88
	½"	ABA30A0200	17	46	78	88
	¾"	ABA30A0250	20	52	90	144
	1"	ABA30A0320	23	60	104	200
	1¼"	ABA30A0400	27	68	120	304
	1½"	ABA30A0500	31	78	140	480
	2"	ABA30A0630	38	93	169	800

ABS Check Valves

Maximum working pressure for valves 3/8" – 2" 16 bar, for valves 2" – 4" 10 bar at 20°C

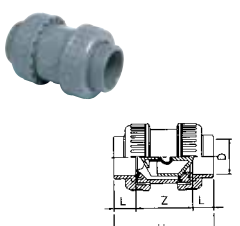
Check Valve Plain Sockets PTFE Coated Spring EPDM Seals

Code: PSABV	Nominal Size	Code	L	Z	H	Weight (GR)
	3/8"	ABA31A0160	16	46	78	88
	1/2"	ABA31A0200	17	46	78	88
	3/4"	ABA31A0250	20	52	90	144
	1"	ABA31A0320	23	60	104	200
	1 1/4"	ABA31A0400	27	68	120	304
	1 1/2"	ABA31A0500	31	78	140	480
	2"	ABA31A0630	38	93	169	800

ABS Air Release Valves

Maximum working pressure for valves 3/8" – 2" 16 bar, for valves 2" – 4" 10 bar at 20°C

Air Release Valve Plain Sockets with EPDM Seals

Code: PSABV	Nominal Size	Code	L	Z	H	Weight (GR)
	3/8"	ABA33A0160	16	46	78	88
	1/2"	ABA33A0200	17	46	78	88
	3/4"	ABA33A0250	20	52	90	144
	1"	ABA33A0320	23	60	104	200
	1 1/4"	ABA33A0400	27	68	120	304
	1 1/2"	ABA33A0500	31	78	140	480
	2"	ABA33A0630	38	93	169	800

ABS Actuated Double Union Ball Valves

(220 — 240 Volt) (110 Volt)

Electrically Actuated Double Union Ball Valve, Plain Sockets EPDM Seals

Code: PSABV	Nominal Size	Code
	1/2"	ABA24A0200
	3/4"	ABA24A0250
	1"	ABA24A0320
	1 1/4"	ABA24A0400
	1 1/2"	ABA24A0500
	2"	ABA24A0630
	2 1/2"	ABA24A0750
	3"	ABA24A0900
	4"	ABA24A1100

Electrically Actuated Double Union Ball Valve, FPM Seals

Code: PSABV	Nominal Size	Code
	1/2"	ABA25A0200
	3/4"	ABA25A0250
	1"	ABA25A0320
	1 1/4"	ABA25A0400
	1 1/2"	ABA25A0500
	2"	ABA25A0630
	2 1/2"	ABA25A0750
	3"	ABA25A0900
	4"	ABA25A1100

ABS - Imperial

ABS Actuated Double Union Ball Valves

Pneumatically Actuated Double Union Ball Valve, Plain Sockets EPDM Seals

Code: PSABV



Nominal Size	Code
1/2"	ABA26A0200
3/4"	ABA26A0250
1"	ABA26A0320
1 1/4"	ABA26A0400
1 1/2"	ABA26A0500
2"	ABA26A0630
2 1/2"	ABA26A0750
3"	ABA26A0900
4"	ABA26A1100

Pneumatically Actuated Double Union Ball Valve, Plain Sockets FPM Seals

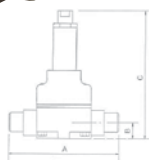
Code: PSABV



Nominal Size	Code
1/2"	ABA27A0200
3/4"	ABA27A0250
1"	ABA27A0320
1 1/4"	ABA27A0400
1 1/2"	ABA27A0500
2"	ABA27A0630
2 1/2"	ABA27A0750
3"	ABA27A0900
4"	ABA27A1100

Pressure Relief Valve (operates between 0.5 and 6.5 bar) EPDM Seals

Code: PSAQU



Nominal Size	Code	A	B	C
1/2" - 20mm	ABAPRV0200	148	26	164
3/4" - 25mm	ABAPRV0250	148	26	164
1" - 32mm	ABAPRV0320	148	26	164
1 1/4" - 40mm	ABAPRV0400	203	40	240
1 1/2" - 50mm	ABAPRV0500	203	40	240
2" - 63mm	ABAPRV0630	254	40	240

Up-rated spring available to increase maximum pressure to 10 bar.

- Available in PVCu, ABS, PVCc, PP and PVDF.
- Diaphragms available in natural rubber, EPDM and FPM (Viton)
- Bi-Directional Design
- No metal parts in contact with line media
- Can be preset
- Can be installed in any position
- Also works as a Pressure Sustaining Valve
- Minimum set pressure 0.5 Bar (7 PSI) and maximum set pressure 6.8 Bar (100 PSI)
- Easily adjusted on site
- Connections Male Spigot: PVCu Imperial or Metric, ABS - Imperial, PVCc Metric, PP Metric, PVDF Metric.
- Mounting inserts provided in base as standard

ABS Pressure Pipes 3m Lengths

Plain End

Code: PSABP

Pressure pipe class T (machining quality max. 12 bar at 20°C)

Description	Product code	Z Min	Z Max	E	Weight (g / mtr)
½"	APTCLT02003	3.5	3.7	21.4	168
¾"	APTCLT02503	3.5	3.7	26.7	250
1"	APTCLT03203	4.2	4.5	33.6	367
1¼"	APTCLT04003	5.1	5.5	42.2	452
1½"	APTCLT05003	5.8	6.2	48.3	667
2"	APTCLT06303	7.0	7.4	60.3	1033

ABS Pressure Pipes 6m Lengths

Plain End

Code: PSABP

Pressure pipe class T (machining quality max. 12 bar at 20°C)

Description	Product code	Z Min	Z Max	E	Weight (g / mtr)
½"	APTCLT0200	3.5	3.7	21.4	168
¾"	APTCLT0250	3.5	3.7	26.7	250
1"	APTCLT0320	4.2	4.5	33.6	367
1¼"	APTCLT0400	5.1	5.5	42.2	452
1½"	APTCLT0500	5.8	6.2	48.3	667
2"	APTCLT0630	7.0	7.4	60.3	1033

ABS Imperial Threaded Fittings

For PTFE Tape see Accessories section

Socket BSP Female Threaded

Code: PSABF

Nominal Size	G	Code	L	Z	E	Pack Qty	Weight (GR)
½"	BSPF	AFFMAF0200	15	7	27	10	16
¾"	BSPF	AFFMAF0250	16	7	33	10	20
1"	BSPF	AFFMAF0320	19	8	41	10	36
1¼"	BSPF	AFFMAF0400	21	8	50	10	52
1½"	BSPF	AFFMAF0500	21	8	61	10	56
2"	BSPF	AFFMAF0630	26	8	75	10	100

Barrel Nipple BSP Male Taper Threaded

Code: PSABF

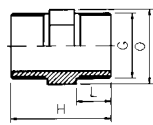
Nominal Size	G	Code	L	H	Pack Qty	Weight (GR)
½"	BSPT	AFFBAF0200	16	50	10	10
¾"	BSPT	AFFBAF0250	19	56	10	16
1"	BSPT	AFFBAF0320	21	62	10	24
1¼"	BSPT	AFFBAF0400	24	75	10	41
1½"	BSPT	AFFBAF0500	32	87	10	66
2"	BSPT	AFFBAF0630	29	87	10	95
2½"	BSPT	AFFBAF0750	30	105	1	135
3"	BSPT	AFFBAF0900	37	128	1	194
4"	BSPT	AFFBAF1100	42	156	1	388

ABS - Threaded

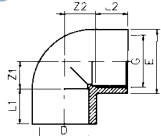
ABS Imperial Threaded Fittings

For PTFE Tape see Accessories section

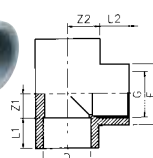
Hexagon Nipple BSP Male Threaded

Code: PSABF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
 	½"	BSPM	AFFNIF0200	15	42	24	10	8
	¾"	BSPM	AFFNIF0250	16	44	30	10	14
	1"	BSPM	AFFNIF0320	19	50	36	10	24
	1¼"	BSPM	AFFNIF0400	21	58	46	10	36
	1½"	BSPM	AFFNIF0500	21	58	50	10	40
	2"	BSPM	AFFNIF0630	26	66	65	10	72

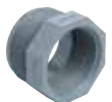
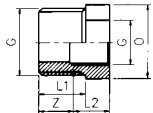
Elbow 90° BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1/L2	Z1/Z2	E	Pack Qty	Weight (GR)
 	½"	BSPF	AFFGOF0200	15	12	28	10	15
	¾"	BSPF	AFFGOF0250	16	17	34	10	27
	1"	BSPF	AFFGOF0320	19	20	42	10	48
	1¼"	BSPF	AFFGOF0400	21	26	51	10	75
	1½"	BSPF	AFFGOF0500	21	36	62	10	162
	2"	BSPF	AFFGOF0630	26	45	77	10	306

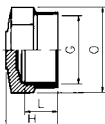
Tee 90° BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L1/L2	Z1/Z2	E	Pack Qty	Weight (GR)
 	½"	BSPF	AFFTIF0200	15	12	28	10	23
	¾"	BSPF	AFFTIF0250	16	17	34	10	36
	1"	BSPF	AFFTIF0320	19	20	42	10	67
	1¼"	BSPF	AFFTIF0400	21	26	51	10	104
	1½"	BSPF	AFFTIF0500	21	36	62	10	210
	2"	BSPF	AFFTIF0630	26	45	77	5	376

Reducing Bush BSP Male Threaded/BSP Female Threaded

Code: PSABF	Nominal Size	Code	L1	L2	Z	O	Pack Qty	Weight (GR)
 	¾" x ½"	AFFRCF025B	16	15	13	30	10	10
	1" x ¾"	AFFRCF032C	19	16	14	36	10	16
	1¼" x 1"	AFFRCF040D	21	19	16	46	10	28
	1½" x 1¼"	AFFRCF050E	21	21	14	55	10	30
	2" x 1½"	AFFRCF063F	25	21	18	65	10	54
	2½" x 2"	AFFRCF075G	30	25	20	80	1	108
	3" x 2½"	AFFRCF090H	33	30	20	95	1	128
	4" x 3"	AFFRCF110I	39	33	24	120	1	304

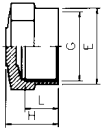
Plug BSP Male Threaded

Code: PSABF	Nominal Size	G	Code	L	H	O	Pack Qty	Weight (GR)
 	½"	BSPM	AFFTAF0200	15	29	24	10	8
	¾"	BSPM	AFFTAF0250	16	30	30	10	12
	1"	BSPM	AFFTAF0320	19	33	36	10	20
	1¼"	BSPM	AFFTAF0400	21	39	46	10	32
	1½"	BSPM	AFFTAF0500	21	39	50	10	36
	2"	BSPM	AFFTAF0630	26	43	65	10	64

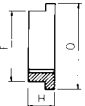
ABS Imperial Threaded Fittings

For PTFE Tape see Accessories section

Cap BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	L	H	E	Pack Qty	Weight (GR)
 	½"	BSPF	AFFCAF0200	15	21	28	10	12
	¾"	BSPF	AFFCAF0250	16	23	34	10	14
	1"	BSPF	AFFCAF0320	19	26	42	10	16
	1¼"	BSPF	AFFCAF0400	21	29	51	10	28
	1½"	BSPF	AFFCAF0500	21	32	61	10	40
	2"	BSPF	AFFCAF0630	26	37	75	10	64
	3"	BSPF	AFFCAF0900	33	53	103	1	216

Backnut BSP Female Threaded

Code: PSABF	Nominal Size	G	Code	E	H	O	Pack Qty	Weight (GR)
 	½"	BSPF	AFFNUF0200	28	13	38	10	10
	¾"	BSPF	AFFNUF0250	33	14	43	10	13
	1"	BSPF	AFFNUF0320	46	16	56	10	24
	1¼"	BSPF	AFFNUF0400	50	18	65	10	28
	1½"	BSPF	AFFNUF0500	60	19	72	10	36
	2"	BSPF	AFFNUF0630	80	21	94	10	72
	2½"	BSPF	AFFNUF0750	95	23	105	1	144
	3"	BSPF	AFFNUF0900	110	27	125	1	188
	4"	BSPF	AFFNUF1100	140	31	154	1	280

ABS - Threaded

EFFAST Polypropylene

Polypropylene Pipe Systems

Polypipe Effast has developed a range of polypropylene valves and fittings and will continue to increase the range of products.

Polypropylene pipe work systems are widely used in industrial processing applications, because of its good characteristics.

Polypropylene offers good resistance to abrasion, good thermal properties and is suitable for working at higher temperatures than PVCu and ABS.

Colour

Polypropylene material is beige-grey in colour.

Chemical Resistance

Polypropylene has good chemical resistance. It is resistant to acids, alkalis, salts and to a number of organic solvents.

Standards

Individual products are in compliance with appropriate British and European Standards:

Fittings DIN 16962

Threaded fittings BS 21, DIN 2999, ISO 7

Pressure Rating

Maximum 10 bar at 20°C unless otherwise stated.

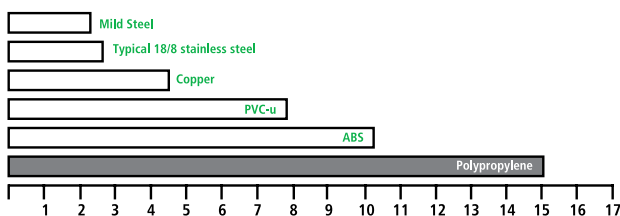
PP-H in sub-zero temperatures

PP-H Pipe systems are suitable for temperatures as low as -10°C, however it is necessary as with any other pipeline to take preventative measures to ensure the pipeline fluid does not freeze, as freezing would cause subsequent damage to the system.

Thermal expansion

The thermal coefficient of linear expansion for PP-H is $15 \times 10^{-5} \text{m/m.}^\circ\text{C}$

It is necessary in certain situations to make special provision for this expansion and contraction. Thermal expansion of PP-H is compared with other materials, in the following chart.



General Information

-10°C to +110°C

Temperature range



Socket fusion welding

The Effast Polypropylene range is connected by socket fusion welding.

Socket fusion welding in dimensions of 20mm to 110mm, however special reinforcement collars will be required for 16mm joints.

The principle of socket fusion welding is constant however small differences in technique may occur on machinery from different suppliers. It is important to note that only like materials can be joined.

Below are details of the socket fusion process and illustrations to show the process.

During the process strict adherence to the safety protocols should be given at all times.

Preparing the equipment.

It is possible to use hand held socket fusion machines when joining materials in dimensions from 20mm to 63mm, however a bench top machine is preferred if any quantity of joints is required. The equipment should be clean and in good working order before any operation takes place. Careful attention should be given when following the tool set up as shown in the machine protocols. After the tool set up is completed the heater should be allowed to heat for 10 to 15 minutes, until the joining tools have reached their required temperature. A digital thermometer should be used to check the temperature before welding commences. It should be noted that during operation the welding area should be protected from draughts, dust and adverse weather conditions likely to corrupt the joint integrity.

Preparing the pipe and fittings.

The pipe in all cases should be cut with a sharp set of pipe cutters suitable for cutting plastic piping, as this will provide a square end suitable for socket fusion welding. It is important to ensure both the pipes and the fittings are clean and free from oil, water and

grit before heating takes place. The pipe is peeled to remove the oxidised layer of material caused by UV radiation from the joint area. After the pipe is peeled, both the interior of the fitting and the peeled area of the pipe may be wiped with an alcohol wipe. Ensure there are no scrapings or chips of material attached to the pipe.

Technical Information.

The socket fusion of PP requires temperatures between 250 and 270 degrees Celsius on the heating tool before joining can be undertaken. Joining is determined by depth and shear pressure as the two preheated parts are brought together, one inside the other. The necessary times relevant to the joining process are; heating time, change over time, fixing time and cooling time. These are shown in the table.

The welding process.

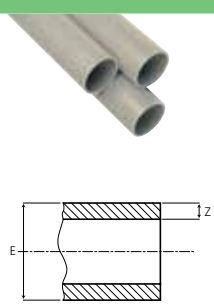
After the set up and preparation has been completed in line with the machine instructions guide. The newly prepared pipes and fittings can be introduced to the heat source ensuring that both the pipe and the fitting are entered to the correct depth. They are then allowed to heat for the pre determined time. A bead of molten material should be visible forming on both the pipe and the fitting as heating takes place. When the time has elapsed, the pipe and fitting can be removed from the heat source. A change over time is shown on the table, this should be adhered to. The two parts should be joined together ensuring that the pipe is entered to the stop point inside the fitting. The joint should be held in position, and then allowed to cool in line with the correct table of parameters. A uniform double weld bead should be visible around the neck of the fitting, and a single weld bead should be evident inside the fitting. Testing can take place 1 hour after the last weld is complete.

Heating times for socket fusion joints in PP. (DVS 2207, part 11)

Pipe od in mm	Min wall thickness in mm	Heating time in secs	Change over time in secs max	Cooling time in mins
20	2.5	5	4	2
25	2.7	7		
32	3.0	8		
40	3.7	12	6	4
50	4.6	18		
63	3.6	24		
75	4.3	30	8	6
90	5.1	40		
110	6.3	50	10	8

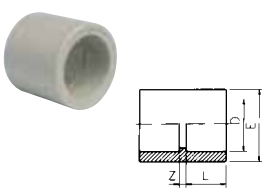
Polypropylene Pressure Pipes 5m Lengths Plain End

6 Metre Pressure Pipe 10 Bar

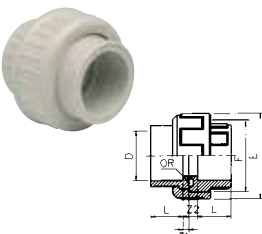
Code: PSPPP	Nominal Size	Product code	Z min	Z max	E	Weight (g / mtr)
	20	PPI0CLI00200	2.5	3.0	20	
	25	PPI0CLI00250	2.7	3.2	25	
	32	PPI0CLI00320	3.0	3.5	32	
	40	PPI0CLI00400	3.7	4.3	40	
	50	PPI0CLI00500	4.6	5.3	50	
	63	PPI0CLI00630	5.8	6.6	63	
	75	PPI0CLI00750	6.9	7.8	75	
	90	PPI0CLI00900	8.2	9.3	90	
	110	PPI0CLI01100	10.0	11.2	110	

Polypropylene Socket Fusion Fittings

Socket Fusion Coupler Plain End

Code: PSPPF	Nominal Size	Code	Z	L	E	Weight (GR)
	20	PFIMAI0200	3	16	29	12
	25	PFIMAI0250	4	18	36	18
	32	PFIMAI0320	3	20	43	28
	40	PFIMAI0400	4	22	53	42
	50	PFIMAI0500	4	25	66	65
	63	PFIMAI0630	4	30	82	104
	75	PFIMAI0750	69	7	92	168
	90	PFIMAI0900	81	10	110	301
	110	PFIMAI1100	96	13	134	425

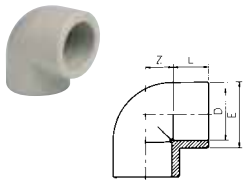
Socket Fusion Union Plain. Supplied with EPDM O ring—for FPM O Ring see Accessories Section

Code: PSPPF	Nominal Size	Code	L	Z1	Z2	F	E	Pack Qty	Weight (GR)
	20	PFIBOI0200	16	3	11	1"	42	10	38
	25	PFIBOI0250	18	3	13	1 1/4"	52	10	58
	32	PFIBOI0320	20	3	15	1 1/2"	59	10	80
	40	PFIBOI0400	22	7	16	2"	72	10	118
	50	PFIBOI0500	25	3	26	2 1/4"	79	10	170
	63	PFIBOI0630	30	11	25	2 3/4"	96	10	285

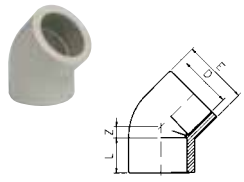
Polypropylene

Polypropylene Socket Fusion Fittings

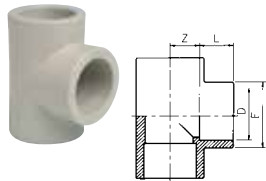
Socket Fusion Elbow 90° Plain

Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	PFIGOI0200	16	11	29	17
	25	PFIGOI0250	18	14	36	28
	32	PFIGOI0320	20	18	43	45
	40	PFIGOI0400	22	22	53	70
	50	PFIGOI0500	25	27	66	130
	63	PFIGOI0630	30	32	82	230
	75	PFIGOI0750	73	42	92	280
	90	PFIGOI0900	86	51	110	500
	110	PFIGOI1100	105	64	134	865

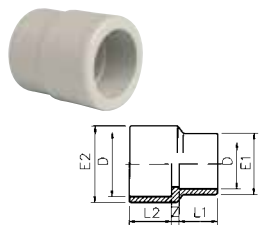
Socket Fusion Elbow 45° Plain

Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	PFIGYI0200	16	5	29	15
	25	PFIGYI0250	18	6	36	24
	32	PFIGYI0320	20	8	43	36
	40	PFIGYI0400	22	10	53	58
	50	PFIGYI0500	25	12	66	92
	63	PFIGYI0630	30	14	82	170
	75	PFIGYI0750	50	20	91	215
	90	PFIGYI0900	61	26	110	355
	110	PFIGYI1100	71	30	134	615

Socket Fusion Tee 90° Plain

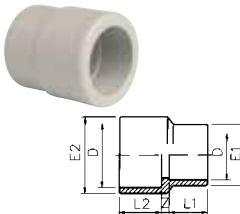
Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
	20	PFITII0200	16	11	29	20
	25	PFITII0250	18	14	36	37
	32	PFITII0320	20	18	43	58
	40	PFITII0400	22	22	53	92
	50	PFITII0500	25	27	66	146
	63	PFITII0630	30	32	82	280
	75	PFITII0750	73	42	92	350
	90	PFITII0900	86	51	110	600
	110	PFITII1100	105	64	134	1030

Socket Fusion Reducing Socket Plain

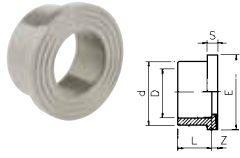
Code: PSPPF	Nominal Size	Code	L1	L2	Z	E1	E2	Weight (GR)
	25 x 20	PFIMRI025B	16	18	6	29	36	11
	32 x 20	PFIMRI032B	16	20	6	29	43	15
	32 x 25	PFIMRI032C	18	20	6	36	43	18
	40 x 25	PFIMRI040C	18	22	10	36	53	23
	40 x 32	PFIMRI040D	20	22	10	43	53	25
	50 x 32	PFIMRI050D	20	25	12	43	66	48

Polypropylene Socket Fusion Fittings

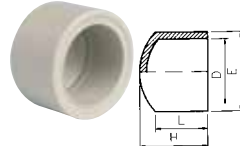
Socket Fusion Reducing Socket Plain

Code: PSPPF	Nominal Size	Code	L1	L2	Z	E1	E2	Weight (GR)
	50 x 40	PFIMRI050E	22	25	12	53	66	53
	63 x 32	PFIMRI063D	20	30	18	43	82	71
	63 x 40	PFIMRI063E	22	30	17	53	82	78
	63 x 50	PFIMRI063F	25	30	13	66	82	80
	75X63	PFIMRI075G	33	28		63	75	112
	90X63	PFIMRI090G	53	27		63	90	180
	90X75	PFIMRI090H	36	34		75	90	156
	110X90	PFIMRI110I	48	35		90	110	274

Socket Fusion Stub Flange (Serrated) Plain

Code: PSPPF	Nominal Size	Code	L	Z	d	S	E	Pack Qty	Weight (GR)
	20	PFIQRI0200	16	3	27	6	34	10	7
	25	PFIQRI0250	18	3	33	7	41	10	11
	32	PFIQRI0320	20	3	41	7	51	10	15
	40	PFIQRI0400	22	3	50	8	61	10	24
	50	PFIQRI0500	25	3	61	8	73	10	34
	63	PFIQRI0630	30	3	76	9	90	10	60
	75	PFIQRI0750	26	36	90	10	106		103
	90	PFIQRI0900	22	43	108	11	125		143
	110	PFIQRI1100	38	50	131	12	150		225

Socket Fusion Cap Plain

Code: PSPPF	Nominal Size	Code	L	H	E	Weight (GR)
	20	PFICAI0200	16	27	29	9
	25	PFICAI0250	18	30	36	13
	32	PFICAI0320	20	34	43	22
	40	PFICAI0400	22	38	53	33
	50	PFICAI0500	25	44	66	52
	63	PFICAI0630	30	51	82	86
	75	PFICAI0750	34	55	92	139
	90	PFICAI0900	38	65	110	252
	100	PFICAI1100	44	75	134	412

Polypropylene Adaptor Fittings

For dimensions see PVCu equivalent-PVCu Section

Composite Union Plain/BSP Female Brass Threaded

Code: PSPPF	Nominal Size	Code
	20 x 1/2"	PFCBFC0200
	25 x 3/4"	PFCBFC0250
	32 x 1"	PFCBFC0320
	40 x 1 1/4"	PFCBFC0400
	50 x 1 1/2"	PFCBFC0500
	63 x 2"	PFCBFC0630

Polypropylene

Polypropylene Adaptor Fittings

For dimensions see PVCu equivalent-PVCu Section

Composite Union Plain/BSP Male Taper Brass Threaded

Code: PSPPF

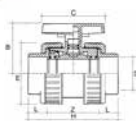


mm x Inches	Code
20 x 1/2"	PFCBMC0200
25 x 3/4"	PFCBMC0250
32 x 1"	PFCBMC0320
40 x 1 1/4"	PFCBMC0400
50 x 1 1/2"	PFCBMC0500
63 x 2"	PFCBMC0630

Polypropylene Manual Ball Valves

Manual EPDM Ball Valves

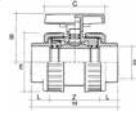
Code: PSAQU



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
20	PBI22I0200	50	51	16	46	78	65	16	63
25	PBI22I0250	60	58	19	52	90	70	16	125
32	PBI22I0320	68	65	22	60	104	82	16	170
40	PBI22I0400	80	76	26	68	120	92	16	250
50	PBI22I0500	94	88	31	78	140	105	16	425
63	PBI22I0630	115	104	38	93	169	123	16	710

Manual FPM Ball Valves

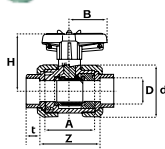
Code: PSAQU



Nominal Size	Code	E	B	L	Z	H	C	PN	Weight (GR)
20	PBI23I0200	50	51	16	46	78	65	16	63
25	PBI23I0250	60	58	19	52	90	70	16	125
32	PBI23I0320	68	65	22	60	104	82	16	170
40	PBI23I0400	80	76	26	68	120	92	16	250
50	PBI23I0500	94	88	31	78	140	105	16	425
63	PBI23I0630	115	104	38	93	169	123	16	710

Double Union Ball Valve with Locking Handle Fusion Sockets EPDM Seals

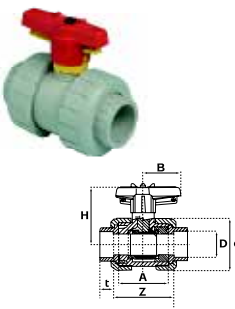
Code: PSPRA



Nominal Size	Code	A	Z	t	d	H	B	PN
16	PBI12I0160	62	68	17	53	72	40	10
20	PBI12I0200	62	68	17	53	72	40	10
25	PBI12I0250	70	76	20	63	79	52	10
32	PBI12I0320	74	81	23	70	82	52	10
40	PBI12I0400	84	90	27	85	100	64	10
50	PBI12I0500	95	104	32	101	108	73	10
63	PBI12I0630	109	121	39	122	117	85	10
75	PBI12I0750	137	148	45	155	144	110	10
90	PBI12I0900	163	183	56	188	163	132	10
110	PBI12I1100	163	176	64	188	163	132	6

Polypropylene Manual Ball Valves

Double Union Ball Valve with Locking Handle Fusion Sockets FPM Seals

Code: PSPRA	Nominal Size	Code	A	Z	t	d	H	B	PN
	16	PBI13I0160							
	20	PBI13I0200							
	25	PBI13I0250							
	32	PBI13I0320							
	40	PBI13I0400							
	50	PBI13I0500							
	63	PBI13I0630							
	75	PBI13I0750							
	90	PBI13I0900							
	110	PBI13I1100							

Polypropylene Check Valves

For dimensions see PVCu equivalent-PVCu Section

Fusion Sockets EPDM Seals

Code: PSPPV	Nominal Size	Code
	20	PBI30I0200
	25	PBI30I0250
	32	PBI30I0320
	40	PBI30I0400
	50	PBI30I0500
	63	PBI30I0630

Fusion Sockets FPM Seals

Code: PSAQU	Nominal Size	Code
	20	PBI32I0200
	25	PBI32I0250
	32	PBI32I0320
	40	PBI32I0400
	50	PBI32I0500
	63	PBI32I0630

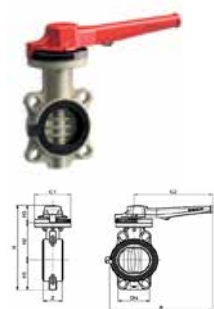
Polypropylene

Butterfly Valves

For dimensions see PVCu equivalent-PVCu Section

Pro flow T series - EPDM seals

Code: PSAQU

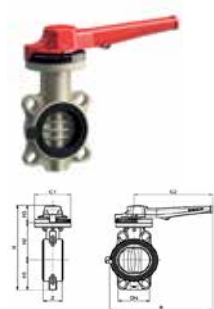


Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
75	PBAPFT0750	75	65	80	132	62	274	48	113	245.5	312
90	PBAPFT0900	90	80	92	132	62	286	59	113	245.5	315
110	PBAPFT1100	110	100	106	132	62	300	59.5	113	245.5	320.5
140	PBAPFT1400*										
160	PBAPFT1600*										
225	PBAPFT2250*										

*Available in 2018

Pro flow T series - FPM seals

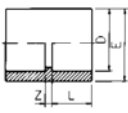
Code: PSAQU

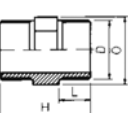


Nominal Size	Code	d	DN	H1	H2	H3	H	Z	C1	C2	B
75	PBAPFT075F	75	65	80	132	62	274	48	113	245.5	312
90	PBAPFT090F	90	80	92	132	62	286	59	113	245.5	315
110	PBAPFT110F	110	100	106	132	62	300	59.5	113	245.5	320.5
140	PBAPFT140F*										
160	PBAPFT160F*										
225	PBAPFT225F*										

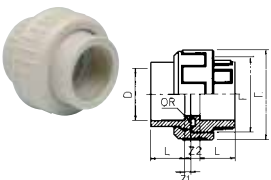
*Available in 2018

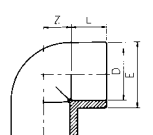
Polypropylene Threaded Fittings

Socket						
Code: PSPPF	Nominal Size	Code	Z	L	E	Weight (GR)
 	½"	PFFMAF0200	3	16.5	30.5	12
	¾"	PFFMAF0250	3.5	18.5	36	18
	1"	PFFMAF0320	3	20.5	43.5	28
	1¼"	PFFMAF0400	4	22.5	53.5	42
	1½"	PFFMAF0500	4	25.5	66	65
	2"	PFFMAF0630	4	30	82	104

Nipple						
Code: PSPPF	Nominal Size	Code	L	H	O	Weight (GR)
 	½"	PFFNIF0200	11	32	19	11
	¾"	PFFNIF0250	11	42	24	9
	1"	PFFNIF0320	15	42	30	11
	1¼"	PFFNIF0400	16	50	36	18
	1½"	PFFNIF0500	19	58	36	28
	2"	PFFNIF0630	21	58	50	46

Adaptor Socket								
Code: PSPPF	Nominal Size	Code	L1	L2	Z	E	O	Weight (GR)
	20 x ½"	PFPMAP020B	16.5	15	6	28	32	15
	25 x ¾"	PFPMAP025C	18.5	16	7	34	36	20
	32 x 1"	PFPMAP032D	20.5	19	7	43.5	46	32
	40 x 1¼"	PFPMAP040E	22.5	22	7	50	55	50
	50 x 1½"	PFPMAP050F	25.5	22	9	60	65	80
	63 x 2"	PFPMAP063G	30.5	26	9	78	80	140

Threaded Union with O-Ring with EPDM O ring can also be supplied with FPM O ring								
Code: PSPPF	Nominal Size	Code	L	Z1	Z2	F	E	Weight (GR)
	½"	PFFBOF0200	16	3	11	1"	42	38
	¾"	PFFBOF0250	18	3	13	1¼"	52	58
	1"	PFFBOF0320	20	3	15	1½"	59	80
	1¼"	PFFBOF0400	22	7	16	2"	72	118
	1½"	PFFBOF0500	25	3	26	2¼"	79	170
	2"	PFFBOF0630	30	11	25	2¾"	96	285

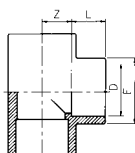
90° Elbow						
Code: PSPPF	Nominal Size	Code	L	Z	E	Weight (GR)
 	½"	PFFGOF0200	16	11	29	17
	¾"	PFFGOF0250	18	14	36	28
	1"	PFFGOF0320	20	18	43	45
	1¼"	PFFGOF0400	22	22	53	70
	1½"	PFFGOF0500	25	27	66	130
	2"	PFFGOF0630	30	32	82	230

Polypropylene Threaded

Polypropylene Threaded Fittings

90° Tee

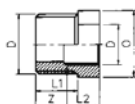
Code: PSPPF



Nominal Size	Code	L	Z	E	Weight (GR)
1/2"	PFFTIF0200	16	11	29	20
3/4"	PFFTIF0250	18	14	36	37
1"	PFFTIF0320	20	18	43	58
1 1/4"	PFFTIF0400	22	22	53	92
1 1/2"	PFFTIF0500	25	27	66	146
2"	PFFTIF0630	30	32	82	280

Reducing Bush

Code: PSPPF



Nominal Size	Code	L1	L2	Z	O	Weight (GR)
3/4" x 1/2"	PFFRCF025B	16.3	15.0	13.3	30	13
1" x 3/4"	PFFRCF032C	19.1	16.3	14.8	36	20
1 1/4" x 1"	PFFRCF040D	21.4	19.1	16.3	46	35
1 1/2" x 1 1/4"	PFFRCF050E	21.4	21.4	14.0	55	37
2" x 1 1/2"	PFFRCF063F	25.7	21.4	18.3	65	67

Reducing Nipple

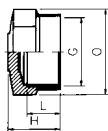
Code: PSPPF



Nominal Size	Code	L1	L2	H	O	Weight (GR)
3/4" x 1/2"	PFFNRF025B	13.3	15.0	43	30	17
1" x 3/4"	PFFNRF032C	19.1	16.3	47	36	26
1 1/4" x 1"	PFFNRF040D	21.4	21.4	56	46	42
1 1/2" x 1 1/4"	PFFNRF050E	21.4	21.4	58	50	48
2" x 1 1/2"	PFFNRF063F	25.7	21.4	62	65	81

Plug

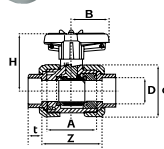
Code: PSPPF



Nominal Size	Code	L	H	O	Weight (GR)
1/2"	PFFTAF0200	15.0	29	24	10
3/4"	PFFTAF0250	16.3	30	30	15
1"	PFFTAF0320	19.1	33	36	25
1 1/4"	PFFTAF0400	21.4	39	46	40
1 1/2"	PFFTAF0500	21.4	39	50	45
2"	PFFTAF0630	25.7	43	65	80

Double Union Ball Valve with Locking Handle BSP Female Threaded Sockets EPDM Seals

Code: PSPRA

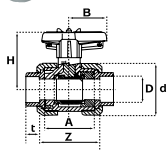


Nominal Size	G	Code	A	Z	t	d	H	B	PN
3/8"	BSPF	PBF12F0160	62	68	17	53	72	40	10
1/2"	BSPF	PBF12F0200	62	68	17	53	72	40	10
3/4"	BSPF	PBF12F0250	70	76	20	63	79	52	10
1"	BSPF	PBF12F0320	74	81	23	70	82	52	10
1 1/4"	BSPF	PBF12F0400	84	90	27	85	100	64	10
1 1/2"	BSPF	PBF12F0500	95	104	32	101	108	73	10
2"	BSPF	PBF12F0630	109	121	39	122	117	85	10
2 1/2"	BSPF	PBF12F0750	137	148	45	155	144	110	10
3"	BSPF	PBF12F0900	163	183	56	188	163	132	10

Polypropylene Threaded Fittings

Double Union Ball Valve with Locking Handle Fusion Sockets FPM Seals

Code: PSPRA



Nominal Size	Code	A	Z	t	d	H	B	PN
16	PBI13I0160	62	68	17	53	72	40	10
20	PBI13I0200	62	68	17	53	72	40	10
25	PBI13I0250	70	76	20	63	79	52	10
32	PBI13I0320	74	81	23	70	82	52	10
40	PBI13I0400	84	90	27	85	100	64	10
50	PBI13I0500	95	104	32	101	108	73	10
63	PBI13I0630	109	121	39	122	117	85	10
75	PBI13I0750	137	148	45	155	144	110	10
90	PBI13I0900	163	183	56	188	163	132	10
110	PBI13I1100	163	176	64	188	163	132	6

Polypropylene Threaded

Effast PE100 high density polyethylene pressure pipe system is a fast and reliable solution to the challenges presented by the requirements of modern supply systems. Utilising the benefits of polyethylene jointing technologies and excellent chemical resistance, Effast PE100 pressure pipe system can be used across a wide range of applications including:

- Water supply and distribution
- Water treatment
- Cooling water
- Pressurised waste water systems
- Transportation of chemicals

Features and Benefits

PE100 pressure pipe offers all of the benefits commonly associated with plastic systems in a wide range of sizes.

- Sizes available
 - SDR 17 (10 bar) 32mm to 1200mm
 - SDR 11 (16 bar) 20mm to 630mm
- Operating temperature -40°C to +60°C subject to pressure requirement
- Comprehensive system includes full range of pipes and fittings
- Prefabrication service is available
- Fusion weld or mechanical installation
- Excellent impact resistance
- Excellent chemical resistance

Technical data	PE 100
Density, g/cm ³ , ISO 1183	0.960
Yield stress, MPa, DIN EN ISO 527	23
Elongation at yield %, DIN EN ISO 527	9
Elongation at break, %, DIN EN ISO 527	600
Tensile modulus of elasticity, MPa, DIN EN ISO 527	1100
Impact strength, kJ/m ² , DIN EN ISO 179	no break
Notched impact strength, kJ/m ² , DIN EN ISO 2039-1	30
Shore hardness, D, ISO 868	61
Mean coefficient of linear thermal expansion, K ⁻¹ , DIN 53752	1.8-44
Thermal conductivity, W/m-K, DIN 52612	0.38
Dielectric strength, kV/mm, VDE 0303-21	22
Surface resistivity, ohm, DIN IEC 167	1x10 ¹⁴
Fire behaviour, DN 4102	B2
Physiologically safe as per BfR	yes
Chemical resistance according to DIN 8075 Supplement	fulfilled
Temperature range, C°	-40°C to +60°C



PE100 Pressure Systems

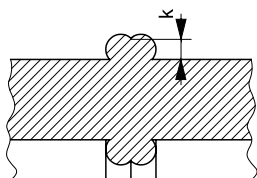
Recommended values for butt welding, PE100 pipes and fittings					
Matching ²		Heat up ³	Changeover	Welding ⁴	
Wall thickness	Heat up time starts	Heat up time	Changeover time	Weld pressure build-up time	Cooling time
mm	mm	s	s	(max. time)	s
up to 4.5	0.5	45	5	5	6
4.5–7	1.0	45–70	5–6	5–6	6–10
7–12	1.5	70–120	6–8	6–8	10–16
12–19	2.0	120–190	8–10	8–11	16–24
19–26	2.5	190–260	10–12	11–14	24–32
26–37	3.0	260–370	12–16	14–19	32–45
37–50	3.5	370–500	16–20	19–25	45–60
50–70	4.0	500–700	20–25	25–35	60–80

¹ For outdoors temperature about 20°C and moderate air movement

² Height of bead on the heated tool at the end of the matching time (matching at $< 0.15 \text{ N/mm}^2$)

³ Heated tool temperature is $210 \pm 10^\circ\text{C}$. heat up time = $10 \times \text{wall thickness}$ (heat soak at $\leq 0.02 \text{ N/mm}^2$)

⁴ Cooling time at welding pressure ($p = 0.15 \pm 0.01 \text{ N/mm}^2$)

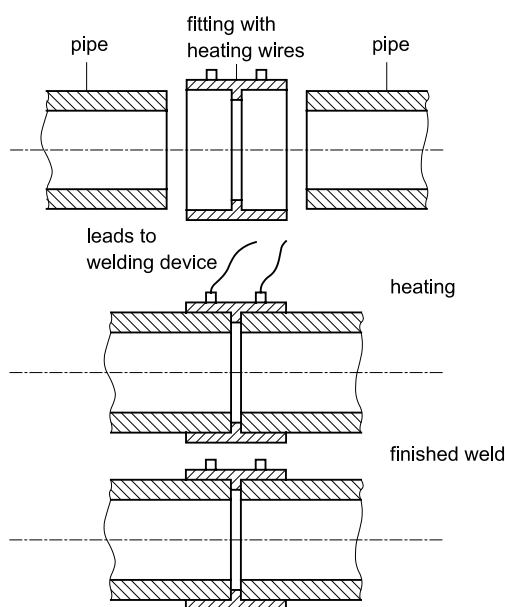


Double bead welded.

If the bead is to be removed, it should be done before the weld is entirely cooled down. Machining the bead off the cold weld runs the risk of causing dents. With brittle materials like PVC and PVDF it can cause chipping.

Electro fusion welding

The surfaces to be welded, i.e. the pipe outer surface and the socket inside surface, are heated to welding temperature and fused by electric current, through the resistance of wires within the socket.



Electro fusion welding

Weld surface preparation

For a good electro fusion weld, clean surfaces are an important factor. The pipe surfaces must be shaved in the weld area. Then the burr on the inner edge must be removed and the outer edge rounded. Effast PE100 electrofusion fittings are supplied in protective bags and should only be removed from the bag at time of use. Do not touch the inside of the electrofusion fitting at any time.

In the weld area, the pipe may be out of the round by no more than 1.5 %. Otherwise clamps for this purpose can be used to force roundness.

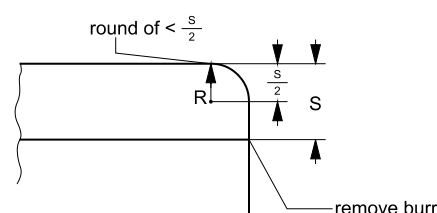
When the fitting goes on to the pipe ends, keep it straight along the axis and avoid forcing. This prevents displacing and damaging the resistance wire.

Welding process

The welding device must match the fitting used. Settings on the device are selected before welding, according to the pipe diameter and nominal pressure. The required welding information is provided in three ways. Dependent on the functionality of the welding machine, programming is possible using -

- Smart System self programming technology
- Barcode
- Manual programming of values

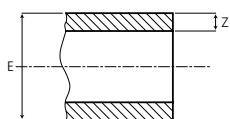
Welding cables connect device and fitting. Fusion is carried out automatically and weld is left at rest until the cooling time has elapsed.



Preparing pipe ends

Polyethylene Pressure Pipe

SDR17/PN10 Pressure Pipe				SDR11/PN16 Pressure Pipe	
Code: HPPEE	øD	Code	Z	Code	Z
	20mm	-		2000.16.20.60	1.90
	25mm	-		2000.16.25.60	2.30
	32mm	2000.10.32.60	1.82	2000.16.32.60	2.90
	40mm	2000.10.40.60	2.27	2000.16.40.60	3.70
	50mm	2000.10.50.60	2.84	2000.16.50.60	4.60
	63mm	2000.10.63.60	3.58	2000.16.63.60	5.80
	75mm	2000.10.75.60	4.26	2000.16.75.60	6.80
	90mm	2000.10.90.60	5.11	2000.16.90.60	8.20
	110mm	2000.10.110.60	6.25	2000.16.110.60	10.00
	125mm	2000.10.125.60	7.10	2000.16.125.60	11.40
	140mm	2000.10.140.60	7.95	2000.16.140.60	12.70
	160mm	2000.10.160.60	9.09	2000.16.160.60	14.60
	180mm	2000.10.180.60	10.23	2000.16.180.60	16.40
	200mm	2000.10.200.60	11.36	2000.16.200.60	18.20
	225mm	2000.10.225.60	12.78	2000.16.225.60	20.50
	250mm	2000.10.250.60	14.20	2000.16.250.60	22.70
	280mm	2000.10.280.60	15.91	2000.16.280.60	25.40
	315mm	2000.10.315.60	17.90	2000.16.315.60	28.60
	355mm	2000.10.355.60	20.17	2000.16.355.60	32.20
	400mm	2000.10.400.60	22.73	2000.16.400.60	36.30
	450mm	2000.10.450.60	25.57	2000.16.450.60	40.90
	500mm	2000.10.500.60	28.41	2000.16.500.60	45.40
	560mm	2000.10.560.60	31.82	2000.16.560.60	50.80
	630mm	2000.10.630.60	35.80	2000.16.630.60	57.20

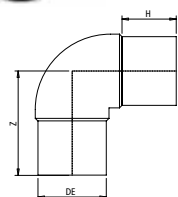


For Sizes above 630mm please enquire

Polyethylene Fittings

Elbow 90° Long Spigot

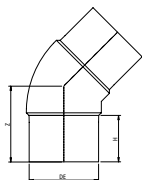
Code: HPPEE



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
25	-	2001.16.25.90	47	68
32	-	2001.16.32.90	50	74
40	-	2001.16.40.90	56	88
50	-	2001.16.50.90	57	90
63	2001.10.63.90	2001.16.63.90	68	112
75	2001.10.75.90	2001.16.75.90	73	126
90	2001.10.90.90	2001.16.90.90	82	148
110	2001.10.110.90	2001.16.110.90	91	163
125	2001.10.125.90	2001.16.125.90	90	175
140	2001.10.140.90	2001.16.140.90	97	188
160	2001.10.160.90	2001.16.160.90	104	206
180	2001.10.180.90	2001.16.180.90	106	210
200	2001.10.200.90	2001.16.200.90	116	250
225	2001.10.225.90	2001.16.225.90	122	268
250	2001.10.250.90	2001.16.250.90	130	290
280	2001.10.280.90	2001.16.280.90	126	310
315	2001.10.315.90	2001.16.315.90	153	333
450	2001.10.450.90	-		
630	2001.10.630.90	-		
800	2001.10.800.90	-		
1000	2001.10.1000.90	-		

Elbow 45° Long Spigot

Code: HPPEE

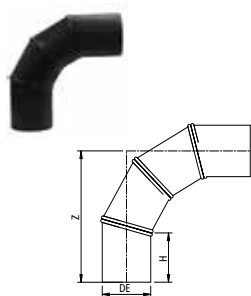


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
32		2001.16.32.45	50	70
40		2001.16.40.45	58	78
50		2001.16.50.45	59	84
63	2001.10.63.45	2001.16.63.45	69	95
75	2001.10.75.45	2001.16.75.45	73	100
90	2001.10.90.45	2001.16.90.45	82	109
110	2001.10.110.45	2001.16.110.45	93	127
125	2001.10.125.45	2001.16.125.45	93	162
140	2001.10.140.45	2001.16.140.45	97	170
160	2001.10.160.45	2001.16.160.45	107	180
180	2001.10.180.45	2001.16.180.45	108	190
200	2001.10.200.45	2001.16.200.45	118	190
225	2001.10.225.45	2001.16.225.45	120	210
250	2001.10.250.45	2001.16.250.45	130	215
280	2001.10.280.45	2001.16.280.45	142	258
315	2001.10.315.45	2001.16.315.45	154	270

Polyethylene Fittings

90° Fabricated Bend

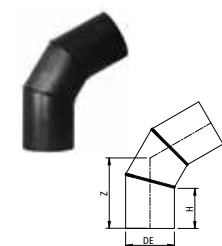
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
355	2001.10.355.90.F	2001.16.355.90.F	300	737
400	2001.10.400.90.F	2001.16.400.90.F	300	794
450	2001.10.450.90.F	2001.16.450.90.F	300	867
500	2001.10.500.90.F	2001.16.500.90.F	300	912
560	2001.10.560.90.F	2001.16.560.90.F	350	1040
630	2001.10.630.90.F	2001.16.630.90.F	350	1123
710	2001.10.710.90.F	2001.16.710.90.F	600	1638
800	2001.10.800.90.F	2001.16.800.90.F	600	1683
900	2001.10.900.90.F	2001.16.900.90.F	600	1733
1000	2001.10.1000.90.F	2001.16.1000.90.F	600	1783

60° Fabricated Bend

Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
355	2001.10.355.60.F	2001.16.355.60.F	300	512
400	2001.10.400.60.F	2001.16.400.60.F	300	530
450	2001.10.450.60.F	2001.16.450.60.F	300	557
500	2001.10.500.60.F	2001.16.500.60.F	300	589
560	2001.10.560.60.F	2001.16.560.60.F	350	679
630	2001.10.630.60.F	2001.16.630.60.F	350	711
710	2001.10.710.60.F	2001.16.710.60.F	600	1094
800	2001.10.800.60.F	2001.16.800.60.F	600	1120
900	2001.10.900.60.F	2001.16.900.60.F	600	1148
1000	2001.10.1000.60.F	2001.16.1000.60.F	600	1177

45° Fabricated Bend

Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
355	2001.10.355.45.F	2001.16.355.45.F	300	476
400	2001.10.400.45.F	2001.16.400.45.F	300	491
450	2001.10.450.45.F	2001.16.450.45.F	300	514
500	2001.10.500.45.F	2001.16.500.45.F	300	539
560	2001.10.560.45.F	2001.16.560.45.F	350	623
630	2001.10.630.45.F	2001.16.630.45.F	350	650
710	2001.10.710.45.F	2001.16.710.45.F	600	1018
800	2001.10.800.45.F	2001.16.800.45.F	600	1036
900	2001.10.900.45.F	2001.16.900.45.F	600	1057
1000	2001.10.1000.45.F	2001.16.1000.45.F	600	1078

Polyethylene Fittings

30° Fabricated Bend

Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
355	2001.10.355.30.F	2001.16.355.30.F	300	400
400	2001.10.400.30.F	2001.16.400.30.F	300	410
450	2001.10.450.30.F	2001.16.450.30.F	300	420
500	2001.10.500.30.F	2001.16.500.30.F	300	430
560	2001.10.560.30.F	2001.16.560.30.F	350	500
630	2001.10.630.30.F	2001.16.630.30.F	350	520
710	2001.10.710.30.F	2001.16.710.30.F	600	790
800	2001.10.800.30.F	2001.16.800.30.F	600	820
900	2001.10.900.30.F	2001.16.900.30.F	600	840
1000	2001.10.1000.30.F	2001.16.1000.30.F	600	870

Tee 90° Long Spigot

Code: HPPEF

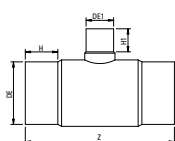


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
25	-	2004.16.25.90	46	140
32	-	2004.16.32.90	50	147
40	-	2004.16.40.90	55	171
50	-	2004.16.50.90	56	180
63	2004.10.63.90	2004.16.63.90	68	229
75	2004.10.75.90	2004.16.75.90	72	256
90	2004.10.90.90	2004.16.90.90	82	303
110	2004.10.110.90	2004.16.110.90	92	336
125	2004.10.125.90	2004.16.125.90	91	356
140	2004.10.140.90	2004.16.140.90	96	390
160	2004.10.160.90	2004.16.160.90	104	423
180	2004.10.180.90	2004.16.180.90	105	450
200	2004.10.200.90	2004.16.200.90	117	502
225	2004.10.225.90	2004.16.225.90	120	538
250	2004.10.250.90	2004.16.250.90	131	595
280	2004.10.280.90	2004.16.280.90	126	653
315	2004.10.315.90	2004.16.315.90	151	700
355	2004.10.355.90	2004.16.355.90	164	790
400	2004.10.400.90	2004.16.400.90	180	890
450	2004.10.450.90	2004.16.450.90	195	984
500	2004.10.500.90	2004.16.500.90	215	1090
560	2004.10.560.90	2004.16.560.90	235	1200
630	2004.10.630.90	2004.16.630.90	253	1330

Polyethylene Fittings

Reduced Tee 90° Long Spigot

Code: HPPEE

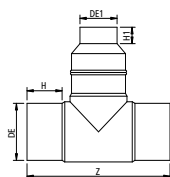


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
90x50	2004.10.90X50.90	2004.16.90x50.90	50	81	57	302
90x63	2004.10.90X63.90	2004.16.90x63.90	63	81	71	302
110x50	2004.10.110x50.90	2004.16.110x50.90	50	90	57	335
110x63	2004.10.110X63.90	2004.16.110x63.90	63	90	70	335
110x90	2004.10.110X90.90	2004.16.110x90.90	90	90	82	335
125x63	2004.10.125x63.90	2004.16.125x63.90	63	90	70	358
125x90	2004.10.125x90.90	2004.16.125x90.90	90	90	82	358
140x63	2004.10.140x63.90	2004.16.140x63.90	63	97	72	390
140x90	2004.10.140x90.90	2004.16.140x90.90	90	95	84	390
160x63	2004.10.160X63.90	2004.16.160x63.90	63	104	72	424
160x90	2004.10.160X90.90	2004.16.160x90.90	90	104	84	424
160x110	2004.10.160X110.90	2004.16.160x110.90	110	104	92	424
160x125	2004.10.160x125.90	2004.16.160x125.90	125	104	91	424
180x63	2004.10.180x90.90	2004.16.180x63.90	63	105	64	450
180x90	2004.10.180x110.90	2004.16.180x90.90	90	105	82	450
180x110	2004.10.180x125.90	2004.16.180x110.90	110	105	92	450
180x125	2004.10.200X63.90	2004.16.180x125.90	125	105	92	448
200x63	-	2004.16.200x63.90	63	116	84	500
200x90	2004.10.200x90.90	2004.16.200x90.90	90	116	84	500
200x110	2004.10.200x110.90	2004.16.200x110.90	110	116	92	500
200x160	2004.10.200x160.90	2004.16.200x160.90	160	116	104	500
200x180	2004.10.200x180.90	2004.16.200x180.90	180	116	106	500
225x90	2004.10.225x90.90	2004.16.225x90.90	90	120	84	538
225x125	2004.10.225x125.90	2004.16.225x125.90	125	120	91	538
225x160	2004.10.225x160.90	2004.16.225x160.90	160	120	105	538
225x180	2004.10.225x180.90	2004.16.225x180.90	180	120	106	540
250x110	2004.10.250x110.90	2004.16.250x110.90	110	130	92	596
250x160	2004.10.250x160.90	2004.16.250x160.90	160	130	106	596
315x110	2004.10.315x110.90	2004.16.315x110.90	110	152	92	703
315x160	2004.10.315x160.90	2004.16.315x160.90	160	152	105	703
315x180	2004.10.315x180.90	2004.16.315x180.90	180	152	106	703
315x200	2004.10.315x200.90	2004.16.315x200.90	200	152	116	703
315x225	2004.10.315x225.90	2004.16.315x225.90	225	152	120	703
355x110	2004.10.355x110.90	2004.16.355x110.90	110	170	90	674
355x160	2004.10.355x160.90	2004.16.355x160.90	160	170	102	674
355x225	2004.10.355x225.90	2004.16.355x225.90	225	170	120	674
400x110	2004.10.400x110.90	2004.16.400x110.90	110	190	90	755
400x160	2004.10.400x160.90	2004.16.400x160.90	160	190	102	755
400x225	2004.10.400x225.90	2004.16.400x225.90	225	190	125	755
500x250	-	2004.16.500x250.90	250	215	132	-
560x250	2004.10.560x250.90	2004.16.560x250.90	250	235	132	960

Polyethylene Fittings

Assembled Reduced Tee 90° Long Spigot

Code: HPPEF

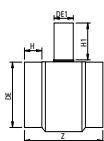


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
50x25	-	2004.16.50x25.90	25	56	44	180
50x32	-	2004.16.50x32.90	32	56	48	180
50x40	-	2004.16.50x40.90	40	56	50	180
63x25	-	2004.16.63x25.90	25	68	44	229
63x32	-	2004.16.63x32.90	32	68	49	229
63x40	-	2004.16.63x40.90	40	68	52	229
63x50	-	2004.16.63x50.90	50	68	57	229
75x32	-	2004.16.75x32.90	32	68	46	256
75x40	-	2004.16.75x40.90	40	72	49	256
75x50	-	2004.16.75x50.90	50	72	57	256
75x63	2004.10.75x63.90	2004.16.75x63.90	63	72	65	256
90x75	2004.10.90x75.90	2004.16.90x75.90	75	82	73	303
110x75	2004.10.110x75.90	2004.16.110x75.90	75	92	73	336
125x75	2004.10.125x75.90	2004.16.125x75.90	75	91	73	356
125x110	2004.10.125x110.90	2004.16.125x110.90	110	91	90	356
140x110	2004.10.140x110.90	2004.16.140x110.90	110	96	91	390
140x125	2004.10.140x125.90	2004.16.140x125.90	125	96	93	390
160x140	2004.10.160x140.90	2004.16.160x140.90	140	104	97	423
180x110	2004.10.180x110.90	2004.16.180x110.90	110	105	86	450
180x140	2004.10.180x140.90	2004.16.180x140.90	140	105	94	450
180x160	2004.10.180x160.90	2004.16.180x160.90	160	105	105	450
200x140	2004.10.200x140.90	2004.16.200x140.90	140	117	95	502
200x180	2004.10.200x180.90	2004.16.200x180.90	180	117	105	502
225x200	-	2004.16.225x200.90	200	120	114	538
250x200	2004.10.250x200.90	2004.16.250x200.90	200	131	116	595
250x225	2004.10.250x225.90	2004.16.250x225.90	225	131	122	595
280x200	2004.10.280x200.90	2004.16.280x200.90	200	126	51	653
280x225	2004.10.280x225.90	2004.16.280x225.90	225	126	57	653
280x250	2004.10.280x250.90	2004.16.280x250.90	250	126	64	653
315x250	2004.10.315x250.90	2004.16.315x250.90	250	151	130	700
315x280	2004.10.315x280.90	2004.16.315x280.90	280	151	72•	700
355x250	2004.10.355x250.90	2004.16.355x250.90	250	164	62•	790
355x280	2004.10.355x280.90	2004.16.355x280.90	280	164	56•	790
355x315	2004.10.355x315.90	2004.16.355x315.90	315	164	78•	790
400x280	2004.10.400x280.90	2004.16.400x280.90	280	180	73•	890
400x315	2004.10.400x315.90	2004.16.400x315.90	315	180	83•	890
400x355	2004.10.400x355.90	2004.16.400x355.90	355	180	92•	890
450x315	2004.10.450x315.90	2004.16.450x315.90	315	195	76•	984
450x355	2004.10.450x355.90	2004.16.450x355.90	355	195	92•	984
450x400	2004.10.450x400.90	2004.16.450x400.90	400	195	99•	984
500x355	2004.10.500x355.90	2004.16.500x355.90	355	215	95•	1090
500x400	2004.10.500x400.90	2004.16.500x400.90	400	215	96•	1090
500x450	2004.10.500x450.90	2004.16.500x450.90	450	215	63•	1090
560x400	2004.10.560x400.90	2004.16.560x400.90	400	235	98•	1200
560x450	2004.10.560x450.90	2004.16.560x450.90	450	235	65•	1200
560x500	2004.10.560x500.90	2004.16.560x500.90	500	235	67•	1200
630x450	2004.10.630x450.90	2004.16.630x450.90	450	253	68•	1330
630x500	2004.10.630x500.90	2004.16.630x500.90	500	253	61•	1330
630x560	2004.10.630x560.90	2004.16.630x560.90	560	253	65•	1330

Polyethylene Fittings

Large Diameter Reduced Tee 90° Short Spigot

Code: HPPEF

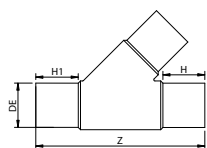


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
560x90	-	2004.16.560x90.90SS	90	120	200	480
560x110	-	2004.16.560x110.90SS	110	120	200	480
560x125	-	2004.16.560x125.90SS	125	120	200	480
560x140	-	2004.16.560x140.90SS	140	120	200	480
560x160	-	2004.16.560x160.90SS	160	120	200	480
560x180	-	2004.16.560x180.90SS	180	120	200	480
560x200	-	2004.16.560x200.90SS	200	110	200	480
630x90	-	2004.16.630x90.90SS	90	130	200	530
630x110	-	2004.16.630x110.90SS	110	130	200	530
630x125	-	2004.16.630x125.90SS	125	130	200	530
630x140	-	2004.16.630x140.90SS	140	130	200	530
630x160	-	2004.16.630x160.90SS	160	130	200	530
630x180	-	2004.16.630x180.90SS	180	130	200	530
630x200	-	2004.16.630x200.90SS	200	130	200	530
630x225	-	2004.16.630x225.90SS	225	110	200	530
710x90	-	2004.16.710x90.90SS	90	130	200	530
710x110	-	2004.16.710x110.90SS	110	130	200	530
710x125	-	2004.16.710x125.90SS	125	130	200	530
710x140	-	2004.16.710x140.90SS	140	130	200	530
710x160	-	2004.16.710x160.90SS	160	130	200	530
710x180	-	2004.16.710x180.90SS	180	130	200	530
710x200	-	2004.16.710x200.90SS	200	130	200	530
710x225	-	2004.16.710x225.90SS	225	110	200	530
710x250	-	2004.16.710x250.90SS	250	100	200	530
800x90	-	2004.16.800x90.90SS	90	120	200	540
800x110	-	2004.16.800x110.90SS	110	120	200	540
800x125	-	2004.16.800x125.90SS	125	120	200	540
800x140	-	2004.16.800x140.90SS	140	120	200	540
800x160	-	2004.16.800x160.90SS	160	120	200	540
800x180	-	2004.16.800x180.90SS	180	120	200	540
800x200	-	2004.16.800x200.90SS	200	120	200	540
800x225	-	2004.16.800x225.90SS	225	110	200	540
800x250	-	2004.16.800x250.90SS	250	110	200	540
900x90	-	2004.16.900x90.90SS	90	130	200	540
900x110	-	2004.16.900x110.90SS	110	130	200	540
900x125	-	2004.16.900x125.90SS	125	130	200	540
900x140	-	2004.16.900x140.90SS	140	130	200	540
900x160	-	2004.16.900x160.90SS	160	130	200	540
900x180	-	2004.16.900x180.90SS	180	130	200	540

Polyethylene Fittings

Large Diameter Reduced Tee 90° Short Spigot

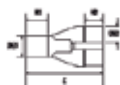
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H1	H	Z
63	2004.10.63.45	2004.16.63.45	68	81	287
75	2004.10.75.45	2004.16.75.45	71	88	310
90	2004.10.90.45	2004.16.90.45	80	90	355
110	2004.10.110.45	2004.16.110.45	88	103	397
125	2004.10.125.45	2004.16.125.45	87	120	448
140	2004.10.140.45	2004.16.140.45	100	110	495
160	2004.10.160.45	2004.16.160.45	104	119	530
200	-	2004.16.200.45		200	830
225	-	2004.16.225.45		220	880
280	-	2004.16.280.45		250	1000
315	-	2004.16.315.45		250	1100
355	-	2004.16.355.45		250	1280
400	-	2004.16.400.45		250	1380

Long Y Spigot

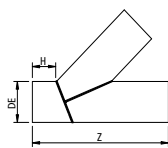
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE2	H1	H2	Z
32X25	-	2006.16.32x25	25	44	41	156
40X32	-	2006.16.40x32	32	50	44	165
50X40	-	2006.16.50x40	40	55	50	186

45° Fabricated Tee

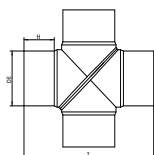
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
180	2004.10.180.45.F	2004.16.180.45.F	200	720
200	2004.10.200.45.F	2004.16.200.45.F	200	740
225	2004.10.225.45.F	2004.16.225.45.F	220	860
250	-	2004.16.250.45.F	250	960
280	2004.10.280.45.F	2004.16.280.45.F	250	1050
315	2004.10.315.45.F	2004.16.315.45.F	250	1150
355	2004.10.355.45.F	2004.16.355.45.F	250	1290
400	2004.10.400.45.F	2004.16.400.45.F	250	1405
450	2004.10.450.45.F	2004.16.450.45.F	270	1520
500	2004.10.500.45.F	2004.16.500.45.F	300	1625

Fabricated Cross

Code: HPPEF

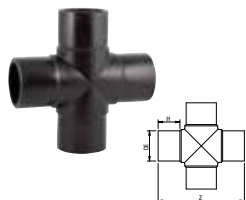


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
180	2005.10.180.F	2005.16.180.F	105	450
200	2005.10.200.F	2005.16.200.F	117	502
225	2005.10.225.F	2005.16.225.F	120	538
250	2005.10.250.F	2005.16.250.F	131	595
280	2005.10.280.F	2005.16.280.F	126	653
315	2005.10.315.F	2005.16.315.F	151	700
355	2005.10.355.F	2005.16.355.F	230	1000
400	2005.10.400.F	2005.16.400.F	230	1000
450	2005.10.450.F	2005.16.450.F	230	1040
500	2005.10.500.F	2005.16.500.F	230	1060
560	2005.10.560.F	2005.16.560.F	350	1260
630	2005.10.630.F	2005.16.630.F	350	1330

Polyethylene Fittings

Long Cross Spigot

Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
-	-	2005.16.63	68	229
-	-	2005.16.75	73	257
-	-	2005.16.90	82	303
110	2005.10.110	2005.16.110	92	338
125	2005.10.125	2005.16.125	89	350
160	2005.10.160	2005.16.160	104	423

Reduced Long Cross Spigot

Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z	Z1
110x63	-	2005.16.110x63	63	92	70	338	298
110x90	-	2005.16.110x90	90	92	83	338	326
125x90	-	2005.16.125x90	90	92	83	357	343
160x90	-	2005.16.160x90	90	104	93	423	403

Reducer Long Spigot

Code: HPPEF

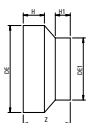


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
25x20	-	2024.16.25x20	20	40	40	86
32x20	-	2024.16.32x20	20	40	38	90
32x25	-	2024.16.32x25	25	43	35	90
40x20	-	2024.16.40x20	20	48	39	101
40x25	-	2024.16.40x25	25	50	42	101
40x32	-	2024.16.40x32	32	49	45	101
50x25	-	2024.16.50x25	25	56	44	115
50x32	-	2024.16.50x32	32	56	48	115
50x40	-	2024.16.50x40	40	54	50	110
63x25	-	2024.16.63x25	25	64	44	133
63x32	-	2024.16.63x32	32	66	49	134
63x40	-	2024.16.63x40	40	65	52	131
63x50	-	2024.16.63x50	50	66	57	136
75x32	-	2024.16.75x32	32	70	46	142
75x40	-	2024.16.75x40	40	72	49	140
75x50	-	2024.16.75x50	50	73	57	145
75x63	2024.10.75x63	2024.16.75x63	63	73	65	151
90x50	2024.10.90x50	2024.16.90x50	50	82	55	158
90x63	2024.10.90x63	2024.16.90x63	63	82	66	163
90x75	2024.10.90x75	2024.16.90x75	75	83	73	167
110x50	2024.10.110x50	2024.16.110x50	50	88	60	176
110x63	2024.10.110x63	2024.16.110x63	63	89	67	178
110x75	2024.10.110x75	2024.16.110x75	75	88	73	182
110x90	2024.10.110x90	2024.16.110x90	90	88	82	186
125x63	2024.10.125x63	2024.16.125x63	63	90	66	191
125x75	2024.10.125x75	2024.16.125x75	75	91	73	191
125x90	2024.10.125x90	2024.16.125x90	90	91	81	189
125x110	2024.10.125x110	2024.16.125x110	110	90	90	188

Polyethylene Fittings

Reducer Long Spigot

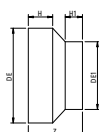
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
140x90	2024.10.140x90	2024.16.140x90	90	95	81	204
140x110	2024.10.140x110	2024.16.140x110	110	95	91	203
140x125	2024.10.140x125	2024.16.140x125	125	96	93	198
160x90	2024.10.160x90	2024.16.160x90	90	106	83	226
160x110	2024.10.160x110	2024.16.160x110	110	106	92	226
160x125	2024.10.160x125	2024.16.160x125	125	105	93	216
160x140	2024.10.160x140	2024.16.160x140	140	106	97	213
180x63	2024.10.180x63	2024.16.180x63	63	107	68	226
180x110	2024.10.180x110	2024.16.180x110	110	105	86	227
180x125	2024.10.180x125	2024.16.180x125	125	110	90	240
180x140	2024.10.180x140	2024.16.180x140	140	106	94	218
180x160	2024.10.180x160	2024.16.180x160	160	105	105	220
200x90	2024.10.200x90	2024.16.200x90	90	116	83	250
200x110	2024.10.200x110	2024.16.200x110	110	116	88	250
200x125	2024.10.200x125	2024.16.200x125	125	116	91	240
200x140	2024.10.200x140	2024.16.200x140	140	111	95	236
200x160	2024.10.200x160	2024.16.200x160	160	111	102	243
200x180	2024.10.200x180	2024.16.200x180	180	116	105	234
225x110	-	2024.16.225x110	110	124	86	260
225x160	2024.10.225x160	2024.16.225x160	160	117	102	260
225x180	2024.10.225x180	2024.16.225x180	180	122	122	275
225x200	2024.10.225x200	2024.16.225x200	200	120	114	258
250x180	2024.10.250x180	2024.16.250x180	180	132	118	292
250x200	2024.10.250x200	2024.16.250x200	200	128	116	274
250x225	2024.10.250x225	2024.16.250x225	225	131	122	273
315x225	2024.10.315x225	2024.16.315x225	225	150	130	330
315x250	2024.10.315x250	2024.16.315x250	250	150	130	320

Reducer Short Spigot

Code: HPPEF

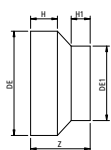


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
250x160	2024.10.250x160SS	2024.16.250x160SS	160	62	50	157
250x180	2024.10.250x180SS	2024.16.250x180SS	180	62	50	150
250x200	2024.10.250x200SS	2024.16.250x200SS	200	60	58	147
250x225	2024.10.250x225SS	2024.16.250x225SS	225	50	68	142
280x200	2024.10.280x200SS	2024.16.280x200SS	200	72	51	160
280x225	2024.10.280x225SS	2024.16.280x225SS	225	72	57	154
280x250	2024.10.280x250SS	2024.16.280x250SS	250	69	64	150
315x225	2024.10.315x225SS	2024.16.315x225SS	225	82	57	184
315x250	2024.10.315x250SS	2024.16.315x250SS	250	81	62	178
315x280	2024.10.315x280SS	2024.16.315x280SS	280	87	77	200
355x225	-	2024.16.355x225SS	225	92	57	208
355x250	2024.10.355x250SS	2024.16.355x250SS	250	87	62	195
355x280	2024.10.355x280SS	2024.16.355x280SS	280	45	56	129
355x315	2024.10.355x315SS	2024.16.355x315SS	315	88	78	188

Polyethylene Fittings

Reducer Short Spigot

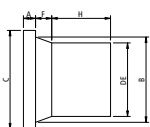
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE1	H	H1	Z
400x280	2024.10.400x280SS	2024.16.400x280SS	280	96	73	226
400x315	2024.10.400x315SS	2024.16.400x315SS	315	97	83	218
400x355	2024.10.400x355SS	2024.16.400x355SS	355	97	92	208
450x250	-	2024.16.450x250SS	250	62	62	220
450x315	2024.10.450x315SS	2024.16.450x315SS	315	65	76	206
450x355	2024.10.450x355SS	2024.16.450x355SS	355	64	92	203
450x400	2024.10.450x400SS	2024.16.450x400SS	400	64	99	188
500x355	2024.10.500x355SS	2024.16.500x355SS	355	63	81	211
500x400	2024.10.500x400SS	2024.16.500x400SS	400	62	96	210
500x450	2024.10.500x450SS	2024.16.500x450SS	450	63	63	166
560x400	2024.10.560x400SS	2024.16.560x400SS	400	60	98	240
560x450	2024.10.560x450SS	2024.16.560x450SS	450	60	65	187
560x500	2024.10.560x500SS	2024.16.560x500SS	500	57	67	165
630x450	2024.10.630x450SS	2024.16.630x450SS	450	60	68	234
630x500	2024.10.630x500SS	2024.16.630x500SS	500	62	61	192
630x560	2024.10.630x560SS	2024.16.630x560SS	560	64	65	188
710x560	2024.10.710x560SS	2024.16.710x560SS	560	60	34	155
710x630	2024.10.710x630SS	2024.16.710x630SS	630	66	62	160
800x710	2024.10.800x710SS	-				
900x500	2024.10.900x500SS	-				
1000x900	2024.10.1000x900SS	-				
1200x1000	2024.10.1200x1000SS	-				

Stub Flange Long Spigot

Code: HPPEF

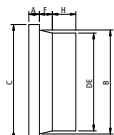


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	F	B	C
25	-	2012.16.25	46	13	33	58
32	-	2012.16.32	56	15	40	68
40	-	2012.16.40	56	12	50	78
50	-	2012.16.50	52	23	61	88
63	2012.10.63	2012.16.63	63	20	75	102
75	2012.10.75	2012.16.75	73	22	89	122
90	2012.10.90	2012.16.90	82	24	105	138
110	2012.10.110	2012.16.110	90	30	125	158
125	2012.10.125	2012.16.125	102	22	134	158
140	2012.10.140	2012.16.140	102	30	155	187
160	2012.10.160	2012.16.160	106	33	175	212
180	2012.10.180	2012.16.180	108	37	180	212
200	2012.10.200	2012.16.200	119	46	232	268
225	2012.10.225	2012.16.225	115	39	235	268
250	2012.10.250	2012.16.250	122	46	285	320
280	2012.10.280	2012.16.280	140	30	291	320
315	2012.10.315	2012.16.315	157	32	335	370
355	2012.10.355	2012.16.355	167	36	373	430
400	2012.10.400	2012.16.400	182	49	427	480

Polyethylene Fittings

Stub Flange Short Spigot

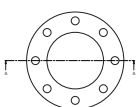
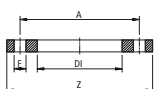
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	F	B	C
63	2012.10.63SS	2012.16.63SS	23	20	75	102
75	2012.10.75SS	2012.16.75SS	25	22	89	122
90	2012.10.90SS	2012.16.90SS	25	24	105	138
110	2012.10.110SS	2012.16.110SS	25	30	125	158
125	2012.10.125SS	2012.16.125SS	30	22	132	158
140	2012.10.140SS	2012.16.140SS	30	30	155	187
160	2012.10.160SS	2012.16.160SS	25	33	175	212
180	2012.10.180SS	2012.16.180SS	30	37	184	212
200	2012.10.200SS	2012.16.200SS	52	44	232	269
225	2012.10.225SS	2012.16.225SS	32	43	235	268
250	2012.10.250SS	2012.16.250SS	38	46	285	320
280	2012.10.280SS	2012.16.280SS	64	30	291	320
315	2012.10.315SS	2012.16.315SS	68	41	335	370
355	2012.10.355SS	2012.16.355SS	52	41	373	430
400	2012.10.400SS	2012.16.400SS	46	43	427	475
450	2012.10.450SS	2012.16.450SS	63	35	514	585
500	2012.10.500SS	2012.16.500SS	30	35	530	594
560	2012.10.560SS	2012.16.560SS	54	42	615	685
630	2012.10.630SS	2012.16.630SS	30	35	642	695
710	2012.10.710SS	2012.16.710SS	35	40	737	800
800	2012.10.800SS	2012.16.800SS	30	40	840	904
900	2012.10.900SS	2012.16.900SS	28	54	944	1000
1000	2012.10.1000SS	2012.16.1000SS	40	40	1045	1105
1200	2012.10.1200SS	2012.16.1200SS	35	50	1250	1330

Zinc Coated Steel Backing Ring

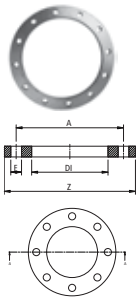
Code: HPPEF



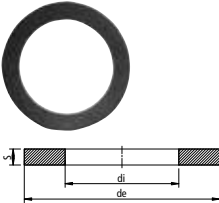
Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DN	A	Z	DI	F
90	-	2016.16.90	80	160	200	108	18
110	-	2016.16.110	100	180	220	128	18
125	-	2016.16.125	100	180	220	135	18
140	-	2016.16.140	125	210	250	158	18
160	-	2016.16.160	150	240	285	178	22
180	-	2016.16.180	150	240	285	188	22
200	2016.10.200	2016.16.200	200	295	340	235	22
225	2016.10.225	2016.16.225	200	295	340	238	22
250	2016.10.250	2016.16.250	250	355	405	288	26
280	2016.10.280	2016.16.280	250	355	405	294	26
315	2016.10.315	2016.16.315	300	410	460	338	26
355	2016.10.355	2016.16.355	350	470	520	376	26
400	2016.10.400	2016.16.400	400	525	580	430	30

Polyethylene Fittings

Zinc Coated Steel Backing Ring

Code: HPPEF	Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DN	A	Z	DI	F
	450	2016.10.450	2016.16.450	500	650	715	517	33
	500	2016.10.500	2016.16.500	500	650	715	533	33
	560	2016.10.560	2016.16.560	600	770	840	618	36
	630	2016.10.630	2016.16.630	600	770	840	645	36
	710	2016.10.710	2016.16.710	710	840	910	740	36
	800	2016.10.800	2016.16.800	800	950	1025	843	39
	900	2016.10.900	2016.16.900	900	1050	1125	947	39
	1000	2016.10.1000	2016.16.1000	1000	1170	1255	1050	42
	1200	2016.10.1200	2016.16.1200	1100	1270	1355	1125	42

EPDM Gasket (for water use only)

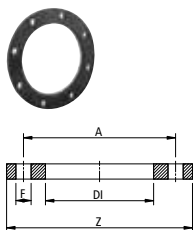
Code: HPPEF	Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DN	S	DE	DI
	25	2014.10.25	2014.16.25	20	3	-	-
	32	2014.10.32	2014.16.32	25	3	71	30
	40	2014.10.40	2014.16.40	32	3	82	37
	50	2014.10.50	2014.16.50	40	3	92	46
	63	2014.10.63	2014.16.63	50	3	107	57
	75	2014.10.75	2014.16.75	65	3	127	68
	90	2014.10.90	2014.16.90	80	3	142	81
	110	2014.10.110	2014.16.110	100	3	162	99
	125	2014.10.125	2014.16.125	100	3	162	112
	140	2014.10.140	2014.16.140	125	3	192	125
	160	2014.10.160	2014.16.160	150	3	218	143
	180	2014.10.180	2014.16.180	150	3	218	161
	200	2014.10.200	2014.16.200	200	3	273	178
	225	2014.10.225	2014.16.225	200	3	273	200
	250	2014.10.250	2014.16.250	250	3	328	222
	280	2014.10.280	2014.16.280	250	3	328	249
	315	2014.10.315	2014.16.315	300	3	378	280
	355	2014.10.355	2014.16.355	350	3	438	315
	400	2014.10.400	2014.16.400	400	3	489	355
	450	2014.10.450	2014.16.450	500	3	594	399
	500	2014.10.500	2014.16.500	500	3	594	443
	560	2014.10.560	2014.16.560	600	3	695	496
	630	2014.10.630	2014.16.630	600	3	695	557
	710	2014.10.710	2014.16.710	700	3	810	628
	800	2014.10.800	2014.16.800	800	3	917	707
	900	2014.10.900	2014.16.900	900	3	1017	795
	1000	2014.10.1000	2014.16.1000	1000	3	1124	883
	1200	2014.10.1200	2014.16.1200	1200	3	1341	1060

PE100

Polyethylene Fittings

PP Coated Steel Flange

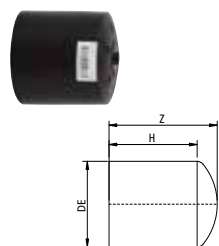
Code: HPPEF



Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DN	A	Z	DI	F
25	2015.10.25	-	20	75	106	34	14
32	2015.10.32	2015.16.32	25	85	116	42	14
40	2015.10.40	2015.16.40	32	100	141	51	18
50	2015.10.50	2015.16.50	40	110	151	62	18
63	2015.10.63	2015.16.63	50	125	166	78	18
75	2015.10.75	2015.16.75	65	145	186	92	18
90	2015.10.90	2015.16.90	80	160	201	108	18
110	2015.10.110	2015.16.110	100	180	221	128	18
125	2015.10.125	2015.16.125	100	180	221	135	18
140	2015.10.140	2015.16.140	125	210	251	158	18
160	2015.10.160	2015.16.160	150	240	286	178	22
180	2015.10.180	2015.16.180	150	240	286	188	22
200	2015.10.200	2015.16.200	200	295	341	235	22
225	2015.10.225	2015.16.225	200	295	341	238	22
250	2015.10.250	2015.16.250	250	350	406	288	22
280	2015.10.280	2015.16.280	250	350	406	294	22
315	2015.10.315	2015.16.315	300	400	460	338	22
355	-	2015.16.355	350	460	520	376	22
400	-	2015.16.400	400	515	580	430	26

End Cap Long Spigot

Code: HPPEF

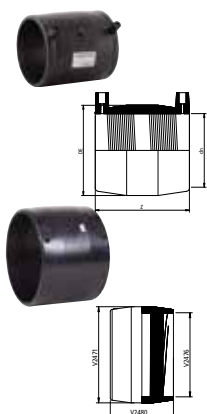


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	H	Z
20	-	2030.16.20	48	54
25	-	2030.16.25	48	54
32	-	2030.16.32	52	58
40	-	2030.16.40	60	65
50	-	2030.16.50	59	75
63	2030.10.63	2030.16.63	71	82
75	2030.10.75	2030.16.75	81	89
90	2030.10.90	2030.16.90	82	93
110	2030.10.110	2030.16.110	96	105
125	2030.10.125	2030.16.125	89	98
140	2030.10.140	2030.16.140	104	112
160	2030.10.160	2030.16.160	122	130
180	2030.10.180	2030.16.180	103	125
200	2030.10.200	2030.16.200	132	152
225	2030.10.225	2030.16.225	120	142
250	2030.10.250	2030.16.250	124	155
280	2030.10.280	2030.16.280	136	154
315	2030.10.315	2030.16.315	160	195

Electrofusion Fittings

Electrofusion Coupler

Code: HPPEL

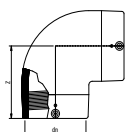


Nominal Size	SDR17/PN10 Code	SDR11/PN16 Code	DE	Z
20	-	2010.16.20	33	70
25	-	2010.16.25	38	70
32	-	2010.16.32	44	88
40	-	2010.16.40	54	94
50	-	2010.16.50	62	99
63	-	2010.16.63	81	116
75	-	2010.16.75	95	120
90	2010.10.90	2010.16.90	104	132
110	2010.10.110	2010.16.110	128	152
125	2010.10.125	2010.16.125	142	158
140	2010.10.140	2010.16.140	160	166
160	2010.10.160	2010.16.160	182	176
180	2010.10.180	2010.16.180	206	181
200	2010.10.200	2010.16.200	229	202
225	2010.10.225	2010.16.225	254	202
250	2010.10.250	2010.16.250	287	218
280	2010.10.280	2010.16.280	320	230
315	2010.10.315	2010.16.315	355	250
355	2010.10.355	2010.16.355	405	289
400	2010.10.400	2010.16.400	458	330
450	2010.10.450	2010.16.450	509	383
500	2010.10.500	2010.16.500	562	403
560	2010.10.560	2010.16.560	624	455
630	2010.10.630	2010.16.630	712	505
710	2010.10.710	2010.16.710	811	500
800	2010.10.800	2010.16.800	915	500
900	2010.10.900	-	1013	520
1000	2010.10.1000	-	1135	535
1200	2010.10.1200	-	1350	570

Electrofusion Fittings

Electrofusion 90° Elbow

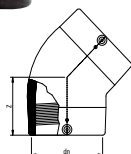
Code: HPPEL



Nominal Size	SDR11/PN16 Code	Z
20	2051.16.20.90	50
25	2051.16.25.90	52
32	2051.16.32.90	57
40	2051.16.40.90	65
50	2051.16.50.90	77
63	2051.16.63.90	94
75	2051.16.75.90	97.4
90	2051.16.90.90	122
110	2051.16.110.90	141
125	2051.16.125.90	149
140	2051.16.140.90	164
160	2051.16.160.90	180
180	2051.16.180.90	213
200	2051.16.200.90	233
225	2051.16.225.90	253
250	2051.16.250.90	315
315	2051.16.315.90	383

Electrofusion 45° Elbow

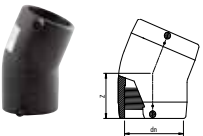
Code: HPPEL



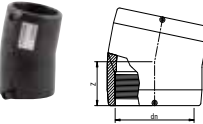
Nominal Size	SDR11/PN16 Code	Z
20*	2002.16.20.45	52
25	2002.16.25.45	52
32	2002.16.32.45	42
40	2002.16.40.45	53
50	2002.16.50.45	60
63	2002.16.63.45	68
75	2002.16.75.45	77
90	2002.16.90.45	95
110	2002.16.110.45	112
125	2002.16.125.45	120
140	2002.16.140.45	123
160	2002.16.160.45	136
180	2002.16.180.45	160
200	2002.16.200.45	180
225	2002.16.225.45	203
250	2002.16.250.45	233
315	2002.16.315.45	275

Electrofusion Fittings

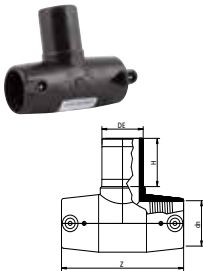
Electrofusion 22.5° Elbow

Code: HPPEL	Nominal Size	SDR11/PN16 Code	Z
	90	2002.16.90.225	95
	125	2002.16.125.225	110
	180	2002.16.180.225	142
	250	2002.16.250.225	159
	315	2002.16.315.225	185

Electrofusion 11.25° Elbow

Code: HPPEL	Nominal Size	SDR11/PN16 Code	Z
	90	2002.16.90.1125	85
	125	2002.16.125.1125	110
	180	2002.16.180.1125	140
	250	2002.16.250.1125	140
	315	2002.16.315.1125	170

Electrofusion 90° Tee

Code: HPPEL	Nominal Size	SDR11/PN16 Code	DE	H	Z
	20	2052.16.20.90	20	44	90
	25	2052.16.25.90	25	46	100
	32	2052.16.32.90	32	50	116
	40	2052.16.40.90	40	56	130
	50	2052.16.50.90	50	56	150
	63	2052.16.63.90	63	70	175
	75	2052.16.75.90	75	69	188
	90	2052.16.90.90	90	82	209
	110	2052.16.110.90	110	90	250
	125	2052.16.125.90	125	90	265
	140	2052.16.140.90	140	90	290
	160	2052.16.160.90	160	100	318
	180	2052.16.180.90	180	103	336
	200	2052.16.200.90	200	114	395
	225	2052.16.225.90	225	113	393
	250	2052.16.250.90	250	130	470
	315	2052.16.315.90	315	150	558

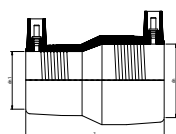
Electrofusion 90° Reducing Tee

Code: HPPEL	Nominal Size	SDR11/PN16 Code	DE	H	Z
	140x110	2052.16.140X110.90	110	90	290
	160x110	2052.16.160X110.90	110	90	318
	180x90	2052.16.180X90.90	90	80	335
	180x125	2052.16.180X125.90	125	87	335
	200x90	2052.16.200X90.90	90	82	395
	200x125	2052.16.200X125.90	125	90	395
	225x110	2052.16.225X110.90	110	90	393
	225x160	2052.16.225X160.90	160	100	393
	250x125	2052.16.250X125.90	125	90	470
	250x180	2052.16.250X180.90	180	105	470
	315x125	2052.16.315X125.90	125	92	558
	315x180	2052.16.315X180.90	180	105	558

Electrofusion Fittings

Electrofusion Reducer

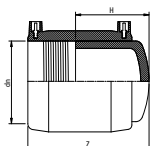
Code: HPPEL



Nominal Size	SDR11/PN16 Code	DN1	DN2	Z
25x20	2053.16.25x20	20	23	83
32x20	2053.16.32x20	20	32	84
32x25	2053.16.32x25	25	32	84
40x20	2053.16.40x20	20	40	120
40x25	2053.16.40x25	25	40	108
40x32	2053.16.40x32	32	40	108
50x25	2053.16.50x25	25	50	135
50x32	2053.16.50x32	32	50	120
50x40	2053.16.50x40	40	50	113
63x25	2053.16.63x25	25	63	146
63x32	2053.16.63x32	32	63	146
63x40	2053.16.63x40	40	63	144
63x50	2053.16.63x50	50	63	128
75x50	2053.16.75x50	50	75	150
75x63	2053.16.75x63	63	75	143
90x50	2053.16.90x50	50	90	179
90x63	2053.16.90x63	75	90	163
110x63	2053.16.110x63	63	110	210
110x90	2053.16.110x90	90	110	178
125x63	2053.16.125x63	63	125	223
125x90	2053.16.125x90	90	125	195
125x110	2053.16.125x110	110	125	160
160x90	2053.16.160x90	90	160	253
160x110	2053.16.160x110	110	160	245
160x125	2053.16.160x125	125	160	236
180x125	2053.16.180x125	125	180	240
200x160	2053.16.200x160	160	200	270
200x180	2053.16.200x180	180	200	243
225x160	2053.16.225x160	160	225	309
315x160	2053.16.315x160	160	315	457
315x200	2053.16.315x200	200	315	408

Electrofusion Cap

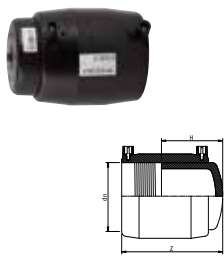
Code: HPPEL



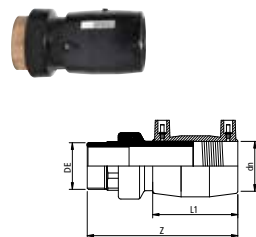
Nominal Size	SDR11/PN16 Code	H	Z
20	2031.16.20	53	88
25	2031.16.25	54	89
32	2031.16.32	58	102
40	2031.16.40	65	112
50	2031.16.50	75	124
63	2031.16.63	82	140
75	2031.16.75	89	149
90	2031.16.90	93	157
110	2031.16.110	105	180
125	2031.16.125	98	176

Electrofusion Fittings

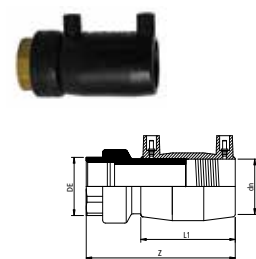
Electrofusion Cap

Code: HPPEL	Nominal Size	SDR11/PN16 Code	H	Z
	140	2031.16.140	112	194
	160	2031.16.160	130	224
	180	2031.16.180	125	220
	200	2031.16.200	152	261
	225	2031.16.225	142	254
	250	2031.16.250	155	273
	280	2031.16.280	156	281
	315	2031.16.315	195	327

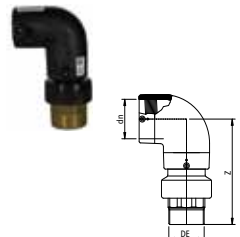
Electrofusion Transition Coupler PE/Brass Threaded Male

Code: HPPEL	Nominal Size	SDR11/PN16 Code	DE"	L1	Z
	20x1/2"	2057.16.20x05	1/2	70	124
	25x3/4"	2057.16.25x075	3/4	70	127
	32x1"	2057.16.32x1	1	88	151
	40x1 1/4"	2057.16.40x125	1 1/4	94	169
	50x1 1/2"	2057.16.50x15	1 1/2	99	175
	63x2"	2057.16.63x2	2	116	201
	75x2 1/2"	2057.16.75x25	2 1/2	120	223
	90x3"	2057.16.90x3	3	128	241
	110x4"	2057.16.110x4	4	150	277

Electrofusion Transition Coupler PE/Brass Threaded Female

Code: HPPEL	Nominal Size	SDR11/PN16 Code	DE"	L1	Z
	20x1/2"	2058.16.20x05	1/2	70	111
	25x3/4"	2058.16.25x075	3/4	70	116
	32x1"	2058.16.32x1	1	88	134
	40x1 1/4"	2058.16.40x125	1 1/4	94	147
	50x1 1/2"	2058.16.50x15	1 1/2	99	153
	63x2"	2058.16.63x2	2	116	179
	75x2 1/2"	2058.16.75x25	2 1/2	120	199
	90x3"	2058.16.90x3	3	128	213
	110x4"	2058.16.110x4	4	150	240

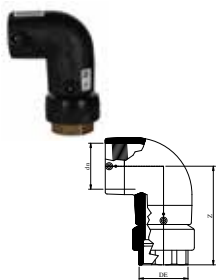
Electrofusion Elbow 90° PE/Brass Threaded Male

Code: HPPEL	Nominal Size	SDR11/PN16 Code	DE"	Z
	20x1/2"	2003.16.20.90	1/2	103
	25x3/4"	2003.16.25.90	3/4	105
	32x1"	2003.16.32.90	1	122
	40x1 1/4"	2003.16.40.90	1 1/4	138
	50x1 1/2"	2003.16.50.90	1 1/2	153
	63x2"	2003.16.63.90	2	178
	75x2 1/2"	2003.16.75.90	2 1/2	194
	90x3"	2003.16.90.90	3	227
	110x4"	2003.16.110.90	4	264

Electrofusion Fittings

Electrofusion Elbow 90° PE/Brass Threaded Female

Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE"	Z
20x1/2"	2003.16.20.90F	1/2	90
25x3/4"	2003.16.25.90F	3/4	95
32x1"	2003.16.32.90F	1	105
40x1 1/4"	2003.16.40.90F	1 1/4	115
50x1 1/2"	2003.16.50.90F	1 1/2	132
63x2"	2003.16.63.90F	2	156
75x2 1/2"	2003.16.75.90F	2 1/2	170
90x3"	2003.16.90.90F	3	199
110x4"	2003.16.110.90F	4	228

Electrofusion Elbow 45° PE/Brass Threaded Male

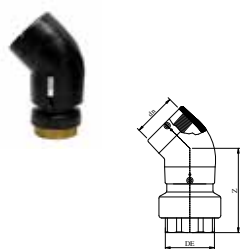
Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE"	Z
20x1/2"	2003.16.20.45	1/2	105
25x3/4"	2003.16.25.45	3/4	108
32x1"	2003.16.32.45	1	113
40x1 1/4"	2003.16.40.45	1 1/4	139
50x1 1/2"	2003.16.50.45	1 1/2	149
63x2"	2003.16.63.45	2	175
75x2 1/2"	2003.16.75.45	2 1/2	204
90x3"	2003.16.90.45	3	236
110x4"	2003.16.110.45	4	278

Electrofusion Elbow 45° PE/Brass Threaded Female

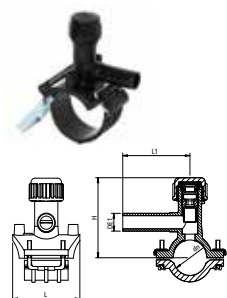
Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE"	Z
20x1/2"	2003.16.20.45F	1/2	92
25x3/4"	2003.16.25.45F	3/4	95
32x1"	2003.16.32.45F	1	90
40x1 1/4"	2003.16.40.45F	1 1/4	103
50x1 1/2"	2003.16.50.45F	1 1/2	115
63x2"	2003.16.63.45F	2	130
75x2 1/2"	2003.16.75.45F	2 1/2	150
90x3"	2003.16.90.45F	3	172
110x4"	2003.16.110.45F	4	199

Tapping Tee

Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE1	ø Hole	H	L1	L
40x20	2055.16.40x20	20	18	110	100	100
40x25	2055.16.40x25	25	18	110	100	100
40x32	2055.16.40x32	32	18	110	100	100
50x20	2055.16.50x20	20	18	115	100	100
50x25	2055.16.50x25	25	18	115	100	100
50x32	2055.16.50x32	32	18	115	100	100
63x20	2055.16.63x20	20	18	121.5	100	100
63x25	2055.16.63x25	25	18	121.5	100	100
63x32	2055.16.63x32	32	18	121.5	100	100
63x40 •	2055.16.63x40	40	24	154	100	120

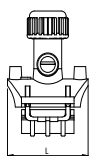
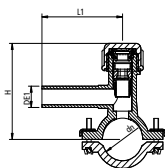
• Short Spigot

Sales and enquiries please contact: 01622 795 225

Electrofusion Fittings

Tapping Tee

Code: HPPEL

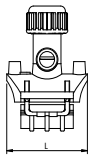
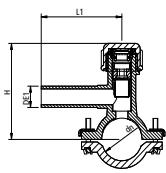


Nominal Size	SDR11/PN16 Code	DE1	ø Hole	H	L1	L
63x50	2055.16.63x50	50	18	170.5	100	100
63x63	2055.16.63x63	63	18	170.5	100	100
75x20	2055.16.75x20	20	18	127.5	100	100
75x25	2055.16.75x25	25	18	127.5	100	100
75x32	2055.16.75x32	32	18	127.5	100	100
75x40 •	2055.16.75x40	40	24	161.5	105	116
75x50	2055.16.75x50	50	18	207.5	140	120
75x63	2055.16.75x63	63	18	212.5	180	120
90x20	2055.16.90x20	20	18	142	100	100
90x25	2055.16.90x25	25	18	142	100	100
90x32	2055.16.90x32	32	18	142	100	100
90x40 •	2055.16.90x40	40	24	169	105	116
90x50 •	2055.16.90x50	50	44	254	136	116
90x63 •	2055.16.90x63	63	44	254	136	116
110x20	2055.16.110x20	20	18	152	100	100
110x25	2055.16.110x25	25	18	152	100	100
110x32	2055.16.110x32	32	18	152	100	100
110x40 •	2055.16.110x40	40	24	179	105	116
110x50 •	2055.16.110x50	50	44	264	136	116
110x63 •	2055.16.110x63	63	44	264	136	116
125x20	2055.16.125x20	20	18	159.5	100	100
125x25	2055.16.125x25	25	18	159.5	100	100
125x32	2055.16.125x32	32	18	159.5	100	100
125x40 •	2055.16.125x40	40	24	186.5	105	116
125x50 •	2055.16.125x50	50	44	271.5	136	116
125x63 •	2055.16.125x63	63	44	271.5	136	116
140x20 •	2055.16.140x20	20	24	194	105	116
140x25 •	2055.16.140x25	25	24	194	105	116
140x32 •	2055.16.140x32	32	24	194	105	116
140x40 •	2055.16.140x40	40	24	194	105	116
140x50 •	2055.16.140x50	50	44	279	136	116
140x63 •	2055.16.140x63	63	44	279	136	116
160x20	2055.16.160x20	20	18	187	100	100
160x25	2055.16.160x25	25	18	187	100	100
160x32	2055.16.160x32	32	18	187	100	100
160x40 •	2055.16.160x40	40	24	204	105	116
160x50 •	2055.16.160x50	50	44	289	136	116
160x63 •	2055.16.160x63	63	44	289	136	116
180x20	2055.16x180x20	20	18	197	100	100
180x25	2055.16.180x25	25	18	197	100	100
180x32	2055.16.180x32	32	18	197	100	100
180x40	2055.16.180x40	40	24	214	105	116
180x50 •	2055.16.180x50	50	44	299	136	116

Electrofusion Fittings

Tapping Tee

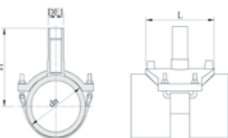
Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE1	ø Hole	H	L1	L
180x63•	2055.16.180x63	63	44	299	136	116
200x20•	2055.16.200x20	20	24	224	105	116
200x25•	2055.16.200x25	25	24	224	105	116
200x32•	2055.16.200x32	32	24	224	105	116
200x40•	2055.16.200x40	40	44	224	136	150
200x50•	2055.16.200x50	50	44	309	136	150
200x63•	2055.16.200x63	63	44	309	136	150
225x20•	2055.16.225x20	20	24	244	105	150
225x25•	2055.16.225x25	25	24	244	105	150
225x32•	2055.16.225x32	32	24	244	105	150
225x40•	2055.16.225x40	40	44	244	105	150
225x50•	2055.16.225x50	50	44	321.5	136	150
225x63•	2055.16.225x63	63	44	321.5	136	150
250x20•	2055.16.250x20	20	24	256.5	105	150
250x25•	2055.16.250x25	25	24	256.5	105	150
250x32•	2055.16.250x32	32	24	256.5	105	150
250x40•	2055.16.250x40	40	44	256.5	105	150
250x50•	2055.16.250x50	50	44	334	136	150
250x63•	2055.16.250x63	63	44	334	136	150
280x20•	2055.16.280x20	20	24	271.5	105	150
280x25•	2055.16.280x25	25	24	271.5	105	150
280x32•	2055.16.280x32	32	24	271.5	105	150
280x40•	2055.16.280x40	40	44	271.5	105	150
280x50•	2055.16.280x50	50	44	349	136	150
280x63•	2055.16.280x63	63	44	349	136	150
315x20•	2055.16.315x20	20	24	289	105	150
315x25•	2055.16.315x25	25	24	289	105	150
315x32•	2055.16.315x32	32	24	289	105	150
315x40•	2055.16.315x40	40	44	289	105	150
315x50•	2055.16.315x50	50	44	366.5	135	150
315x63•	2055.16.315x63	63	44	366.5	135	150

Branch Saddle

Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE1	H	L
40x20	2054.16.40x20	20	103	100
40x25	2054.16.40x25	25	103	100
40x32	2054.16.40x32	32	103	100
40x40	2054.16.40x40	40	103	100
50x20	2054.16.50x20	20	108	100
50x25	2054.16.50x25	25	108	100
50x32	2054.16.50x32	32	108	100
50x40	2054.16.50x40	40	108	100
63x20	2054.16.63x20	20	114.5	100
63x25	2054.16.63x25	25	114.5	100

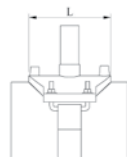
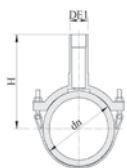
• Short Spigot

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Electrofusion Fittings

Branch Saddle

Code: HPPEL

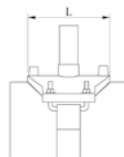
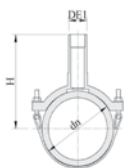


Nominal Size	SDR11/PN16 Code	DE1	H	L
63x32	2054.16.63x32	32	114.5	100
63x40	2054.16.63x40	40	114.5	100
63x50	2054.16.63x50	50	141.5	100
63x63	2054.16.63x63	63	141.5	100
75x20	2054.16.75x20	20	120.5	100
75x25	2054.16.75x25	25	120.5	100
75x32	2054.16.75x32	32	120.5	100
75x40	2054.16.75x40	40	120.5	100
75x50•	2054.16.75x50	50	130	141
75x63•	2054.16.75x63	63	130	141
90x20•	2054.16.90x20	20	137.5	141
90x25•	2054.16.90x25	25	137.5	141
90x32•	2054.16.90x32	32	137.5	141
90x40•	2054.16.90x40	40	137.5	141
90x50•	2054.16.90x50	50	137.5	141
90x63•	2054.16.90x63	63	147.5	141
110x20•	2054.16.110x20	20	147.5	141
110x25•	2054.16.110x25	25	147.5	141
110x32•	2054.16.110x32	32	147.5	141
110x40•	2054.16.110x40	40	147.5	141
110x50•	2054.16.110x50	50	147.5	141
110x63•	2054.16.110x63	63	157.5	141
125x20•	2054.16.125x20	20	155	141
125x25•	2054.16.125x25	25	155	141
125x32•	2054.16.125x32	32	155	141
125x40•	2054.16.125x40	40	155	141
125x50•	2054.16.125x50	50	155	141
125x63•	2054.16.125x63	63	165	141
140x20•	2054.16.140x20	20	162.5	141
140x25•	2054.16.140x25	25	162.5	141
140x32•	2054.16.140x32	32	162.5	141
140x40•	2054.16.140x40	40	162.5	141
140x50•	2054.16.140x50	50	162.5	141
140x63•	2054.16.140x63	63	172.5	141
160x20•	2054.16.160x20	20	172.5	141
160x25•	2054.16.160x25	25	172.5	141
160x32•	2054.16.160x32	32	172.5	141
160x40•	2054.16.160x40	40	172.5	141
160x50•	2054.16.160x50	50	172.5	141
160x63•	2054.16.160x63	63	182.5	141
180x20•	2054.16.180x20	20	182.5	141
180x25•	2054.16.180x25	25	182.5	141
180x32•	2054.16.180x32	32	182.5	141
180x40•	2054.16.180x40	40	182.5	141

Electrofusion Fittings

Branch Saddle

Code: HPPEL



Nominal Size	SDR11/PN16 Code	DE1	H	L
180x50 •	2054.16.180x50	50	182.5	141
180x63 •	2054.16.180x63	63	192.5	141
200x20 •	2054.16.200x20	20	192.5	141
200x25 •	2054.16.200x25	25	192.5	141
200x32 •	2054.16.200x32	32	192.5	141
200x40 •	2054.16.200x40	40	192.5	141
200x50 •	2054.16.200x50	50	192.5	141
200x63 •	2054.16.200x63	63	202.5	141
225x20 •	2054.16.225x20	20	205	141
225x25 •	2054.16.225x25	25	205	141
225x32 •	2054.16.225x32	32	205	141
225x40 •	2054.16.225x40	40	205	141
225x50 •	2054.16.225x50	50	205	141
225x63 •	2054.16.225x63	63	215	141
250x20 •	2054.16.250x20	20	217.5	141
250x25 •	2054.16.250x25	25	217.5	141
250x32 •	2054.16.250x32	32	217.5	141
250x40 •	2054.16.250x40	40	217.5	141
250x50 •	2054.16.250x50	50	217.5	141
250x63 •	2054.16.250x63	63	227.5	141
280x20 •	2054.16.280x20	20	232.5	141
280x25 •	2054.16.280x25	25	232.5	141
280x32 •	2054.16.280x32	32	232.5	141
280x40 •	2054.16.280x40	40	232.5	141
280x50 •	2054.16.280x50	50	232.5	141
280x63 •	2054.16.280x63	63	242.5	141
315x20 •	2054.16.315x20	20	250	141
315x25 •	2054.16.315x25	25	250	141
315x32 •	2054.16.315x32	32	250	141
315x40 •	2054.16.315x40	40	250	141
315x50 •	2054.16.315x50	50	250	141
315x63 •	2054.16.315x63	63	260	141

Accessories

PE 100 Welding Machines

Code: HPPEL

Nominal Size

Code



IPLAST30

The IPlast electrofusion welding machines ensure reliability and security in accordance with welding standards. Three different machines, which between them, can weld from 20mm up to 1200mm fittings. All machines are manufactured to be compact and portable with features including scanners for bar code reading, large graphic displays, USB port for weld records, IP54 protection and continuous use.

2060.IPLAST.30

2060.IPLAST.60

2060.IPLAST.105



IPLAST60/105

Pipe Cutter

Code: HDPEF

Nominal Size

Code



R3 - 6mm - 63mm

9500.663T

R4 - 50mm - 140mm

9500.50140T

R5 - 100mm - 160mm

9500.100160T

Pipe Scraper

Code: HDPEF

Nominal Size

Code



9507T

Cleaning & Anti-Static Wipes

Code: HPPEL

Nominal Size

Code



9518T

PE100

Clamp saddles

Clamp Saddles					
Code: PSAQU	Nominal Size	Code	D	PN	Bolts
	20 x 1/2"	SEP010020B	20 x 1/2"	6	2
	25 x 1/2"	SEP010025B	25 x 1/2"	6	2
	25 x 3/4"	SEP010025C	25 x 3/4"	6	2
	32 x 1/2"	SEP010032B	32 x 1/2"	6	2
	32 x 3/4"	SEP010032C	32 x 3/4"	6	2
	32 x 1"	SEP010032D	32 x 1"	6	2
	40 x 1/2"	SEP010040B	40 x 1/2"	6	2
	40 x 3/4"	SEP010040C	40 x 3/4"	6	2
	40 x 1"	SEP010040D	40 x 1"	6	2
	50 x 1/2"	SEP010050B	50 x 1/2"	6	2
	50 x 3/4"	SEP010050C	50 x 3/4"	6	2
	50 x 1"	SEP010050D	50 x 1"	6	2
	63 x 1/2"	SEP010063B	63 x 1/2"	6	6
	63 x 3/4"	SEP010063C	63 x 3/4"	6	6
	63 x 1"	SEP010063D	63 x 1"	6	4
	63 x 1 1/4"	SEP010063E	63 x 1 1/4"	6	6
	63 x 1 1/2"	SEP010063F	63 x 1 1/2"	6	6
	75 x 1/2"	SEP010075B	75 x 1/2"	6	6
	75 x 3/4"	SEP010075C	75 x 3/4"	6	6
	75 x 1"	SEP010075D	75 x 1"	6	4
	75 x 1 1/4"	SEP010075E	75 x 1 1/4"	6	6
	75 x 1 1/2"	SEP010075F	75 x 1 1/2"	6	6
	75 x 2"	SEP010075G	75 x 2"	6	4
	90 x 1/2"	SEP010090B	90 x 1/2"	6	6
	90 x 3/4"	SEP010090C	90 x 3/4"	6	6
	90 x 1"	SEP010090D	90 x 1"	6	4
	90 x 1 1/4"	SEP010090E	90 x 1 1/4"	6	6
	90 x 1 1/2"	SEP010090F	90 x 1 1/2"	6	6
	90 x 2"	SEP010090G	90 x 2"	6	4
	110 x 1/2"	SEP010110B	110 x 1/2"	6	6
	110 x 3/4"	SEP010110C	110 x 3/4"	6	6
	110 x 1"	SEP010110D	110 x 1"	6	4
	110 x 1 1/4"	SEP010110E	110 x 1 1/4"	6	6
	110 x 1 1/2"	SEP010110F	110 x 1 1/2"	6	6
	110 x 2"	SEP010110G	110 x 2"	6	4
	110 x 3"	SEP010110I	110 x 3"	6	4
	125 x 1/2"	SEP010125B	125 x 1/2"	6	4
	125 x 3/4"	SEP010125C	125 x 3/4"	6	4
	125 x 1"	SEP010125D	125 x 1"	6	4
	125 x 1 1/4"	SEP010125E	125 x 1 1/4"	6	4
	125 x 1 1/2"	SEP010125F	125 x 1 1/2"	6	4
	125 x 2"	SEP010125G	125 x 2"	6	4
	125 x 2 1/2"	SEP010125H	125 x 2 1/2"	6	4
	125 x 3"	SEP010125I	125 x 3"	6	4

Clamp saddles

Clamp saddles

Clamp Saddles					
Code: PSAQU	Nominal Size	Code	D	PN	Bolts
	125 x 4"	SEP010125L	125 x 4"	6	4
	140 x ¾"	SEP010140C	140 x ¾"	6	6
	140 x 1"	SEP010140D	140 x 1"	6	6
	140 x 1¼"	SEP010140E	140 x 1¼"	6	6
	140 x 1½"	SEP010140F	140 x 1½"	6	6
	140 x 2"	SEP010140G	140 x 2"	6	6
	140 x 3"	SEP010140I	140 x 3"	6	6
	140 x 4"	SEP010140L	140 x 4"	6	6
	160 x ½"	SEP010160B	160 x ½"	6	6
	160 x ¾"	SEP010160C	160 x ¾"	6	6
	160 x 1"	SEP010160D	160 x 1"	6	6
	160 x 1¼"	SEP010160E	160 x 1¼"	6	6
	160 x 1½"	SEP010160F	160 x 1½"	6	6
	160 x 2"	SEP010160G	160 x 2"	6	6
	160 x 2½"	SEP010160H	160 x 2½"	6	6
	160 x 3"	SEP010160I	160 x 3"	6	6
	160 x 4"	SEP010160L	160 x 4"	6	6
	200 x ¾"	SEP010200C	200 x ¾"	6	6
	200 x 1"	SEP010200D	200 x 1"	6	6
	200 x 1¼"	SEP010200E	200 x 1¼"	6	6
	200 x 1½"	SEP010200F	200 x 1½"	6	6
	200 x 2"	SEP010200G	200 x 2"	6	6
	200 x 3"	SEP010200I	200 x 3"	6	6
	200 x 4"	SEP010200L	200 x 4"	6	6
	225 x ½"	SEP010225B	225 x ½"	6	6
	225 x ¾"	SEP010225C	225 x ¾"	6	6
	225 x 1"	SEP010225D	225 x 1"	6	6
	225 x 1¼"	SEP010225E	225 x 1¼"	6	6
	225 x 1½"	SEP010225F	225 x 1½"	6	6
	225 x 2"	SEP010225G	225 x 2"	6	6
	225 x 3"	SEP010225I	225 x 3"	6	6
	225 x 4"	SEP010225L	225 x 4"	6	6
	250 x 1"	SEP010250D	250 x 1"	6	6
	250 x 1¼"	SEP010250E	250 x 1¼"	6	6
	250 x 1½"	SEP010250F	250 x 1½"	6	6
	250 x 2"	SEP010250G	250 x 2"	6	6
	250 x 3"	SEP010250I	250 x 3"	6	6
	250 x 4"	SEP010250L	250 x 4"	6	6
	315 x 1"	SEP010315D	315 x 1"	6	6
	315 x 1¼"	SEP010315E	315 x 1¼"	6	6
	315 x 1½"	SEP010315F	315 x 1½"	6	6
	315 x 2"	SEP010315G	315 x 2"	6	6
	315 x 3"	SEP010315I	315 x 3"	6	6
	315 x 4"	SEP010315L	315 x 4"	6	6

Clamp saddles reinforced

Clamp Saddles Reinforced

Code: PSAQU



Nominal Size	Code	D	PN	Bolts
20 x 1/2"	SEP011020B	20 x 1/2"	6	2
25 x 1/2"	SEP011025B	25 x 1/2"	6	2
25 x 3/4"	SEP011025C	25 x 3/4"	6	2
32 x 1/2"	SEP011032B	32 x 1/2"	6	2
32 x 3/4"	SEP011032C	32 x 3/4"	6	2
40 x 1/2"	SEP011040B	40 x 1/2"	6	2
40 x 3/4"	SEP011040C	40 x 3/4"	6	2
40 x 1"	SEP011040D	40 x 1"	6	2
50 x 1/2"	SEP011050B	50 x 1/2"	6	2
50 x 3/4"	SEP011050C	50 x 3/4"	6	2
50 x 1"	SEP011050D	50 x 1"	6	2
63 x 1/2"	SEP011063B	63 x 1/2"	6	6
63 x 3/4"	SEP011063C	63 x 3/4"	6	6
63 x 1"	SEP011063D	63 x 1"	6	4
63 x 1 1/4"	SEP011063E	63 x 1 1/4"	6	6
63 x 1 1/2"	SEP011063F	63 x 1 1/2"	6	6
75 x 1/2"	SEP011075B	75 x 1/2"	6	6
75 x 3/4"	SEP011075C	75 x 3/4"	6	6
75 x 1"	SEP011075D	75 x 1"	6	4
75 x 1 1/4"	SEP011075E	75 x 1 1/4"	6	6
75 x 1 1/2"	SEP011075F	75 x 1 1/2"	6	6
75 x 2"	SEP011075G	75 x 2"	6	4
90 x 1/2"	SEP011090B	90 x 1/2"	6	6
90 x 3/4"	SEP011090C	90 x 3/4"	6	6
90 x 1"	SEP011090D	90 x 1"	6	4
90 x 1 1/4"	SEP011090E	90 x 1 1/4"	6	6
90 x 1 1/2"	SEP011090F	90 x 1 1/2"	6	6
90 x 2"	SEP011090G	90 x 2"	6	4
110 x 1/2"	SEP011110B	110 x 1/2"	6	6
110 x 3/4"	SEP011110C	110 x 3/4"	6	6
110 x 1"	SEP011110D	110 x 1"	6	4
110 x 1 1/4"	SEP011110E	110 x 1 1/4"	6	6
110 x 1 1/2"	SEP011110F	110 x 1 1/2"	6	6
110 x 2"	SEP011110G	110 x 2"	6	4
110 x 3"	SEP011110I	110 x 3"	6	4
125 x 1/2"	SEP011125B	125 x 1/2"	6	4
125 x 3/4"	SEP011125C	125 x 3/4"	6	4
125 x 1"	SEP011125D	125 x 1"	6	4
125 x 1 1/4"	SEP011125E	125 x 1 1/4"	6	4
125 x 1 1/2"	SEP011125F	125 x 1 1/2"	6	4
125 x 2"	SEP011125G	125 x 2"	6	4
125 x 2 1/2"	SEP011125H	125 x 2 1/2"	6	4
125 x 3"	SEP011125I	125 x 3"	6	4

Clamp saddles reinforced

Clamp saddles reinforced

Clamp Saddles Reinforced

Code: PSAQU



Nominal Size	Code	D	PN	Bolts
125 x 4"	SEP011125L	125 x 4"	6	4
140 x ¾"	SEP011140C	140 x ¾"	6	6
140 x 1"	SEP011140D	140 x 1"	6	6
140 x 1¼"	SEP011140E	140 x 1¼"	6	6
140 x 1½"	SEP011140F	140 x 1½"	6	6
140 x 2"	SEP011140G	140 x 2"	6	6
140 x 3"	SEP011140I	140 x 3"	6	6
140 x 4"	SEP011140L	140 x 4"	6	6
160 x ½"	SEP011160B	160 x ½"	6	6
160 x ¾"	SEP011160C	160 x ¾"	6	6
160 x 1"	SEP011160D	160 x 1"	6	6
160 x 1¼"	SEP011160E	160 x 1¼"	6	6
160 x 1½"	SEP011160F	160 x 1½"	6	6
160 x 2"	SEP011160G	160 x 2"	6	6
160 x 2½"	SEP011160H	160 x 2½"	6	6
160 x 3"	SEP011160I	160 x 3"	6	6
160 x 4"	SEP011160L	160 x 4"	6	6
200 x ¾"	SEP011200C	200 x ¾"	6	6
200 x 1"	SEP011200D	200 x 1"	6	6
200 x 1¼"	SEP011200E	200 x 1¼"	6	6
200 x 1½"	SEP011200F	200 x 1½"	6	6
200 x 2"	SEP011200G	200 x 2"	6	6
200 x 3"	SEP011200I	200 x 3"	6	6
200 x 4"	SEP011200L	200 x 4"	6	6
225 x ½"	SEP011225B	225 x ½"	6	6
225 x ¾"	SEP011225C	225 x ¾"	6	6
225 x 1"	SEP011225D	225 x 1"	6	6
225 x 1¼"	SEP011225E	225 x 1¼"	6	6
225 x 1½"	SEP011225F	225 x 1½"	6	6
225 x 2"	SEP011225G	225 x 2"	6	6
225 x 3"	SEP011225I	225 x 3"	6	6
225 x 4"	SEP011225L	225 x 4"	6	6
250 x 1"	SEP011250D	250 x 1"	6	6
250 x 1¼"	SEP011250E	250 x 1¼"	6	6
250 x 1½"	SEP011250F	250 x 1½"	6	6
250 x 2"	SEP011250G	250 x 2"	6	6
250 x 3"	SEP011250I	250 x 3"	6	6
250 x 4"	SEP011250L	250 x 4"	6	6
315 x 1"	SEP011315D	315 x 1"	6	6
315 x 1¼"	SEP011315E	315 x 1¼"	6	6
315 x 1½"	SEP011315F	315 x 1½"	6	6
315 x 2"	SEP011315G	315 x 2"	6	6
315 x 3"	SEP011315I	315 x 3"	6	6
315 x 4"	SEP011315L	315 x 4"	6	6

Flowmeter, Plastic Design Variable Area Principle Construction

- Male threads moulded into the ends of the metering tube allow for easy mounting of unions.
- The O-ring seals ensure reliable sealing between metering tube and union without radial forces, which could lead to bursting of the tube.
- Floats are available in stainless steel 1.4571, PP or PVDF (depending on flow medium and measuring range).
- The scale on the metering tube can be suited to the medium and is available e.g. in l/h, m³/h or %.
- Dovetail sections moulded into the metering tube allow for easy mounting of adjustable flow indicators, limit switches and a continuous readout transmitter

Features

- The plastic flowmeters operate according to the variable area principle, whereby the float can move freely within the metering tube.
- Type series 800 is suitable for volumetric flow measurement of inert and corrosive gases and liquids.

Advantages

- High accuracy, simple handling
- Impact resistance, corrosion resistance.
- Over 500 standard scales and over 3000 special scales are available and further scales are available on request.
- Clear and large size scale.

Working Pressure	
Metering tubes with plastic unions	PN 10
Metering tubes with metal unions	PN 11

Design	
Float material	Working medium
PP	Liquids and gases
PP with magnet	Liquids and gases
St. steel 1.4571	Liquids
St. steel 1.4571 with magnet	Liquids
PP	Gases
PP with magnet	Gases
PVDF	Liquids and gases
PVDF	Liquids and gases

Body configuration	
Straight through	

Connection	
Threaded spigots/Socket/BS	

Tube material	
Polysulphone	temperature range 0-100°C

Material of O rings	
O-rings Viton	FPM
O-rings Ethylene-Propylene	EPDM

Design	
Polyvinylchloride	PVC
Polypropylene	PP
Malleable iron	GT
St. st. 1.4571	VA
Polyvinylidenfluoride	PVDF
Note:	
When ordering, the flow ranges should be stated as follows:	
Liquid media	l/h
Diameter:	mm
Required information:	
The following data are necessary:	
1. Type of medium	
2. Concentration of medium (%)	
3. Required flow range (l/h, m ³ /h, kg/h)	
4. Working pressure, relative or absolute (bar)	
5. Temperature of medium (°C)	
6. Viscosity of medium (if available)	
7. Specific gravity of medium (if available)	
8. Float with or without magnet	

Variable area flowmeters (VAF)

Flowmeters

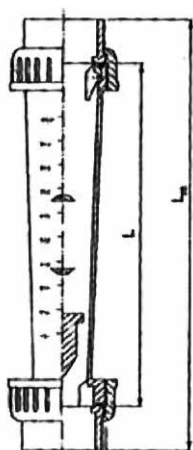
Flowmeter with Transparent PVCu Body and PVDF Float Debitmeters

Code: PSAQU



Code	Description	DN	Type
HDRFLU016A	PVC 16 1.5-15	16/1.5-15	T100
HDRFLU016B	PVC 16mm-mm range 2.5-25	16/2.5-25	T100
HDRFLU016C	PVC 16mm-mm range 5-50	16/5-50	T100
HDRFLU016D	PVC 16mm-mm range 10-100	16/10-100	T100
HDRFLU020A	PVC 20mm-mm range 8-80	20/8-80	T100
HDRFLU020B	PVC 20mm-mm range 15-150	20/15-150	T100
HDRFLU020C	PVC 20mm-mm range 20-200	20/20-200	T100
HDRFLU032AE	PVC 32mm-mm range 15-150	32/15-150	T100
HDRFLU032BC	PVC 32mm-mm range 30-300	32/30-300	T100
HDRFLU032CC	PVC 32mm-mm range 50-500	32/50-500	T100
HDRFLU032DC	PVC 32mm-mm range 100-1000	32/100-1000	T100
HDRFLU032C	PVC 32mm-mm range 50-500	32/50-500	T300
HDRFLU032D	PVC 32mm-mm range 100-1000	32/100-1000	T300
HDRFLU040A	PVC 40mm-mm range 150-1500	40/150-1500	T300
HDRFLU040B	PVC 40mm-mm range 250-2500	40/250-2500	T300
HDRFLU050A	PVC 50mm-mm range 200-2000	50/200-2000	T300
HDRFLU050B	PVC 50mm-mm range 300-3000	50/300-3000	T300
HDRFLU050C	PVC 50mm-mm range 600-6000	50/600-6000	T300
HDRFLU063B	PVC 63mm-mm range 600-6000	63/600-6000	T300
HDRFLU063C	PVC 63mm-mm range 1000-10000	63/1000-10000	T300
HDRFLU063D	PVC 63mm-mm range 1500-15000	63/1500-15000	T300

Dimensions



Description	DN	L	Lm
1.5-15	10	165	
2.5-25			
5-50			
10-100			
8-80	15	185	
15-150			
20-200			
15-150	25	200	
30-300			
50-500			
100-1000			
50-500	25	350	400
100-1000			
150-1500	32	350	408
250-2500			
200-2000	40	350	418
300-3000			
600-6000			
600-6000	50	350	432
1000-10000			
1500-15000			

SCALE FOR H2O (Suitable also for demineralized H2O) PVC pipe (max 60°C)-PVC float

Sales and enquiries please contact: 01622 795 225

Backing Rings

Galvanised Mild Steel Drilled to BS10 Table D/E

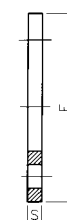
Code: PSFAC



Inches	mm	Code	E	ID	S	P.C.D.	Holes	Bolt Size	Weight (GR)
½"	-	MTABEA0200	95	28	6	67	4	M12x55	210
¾"	-	MTABEA0250	102	34	6	73	4	M12x60	230
1"	-	MTABEA0320	115	42	6	83	4	M12x60	290
1¼"	-	MTABEA0400	120	51	6	87	4	M12x70	290
1½"	-	MTABEA0500	134	62	6	98	4	M12x75	370
2"	-	MTABEA0630	152	78	8	115	4	M16x80	590
2½"	-	MTABEA0750	165	92	8	127	4	M16x85	1480
3"	-	MTABEA0900	185	110	8	145	4	M16x90	1060
4"D	-	MTABEA110D	216	138	8	178	4	M16x95	1210
4"E	-	MTABEA110E	216	138	8	178	8	M16x95	1190
5"	-	MTABEA1400	254	167	10	210	8	M16x110	2070
6"	-	MTABEA1600	290	196	10	235	8	M20x120	2160
8"	-	MTABEA2250	337	250	10	292	8	M20x150	3507

Galvanised Mild Steel Drilled to BS4504 NP10/16

Code: PSFAC



Inches	mm	Code	E	ID	S	P.C.D.	Holes	Bolt Size	Weight (GR)
½"	20	MTIBNI0200	95	28	6	65	4	M12x55	350
¾"	25	MTIBNI0250	105	34	6	75	4	M12x60	410
1"	32	MTIBNI0320	115	42	6	85	4	M12x60	490
1¼"	40	MTIBNI0400	140	51	6	100	4	M16x70	730
1½"	50	MTIBNI0500	150	62	6	110	4	M16x75	820
2"	63	MTIBNI0630	165	78	8	125	4	M16x80	1220
2½"	75	MTIBNI0750	185	92	8	145	4	M16x85	1480
3"	90	MTIBNI0900	200	110	8	160	8	M16x90	1500
4"	-	MTIBNI1100	220	136	8	180	8	M16x95	1680
-	110	MTIBNI1100M	220	133	8	180	8	M16x95	1680
5"	140	MTIBNI1400	250	165	10	210	8	M16x110	1940
6"	-	MTIBNI1600	285	196	10	240	8	M20x120	2700
-	160	MTIBNI1600M	285	188	10	240	8	M20x120	2700
-	200	MTIBNI2000	340	235	10	295	12	M20x120	3125
8"	225	MTIBNI2250 NP16 only	340	250	10	295	12	M20x150	3230
-	250	MTIBNI2500M							
-	315	MTIBNI3150M							

Accessories

Backing Rings

Galvanised Mild Steel Drilled to ASA150

Code: PSFAC

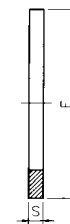


Inches	mm	Code	E	ID	S	P.C.D.	Holes	Bolt Size	Weight (GR)
½"	-	MTABAA0200	89	28	6	60	4	M12x55	190
¾"	-	MTABAA0250	99	34	6	70	4	M12x60	230
1"	-	MTABAA0320	108	42	6	80	4	M12x60	290
1¼"	-	MTABAA0400	118	51	6	90	4	M12x70	300
1½"	-	MTABAA0500	127	62	6	98	4	M12x75	360
2"	-	MTABAA0630	152	78	8	121	4	M16x80	790
2½"	-	MTABAA0750	177	92	9	142	4	M16x85	1205
3"	-	MTABAA0900	190	110	8	152	4	M16x90	1240
4"	-	MTABAA1100	229	138	8	190	8	M16x95	1560
-	110	MTABAA1100M	229	133	8	190	8	M16x95	1560
6"	-	MTABAA1600	280	196	10	241	8	M20x120	2730
-	160	MTABAA1600M	280	188	10	241	8	M20x120	2730
8"	-	MTABAA2250	343	250	10	298	8	M20x150	3340

PVCu Backing Rings

PVCu Backing Ring Drilled to BS4504 NP10/16

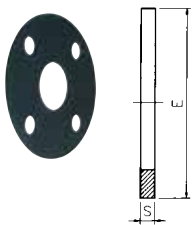
Code: PSFAC



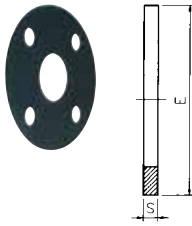
mm	In	Code	D	E	S	P.C.D.	Holes	Bolts	Weight (GR)
20	½"	RFIFLI0200	28	95	11	65	4	M12x55	55
25	¾"	RFIFLI0250	34	105	12	75	4	M12x60	85
32	1"	RFIFLI0320	42	115	14	85	4	M12x60	120
40	1¼"	RFIFLI0400	51	140	15	100	4	M16x70	175
50	1½"	RFIFLI0500	62	150	16	110	4	M16x75	210
63	2"	RFIFLI0630	78	165	18	125	4	M16x80	300
75	2½"	RFIFLI0750	92	185	19	145	4	M16x90	355
90	3"	RFIFLI0900	110	200	20	160	8	M16x90	430
110	—	RFIFLI1100	133	220	22	180	8	M16x95	520
125	—	RFIFLI1250	149	230	24	190	8	M16x100	585
140	5"	RFIFLI1400	167	250	26	210	8	M16x110	700
160	—	RFIFLI1600	190	285	28	240	8	M20x120	960
200	—	RFIFLI2000	235	340	30	295	8	M20x130	1230
225	—	RFIFLI2250	250	340	30	295	8	M20x150	1150

Gaskets

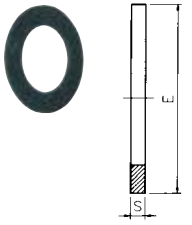
Flat Gaskets for Full Face Flanges Drilled to BS10 Table D/E EPDM

Code: PSFAC	Inches	mm	Code	E	S	Holes	Weight (GR)
	1"		EPAGFA0320	114	3	4	35
	1¼"		EPAGFA0400	120	3	4	40
	1½"		EPAGFA0500	135	3	4	55
	2"		EPAGFA0630	156	3	4	57
	2½"		EPAGFA0750	165	3	4	56
	3"		EPAGFA0900	186	3	4	99
	4E"		EPAGFA110E	219	3	8	114
	6"		EPAGFA1600	279	3	8	160
	8"		EPAGFA2250	340	3	8	162

Flat Gaskets for Full Face Flanges Drilled to BS4504 NP10/16 EPDM

Code: PSFAC	Inches	mm	Code	E	S	Holes	Weight (GR)
	½"	20	EPIGFI0200	95	3	4	
	¾"	25	EPIGFI0250	101	3	4	
	1"	32	EPIGFI0320	114	3	4	
	1¼"	40	EPIGFI0400	120	3	4	
	1½"	50	EPIGFI0500	135	3	4	
	2"	63	EPIGFI0630	156	3	4	
	2½"	75	EPIGFI0750	176	3	4	
	3"	90	EPIGFI0900	186	3	8	
	4"	110	EPIGFI1100	219	3	8	
	6"	160	EPIGFI1600	279	3	8	
	8"	225	EPIGFI2250	340	3	12	

Flat Gaskets for Stub Flanges

Code: PSFAC	Inches	mm	Code	E	S	Holes	Weight (GR)
	½"	20	EPAGSA0200	30	3		20
	¾"	25	EPAGSA0250	41	3		21
	1"	32	EPAGSA0320	50	3		26
	1¼"	40	EPAGSA0400	61	3		29
	1½"	50	EPAGSA0500	73	3		34
	2"	63	EPAGSA0630	90	3		35
	2½"	75	EPAGSA0750	106	3		38
	3"	90	EPAGSA0900	125	3		40
	4"	110	EPAGSA1100	150	4		43
	—	125	EPAGSA1250	168	4		47
	5"	140	EPAGSA1400	188	4		59
	6"	160	EPAGSA1600	213	4		73
	—	200	EPAGSA2000	254	4		80
	8"	225	EPAGSA2250	274	4		88
	10"	250	EPAGSA2500				
	12"	315	EPAGSA3150				

Accessories

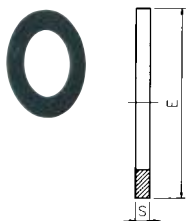
EPDM Gaskets for Tank Connectors

EPDM Gaskets for Tank Connectors

Code: PSFAC

Nominal
Size

Code



1/2"	EPATCA0200
3/4"	EPATCA0250
1"	EPATCA0320
1 1/4"	EPATCA0400
1 1/2"	EPATCA0500
2"	EPATCA0630
2 1/2"	EPATCA0750
3"	EPATCA0900
4"	EPATCA1100

Pipe Clips, Clamps and Brackets

Pipe Bracket with Safety Clip - Imperial

Code: PSFAC

Nominal
Size

Code

L

Z

E

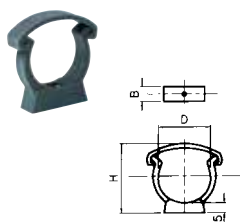
F

I

S

Pack
Qty

Weight
(GR)



3/8"	RFABCA0160	13	34							100	3
1/2"	RFABCA0200	14	39							100	5
3/4"	RFABCA0250	14	45							100	7
1"	RFABCA0320	15	52							100	10
1 1/4"	RFABCA0400	16	61							100	14
1 1/2"	RFABCA0500	17	67							100	20
2"	RFABCA0630	18	80							100	25
2 1/2"	RFABCA0750	19	96							50	33
3"	RFABCA0900	20	110							50	49
4"	RFABCA1100	25	135							10	74
5"	RFABCA1400	27	164							10	95
6"	RFABCA1600	30	196							10	184

Pipe Bracket with Safety Clip

Code: PSFAC

Nominal
Size

Code

L

Z

E

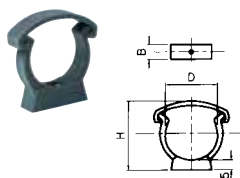
F

I

S

Pack
Qty

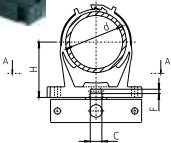
Weight
(GR)



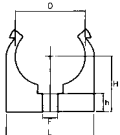
16	RFIBCI0160	13	33							100	3
20	RFIBCI0200	14	38							100	5
25	RFIBCI0250	14	44							100	7
32	RFIBCI0320	15	51							100	10
40	RFIBCI0400	16	60							100	14
50	RFIBCI0500	17	71							100	20
63	RFIBCI0630	18	84							100	25
75	RFIBCI0750	19	97							10	33
90	RFIBCI0900	20	113							10	49
110	RFIBCI1100	23	134							10	74
125	RFIBCI1250	25	145							10	95
140	RFIBCI1400	27	167							10	135
160	RFIBCI1600	30	190							10	184

Pipe Clips, Clamps and Brackets

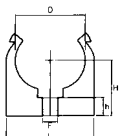
Universal Pipe Clamp

Code: PSFAC	mm	In	Code	H	H1	A	B	C	D	E	F	G	I	Pack Qty	Weight (GR)
 	20	½"	PFBPTB0200	27.0	6.0	56.0	14.0	9.0	6.5	11.0	3.5	41.0	6.5	100	10
	25	¾"	PFBPTB0250	30.0	10.0	61.0	16.0	9.0	6.5	11.0	3.5	46.0	6.5	100	13
	32	1"	PFBPTB0320	31.5	11.5	67.0	16.0	9.0	6.5	11.0	3.5	52.0	6.5	100	15
	40	1¼"	PFBPTB0400	37.0	14.0	80.0	17.5	9.0	6.5	11.0	3.5	64.0	6.5	100	23
	50	1½"	PFBPTB0500	41.0	15.0	84.5	20.0	9.0	6.5	11.0	3.5	70.0	6.5	100	29
	63	2"	PFBPTB0630	49.0	15.0	96.5	24.0	9.0	6.5	11.0	3.5	80.0	6.5	100	41
	75	2½"	PFBPTB0750	70.0	15.0	126.0	26.0	12.0	8.5	14.0	4.3	106.0	8.5	20	69
	90	3"	PFBPTB0900	80.0	20.0	137.0	26.0	12.0	8.5	14.0	4.3	117.0	8.5	20	85

Pipe Bracket - Imperial

Code: PSFAC	Nominal Size	Code	L	H	h	F	Pack Qty	Weight (GR)
 	½"	PFAPTA0200	25	22	12	4	100	3
	¾"	PFAPTA0250	31	26	12	4	100	4
	1"	PFAPTA0320	39	30	12	4	100	6
	1¼"	PFAPTA0400	49	33	12	4	100	10
	1½"	PFAPTA0500	61	41	15	4	100	20
	2"	PFAPTA0630	75	47	15	4	100	30

Pipe Bracket

Code: PSFAC	Nominal Size	Code	L	H	h	F	Pack Qty	Weight (GR)
 	20	PFIPTI0200	25	22	12	4	100	3
	25	PFIPTI0250	31	26	12	4	100	4
	32	PFIPTI0320	39	30	12	4	100	6
	40	PFIPTI0400	49	33	12	4	100	10
	50	PFIPTI0500	61	41	15	4	100	20
	63	PFIPTI0630	75	47	15	4	100	30

Accessories

Solvent Cement and PTFE Tape

Solvent Cement for PVCu[†]

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	RTORCO0500	12	560



Solvent Cement for PVCu

Quick, thixotropic rigid PVCu cement. For joining pipes, sockets and fittings with press and loose fit (gap filling) in pressure and drain systems. Suitable for diameters <315mm and 16 bar.

Dri-fast Solvent Cement for PVCu[†]

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	250ml tin	RTORD00250	20	310
	500ml tin	RTORD00500	12	620



Dri-fast utilises a special solvent formula that reduces drying times. Dri-fast is also suitable for use in damp or wet conditions.

Dri-fast Solvent Cement

Very fast, blue thixotropic rigid PVCu.

For joining pipes, sockets and fittings with interference fit and loose fit (gap filling) in pressure and drainage systems. Excellent for Swimming pools, Spa's and applications under humid conditions. Suitable for diameters <160mm and 6 bar.

Solvent Cement for ABS[†]

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	ATOACO0500	12	540



Solvent Cement for ABS

Quick thixotropic ABS cement. For joining pipes, sockets and fittings with press and loose fit (gap filling) in pressure and drain systems. Suitable for diameters <315mm and 15 bar.

Cleaning Fluid for PVCu and ABS[†]

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
	500ml tin	CTORM00500	12	560



Cleaning Fluid

Effast MEK cleaner should be used for de-greasing and preparation of PVCu and ABS pipes and fittings prior to jointing with the relevant Effast cement.

Solvent Cement and PTFE Tape

HCR 36 Chemically Resistant Solvent Cement†

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
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500ml tin

RTOHCR36

12

Solvent Cement for Chemical Applications – HCR-36

Low-viscosity rigid PVCu cement. For joining pipes, sockets and fittings with press and loose fit (gap filling) in pressure and drain systems. Also suitable for PVCc max 60C. Especially for joints demanding a high chemical resistance. Suitable for diameters <160mm and 10 bar.

Indication of chemicals which require HCR-36 cement and cleaner.

Sulphuric Acid at concentrations >70%
 Hydrochloric Acid at concentrations >25%
 Nitric Acid at concentrations >20%
 Lyes (caustic soda) at concentrations >35%
 Fluoric Acid any concentration
 Sodium Hypochlorite: active chlorine content >7.5%

HCR 36 Cleaner*

Code: PSFAC	Size	Code	Pack Qty	Weight (GR)
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500ml tin

CTOHCR36

12

Cleaning Fluid for Chemical Applications – HCR-36

Cleaner for rigid PVCu, PVCc and ABS.

Cleaner should be used for de-greasing and preparation of PVCu, PVCc and ABS pipes and fittings prior to jointing with HCR-36 cement.

Indication of chemicals which require HCR-36 cement and cleaner.

Sulphuric Acid at concentrations >70%
 Hydrochloric Acid at concentrations >25%
 Nitric Acid at concentrations >20%
 Lyes (caustic soda) at concentrations >35%
 Fluoric Acid any concentration
 Sodium Hypochlorite: active chlorine content >7.5%

Brushes for Solvent Cement

Code: PSPVF	Nominal Size	Code	L	Z	F	Weight (GR)
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25mm

BTOBRO0250

10

50mm

BTOBRO0500

25

PTFE Tape

Code: PSPVF	Nominal Size	Code	L	Z	F	Weight (GR)
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12mm

PTOPTFE12

10

† Cure Times

Curing times may vary depending on surface area, product quantity used, humidity level and ambient temperature. If possible leave for 24 hours. More details available on request.

* Chemical Resistance

The chemical resistance of joints depends on gap width, drying time, pressure applied, temperature, type and concentration of the product. In general, the joint can be stated to have the same chemical resistance as the material itself, with the exception of a very limited number of very aggressive chemicals, such as concentrated organic acids, lyes and powerful oxidants.

Accessories

Material selection

In order to select the most suitable material for a pipe system the following factors need to be considered –

- The medium or fluid to be conveyed and its chemical composition
- Operating pressure
- Operating temperature

These factors are interlinked and only when all are addressed can the correct material be selected.

There are a number of properties which are key to the suitability of a material to fulfil the factors above.

General properties

Density

Is a measure of the mass of a given volume, polymers have the lowest density of all classes of engineering materials.

Energy content

The amount of energy released during the combustion of the substance. Polyolefines such as PE, PP and PB contain approximately the same energy as heating oil at 44MJ/kg.

Recycle fraction

Usually represented by a number between 0 and 1 without units. Higher fractions indicate materials which are likely to be recycled. Thermoplastics can be recycled, polyethylene offers one of the highest recycle factors of polymers at approximately 0.6.

Mechanical properties

Tensile

Tensile testing is performed by the elongation of a test specimen until it breaks. Values obtained from the resulting curve of stress against elongation include.

- Yield stress
- Percentage of elongation
- Modulus of elasticity
- Impact

Impact testing is performed to measure the ability of a material to withstand impact. The use of a notched test is necessary to produce a break in ductile materials.

Hardness

Testing the hardness of a material involves the application of a defined load through a defined surface area. Dependent on the type of test the resulting indentation or penetration is recorded as a measure of the material hardness.

Thermal properties

Thermal expansion coefficient

The rate of expansion or contraction due to a change in temperature differs between material types. Although the amount of expansion per metre for each degree change in temperature may appear small, the expansion of a long pipe length through a moderate change in temperature can be significant. Where plastics are to be joined to other materials consideration should be given to the possible stresses within the connection due to different coefficient values.

Thermal conductivity

Indication of the transfer of heat through the material. Higher values indicate a material which allows the passage of heat more readily. Lower values imply a better insulating material.

Electrical properties

Dielectric strength

The maximum electric field strength a material can intrinsically withstand without failure of its insulating properties. Poor conductors usually support electrostatic fields

Surface resistivity

The resistance to the flow of electrical current over the surface of a material. Engineering plastics are inherently good insulators with high surface resistance values of 10^{14} and above. Resistivity can be reduced through the addition of conductive additives to the base polymer.

The following is a list of abbreviations used in this catalogue:

ABS	Acrylonitrile–Butadiene–Styrene
ASA	American Standards Association
BSP	British Standard Pipe (Thread)
DIN	Deutsche Industrie Normen (German Industrial Standards)
EPDM	Ethylene Propylene Rubber
FPM	Fluorine Rubber (e.g. Viton)
GR	Weight in grammes
ISO	International Standardisation Organisation
NBR	Nitrile Rubber
NP	Nominal Pressure
PE	Polyethylene
PP	Polypropylene
PTFE	Polytetrafluoroethylene (e.g. Teflon)
PVCu	Unplasticised Polyvinyl Chloride
SP	Standard Pack
PN	Pressure Rating

Material selection



Picture supplied courtesy of Sterling Hydrotec.

Comparative properties of PVCu, ABS and PP			
Property	PVCu-Rigid	ABS High Impact	PP Homopolymer
General			
Composition	$(CH_2-CH-Cl)_n$	$(CH_2-CH-CH_2-CH-CN-C_6H_5)_n$	$(CH_2-CH-CH_3)_n$
Density (Mg/m ³)	1.35 to 1.55	1.03 to 1.07	0.90 to 0.92
Energy Content (Mj/kg)	85 to 106	85 to 120	90 to 110
Recycle Fraction	0.15 to 0.25	0.45 to 0.55	0.25 to 0.35
Mechanical			
Young's Modulus of elasticity (GPa)	2.2 to 3.5	2.1 to 2.8	1 to 1.6
Elastic Limit (MPa)	35 to 52	40 to 45	28 to 33
Tensile Strength (MPa)	30 to 70	45 to 48	25 to 40
Compressive Strength (MPa)	55 to 60	55 to 60	40 to 45
Ductility	0.1 to 3	0.06 to 0.07	1 to 2
Endurance Limit (MPa)	27 to 31.2	24 to 27	15.4 to 18.2
Fracture Toughness (MPa.m ^{1/2})	1 to 2	2.3 to 2.6	1.9 to 2.1
Hardness Vickers	10.6 to 15.6	5.6 to 12.2	9.3 to 11.2
Poisson's Ratio	0.38 to 0.43	0.38 to 0.42	0.4 to 0.45
Thermal			
Normal Service Temperature (°C)	0 to 60	-40 to 60	-10 to 110
Thermal Expansion (mm/m.°C)	0.055 to 0.095	0.070 to 0.100	0.080 to 0.150
Specific Heat (J/kg.K)	1000 to 1100	1500 to 1510	1920 to 2100
Thermal Conductivity (W/m.K)	0.24 to 0.26	0.17 to 0.24	0.16 to 0.24
Electrical			
Dielectric Constant	3.1 to 3.2	2.8 to 3.3	2.26 to 2.4
Resistivity (10 ¹³ ohm.m)	3.16 to 10	6.31 to 15.8	10 to 1000

Temperature and pressure relationship for pipes, PVCu imperial						
Class C			Class D		Class E	
Temperature (°C)	bar	psi	bar	psi	bar	psi
0	9.0	130	12.0	174	15.0	217
20	9.0	130	12.0	174	15.0	217
30	8.1	117	10.8	156	13.5	195
35	7.2	104	9.6	139	12.0	174
40	6.3	91	8.4	121	10.5	152
45	5.4	78	7.2	104	9.0	130
50	4.0	58	5.4	78	6.7	97
55	2.7	39	3.6	52	4.5	65
60	1.3	18	1.8	26	2.2	31

Temperature and pressure relationship for pipes, PVCu metric		
Pipe pressure rating (bar)		
Temperature (°C)	PN10	PN16
0	10.0	16.0
20	10.0	16.0
30	8.0	12.8
35	7.1	11.8
40	6.4	10.2
45	5.1	8.2
50	4.4	7.0
55	3.3	5.2
60	2.6	4.1

Temperature and pressure relationship for pipes, PE100		
Pipe pressure rating (bar)		
Temperature (°C)	PN10/SDR17	PN16/SDR11
-40	10.0	16.0
-30	10.0	16.0
-20	10.0	16.0
0	10.0	16.0
20	10.0	16.0
30	8.4	13.5
40	7.2	11.6
50	3.6	5.8
60	1.8	2.9

Temperature and pressure relationship for pipes, ABS imperial						
Class C			Class D		Class E	
Temperature (°C)	bar	psi	bar	psi	bar	psi
-40	9.0	130	12.0	174	15.0	217
-20	9.0	130	12.0	174	15.0	217
0	9.0	130	12.0	174	15.0	217
20	9.0	130	12.0	174	15.0	217
30	8.1	117	11.3	163	13.5	195
40	6.3	91	8.5	123	10.5	152
50	4.5	65	6.3	91	7.5	108
60	2.7	39	3.8	55	4.5	65

Temperature and pressure relationship for pipes, PP-H metric (PN10)				
Pipe pressure rating (bar)				
Temperature (°C)	50 Years	25 Years	10 Years	1 Year
20	10.0	10.6	11.0	12.3
40	6.2	6.6	6.9	8.0
60	3.8	4.1	4.3	5.2
80	—	1.6	2.0	3.5
95	—	—	0.9	2.3
110	—	—	—	1.6

Selection of pipeline systems

Pipeline system selection

Pipeline system selection is usually based on a number of parameters: -

- The effect of working conditions such as pressure, temperature and the fluid carried.
- Flow rate of the fluid usually governs the pipe size.

PVCu (imperial sizes) pressure ratings— fittings, valves and pipes			
Product	Size—inches	Pressure rating at 20°C	
		psi	bar
Fittings			
Solvent cement	½–6	217	15
	8,10 and 12	130	9
Threaded	¾–4	145	10
Union	½–2½	174	12
	3–4	145	10
Flange Blanks			
	1–2	232	16
	2½–4	145	10
	5–6	87	6
Valves			
Ball	¾–2	232	16
	2½–4	145	10
3 Way ball	¾–2	145	10
Diaphragm	½–2	145	10
Butterfly	3–5	145	10
	6	87	6
Knife gate	1½–4	36	2.5
Check	¾–2	232	16
	2½–3	145	10
Wafer check	2–6	145	10
	8	87	6
Pipes			
Class E	½–6	217	15
Class D	1¼–6	174	12
Class C	2–12	130	9
Class T Threading and machining only	¾–2	174	12

PVCu (metric sizes) pressure ratings— fittings, valves and pipes			
Product	Size—mm	Pressure rating at 20°C	
		bar	psi
Fittings			
Solvent cement	16–160	16	232
	200–315	10	145
Metric solvent x BSP adaptor	16 x $\frac{3}{8}$ " - 110–4"	10	145
Valves			
Ball	16–63	16	232
	75–110	10	145
Diaphragm	20–63	10	145
Butterfly	90–140	10	145
	160	6	87
Check	16–63	16	232
	75–90	10	145
Pipes			
PN rated	16–315	10 and 16	145 and 232

PP-H (metric sizes) pressure ratings— fittings, valves and pipes			
Product	Size—mm (inches)	Pressure rating at 20°C	
		bar	psi
Fittings			
Socket fusion	16–110	10	145
Valves			
Ball union end/ socket fusion	20–63 (½" - 2")	10	145
Ball union end/ threaded BSP	(½"–2")	10	145
Butterfly	90–140 (3"–5")	10	145
	160–225 (6"–8")	6	87
Check	20–63 (½"–2")	10	145
Pipes			
PN rated	16–110	10	145

ABS (imperial sizes) pressure ratings– fittings, valves and pipes			
Product	Size–inches (mm)	Pressure rating at 20°C	
		psi	bar
Fittings			
Solvent cement	½–4	217	15
	5–6	174	12
	8	145	10
Threaded BSP	¾–3	145	10
Union	½–2½	174	12
	3–4	145	10
Flange Blanks			
	1–2	232	16
	2½–4	145	10
	5–6	87	6
Valves			
Ball	¾–2 (16–63mm)	232	16
	2½–4 (75–110mm)	145	10
Check	¾–2 (16–63mm)	232	16
	2½–3 (75–90mm)	145	10
Pipes			
Class E	¾–4	217	15
Class D	6	174	12
Class C	1–8	130	9
Class T Threading and machining only	¾–2	174	12

Valve selection

Valve selection is based upon a number of key parameters: -

- The primary valve body material is selected along with the material best suited for the pipe system.
- Thereafter valve selection will depend on the properties of the conveyed medium and the valve characteristics themselves, as shown in table.
- The compatibility of the seal material to the conveyed medium within the known operating parameters must be confirmed, which can be determined by reference to the valve seal behaviour in table.
- Additionally, valves have another important characteristic known as torque rating which is very important in actuated applications.

Valve selection			
Valve features	Ball valve	Butterfly valve	Diaphragm valve
Standard seal	EPDM, FPM	EPDM, FPM	EPDM
Flow	Full	Restricted	Restricted
Flow adjustment	Limited, not positive	Good, positive	Good, positive
Frictional pressure loss	Low	Medium	High
Behaviour water hammer	Fair	Limited	Limited

Valve seal behaviour			
Seal features	Ball valve	Butterfly valve	Diaphragm valve
Liquid, particle free	Good	Good	Good
Liquid, particulate or crystal forming	Limited, needs regular cleaning	Good, but needs occasional cleaning	Good
Liquid, viscous	Good	Limited	Limited
Gases	Good	Good	Limited

For more information regarding the

selection of valves for actuation and the relevant torque figures, please ask for a copy of the full Effast Technical Catalogue.

Storage, handling and installation

Introduction

One of the key parts of a successful installation comes from the way that plastic pipes and components are stored and handled. This chapter deals with the installation of plastic pipeline systems and describes the methods for preserving structural integrity and compensating for thermal expansion.

Storage and handling

Pipe is often stored directly on the ground or supported in racks or pallets and the following conditions should be observed: -

- Ensure that the ground surface is level and cleared of debris to prevent the pipes from becoming bent, scored and damaged.
- Pipes should never be stacked more than 6 layers high and in hot climates this should be restricted to 4 layers. Large bore pipes should not be stacked greater than 1 metre high, thus avoiding ovality due to heat and pressure.
- Pipes of different diameters and wall thickness should be stacked separately. If this is not practical the larger diameter and thicker walled pipes should be stored at the bottom of the stack.
- Pipe racks should be constructed to provide full support to each pipe layer. Side supports should be at least 100mm wide and be placed at regular intervals of 1.2 metres along the pipe length.
- Narrow straps to support the pipe stack should be avoided.
- Pipes can be stored in palletised stacks as long as the pallets and not the pipes support the stack weight and pallets should be stacked no more than 3 pallets high for short periods only.
- Pipes and fittings stored for an extended period of time should be protected from direct sunlight to avoid UV degradation. Fittings should be stored using a method that allows air circulation such as porous hessian sacks, boxes or on shelves.

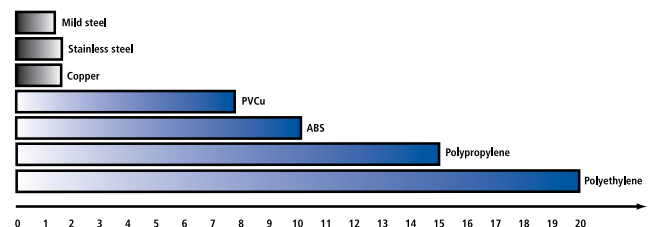
The whole purpose of correct handling is to avoid damage to pipes and should encompass loading, transit and unloading of the pipes. The following guidelines should be addressed when handling pipes: -

- Pipes should be loaded and unloaded manually without dragging them over the ground, as this causes damage. However if handling pallets of pipe by forklift ensure that the forks do not cause damage.
- Flatbed vehicles should be used to distribute pipe loads and the largest diameter pipe should be loaded first with the smaller pipe loaded on top or nested inside to avoid damage. Do not drop pipes off the vehicle when off loading but handle and stack them correctly.

Installation of plastic pipes

Thermoplastics expand and contract to a far greater extent than metals and the following sketch provides a comparison between some metals and plastics: -

Comparison of thermal expansion of plastics and metals



There are two factors to consider when calculating expansion or contraction in pipes: -

- Environmental temperature (external temperature) at which the pipe will stabilise prior to installation.
- Fluid temperature (internal temperature) which is the operational temperature of the pipeline system.

The change in length due to thermal expansion or contraction in a pipeline system is determined by the following formula: -

Where ΔL Expansion (ΔL_e) or contraction (ΔL_c) in mm

$$\Delta L = \Delta T \times L \times \delta$$

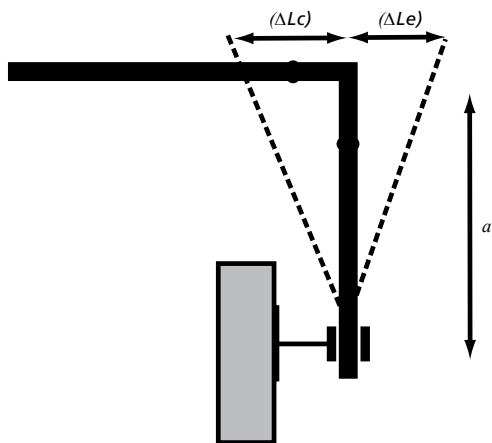
ΔT Difference in temperature between the installation and the operating temperatures in °C ($=T_{\text{operate}} - T_{\text{install}}$)

L Length of pipe when installed δ Coefficient of expansion

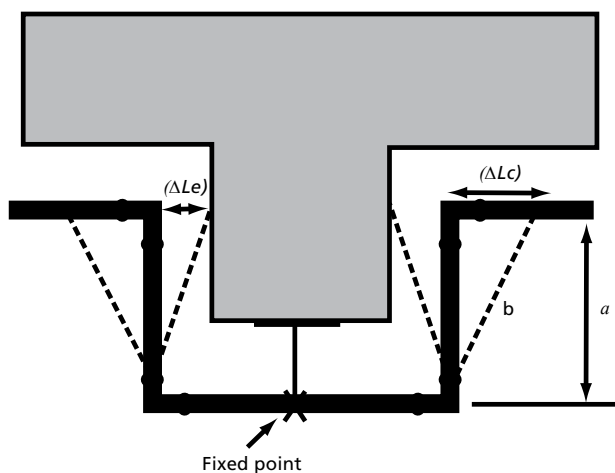
Flexible arms in pipeline installations

Flexible arms or expansion bellows are used in order to avoid the associated stresses generated from a pipe's change in length due to expansion or contraction. Expansion bellows are not a prime concern of this document and the installer is advised to seek specialist guidance from the manufacturers of such products. The flexibility of plastics permits expansion or contraction to be compensated for by means of either directional change within a pipe system (single flexible arm) or by the installation of expansion loops consisting of two flexible arms (double flexible arm), as shown in the following illustrations: -

Single arm



Double arm (expansion loop)



How to find the flexible arm (a) length

To calculate the length of a flexible arm (a) the following formulae can be used: -

$$a = \left(\sqrt{D \times \Delta L} \right) \times C_m$$

$$\text{Single arm: } a = \left(\sqrt{D \times \frac{\Delta L}{2}} \right) \times C_m$$

Double arm:

Where a Flexible arm length (mm)

D Pipe outside diameter (mm)

ΔL Expansion or Contraction (mm) for single arm,

for double arm use $\Delta L/2$ C_m Constant for material, see table.

Thermoplastic material constant (C_m)	
Thermoplastic material	Constant
PVCu	33.5
ABS	32.7
PP	30.0
PE	26.0

Worked example

A 40mm ABS pipe ($C_m = 32.7$) has expanded in length by 22mm, what is the length required for single and double flexible arm arrangements?

Solution	
Single arm	Double arm
$a = \left(\sqrt{D \times \Delta L} \right) \times C_m$	$a = \left(\sqrt{D \times \frac{\Delta L}{2}} \right) \times C_m$
$a = \left(\sqrt{40 \times 22} \right) \times 32.7$	$a = \left(\sqrt{40 \times \frac{22}{2}} \right) \times 32.7$
$a = 970\text{mm}$	$a = 686\text{mm}$

Pre-stressing flexible arms

Sometimes changes of length (ΔL) can only be channelled in one direction, possibly due to a flexible section having to operate in a confined space. When this occurs the flexible arm can be pre-stressed achieving the following:-

- The flexible arm can be reduced in length
- The flexible arm will straighten under working conditions thus relieving a large amount of stress
- The installation will look better when in service

Storage, handling and installation

Coefficient of linear expansion for thermoplastics (δ)		
Thermoplastic material	Coefficient δ ($10^{-5}\text{m/m}^\circ\text{C}$)	Length/temperature equivalent ($\text{mm/m}^\circ\text{C}$)
PVCu	7.8	0.78
ABS	10.1	1.01
PP	15.0	1.50
PE	20.0	2.00

For example PVCu will expand 0.078mm per metre for every 1°C raised in mid-wall temperature above the installation temperature.

Calculated expansion for 1 metre length pipe					
Temperature difference ($^\circ\text{C}$)	Expansion (mm)				Comment
	PVCu	ABS	PP	PE100	
1	0.078	0.101	0.150	0.200	
2	0.156	0.202	0.300	0.400	
3	0.234	0.303	0.450	0.600	
4	0.312	0.404	0.600	0.800	
5	0.390	0.505	0.750	1.000	
6	0.468	0.606	0.900	1.200	
7	0.546	0.707	1.050	1.400	i.e. For PVCu @ 37°C
8	0.624	0.808	1.200	1.600	
9	0.702	0.909	1.350	1.800	$20^\circ\text{C} = 1.560\text{mm}$
10	0.780	1.010	1.500	2.000	$+17^\circ\text{C} = 1.326\text{mm}$
11	0.858	1.111	1.650	2.200	
12	0.936	1.212	1.800	2.400	$37^\circ\text{C} = 2.886\text{mm}$
13	1.014	1.313	1.950	2.600	
14	1.092	1.414	2.100	2.800	
15	1.170	1.515	2.250	3.000	
16	1.248	1.616	2.400	3.200	
17	1.326	1.717	2.550	3.400	
18	1.404	1.818	2.700	3.600	
19	1.482	1.919	2.850	3.800	
20	1.560	2.020	3.000	4.000	

Please note that the temperature difference is the difference between the installation temperature and the working temperature, in degrees Celsius ($^\circ\text{C}$).

Worked example

Find the expansion and contraction on a 4" diameter PVCu pipe system installed at 10°C , where the maximum and minimum operating temperatures are 30°C and 8°C respectively and the overall length of the installation is 30m.

Solution		
Step	Operating temperature ($^\circ\text{C}$)	
	30	8
Calculate temperature difference $\Delta T (=T_{\text{operate}} - T_{\text{install}})$	$= 30 - 10$ $= +20^\circ\text{C}$	$= 8 - 10$ $= -2^\circ\text{C}^*$
Calculate change in length due to expansion and contraction $\Delta L = \Delta T \times L \times \delta$ ($\delta = 0.078$ for PVCu)	$= 20 \times 30 \times 0.078$ $= 46.8\text{mm}$	$= -2 \times 30 \times 0.078$ $= -4.68\text{mm}^*$
Select length of flexible arm or compensator	Take the greater value (change in length) regardless of whether it is due to expansion or contraction that can accommodate the maximum movement. In this case $\Delta L = 46.8\text{mm}$	

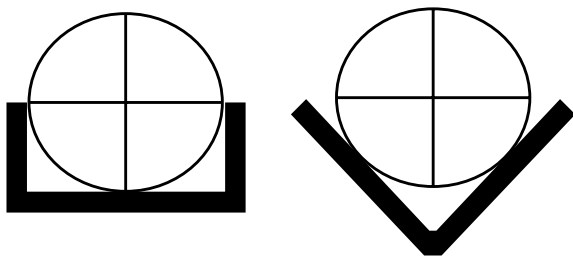
* Please note a (-) minus value represents the difference in temperature (it is not a subzero) and hence it causes a contraction of the length of the pipe.

Plastic pipe systems support and bracketing

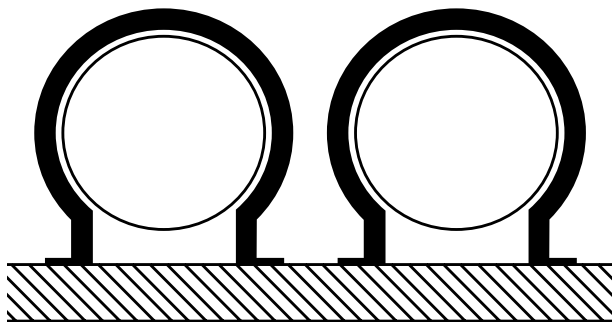
Plastic pipe systems require regular support which can vary according to pipe material, size and wall dimension of the pipe, the weight (density) of the liquid carried and the temperature of the pipe wall. There are three types of mechanism which support or restrain pipe movement: Restrained within a channel; supported with clips or brackets at predetermined intervals and limiting rings to restrict axial movement.

Supports, brackets and limiting rings

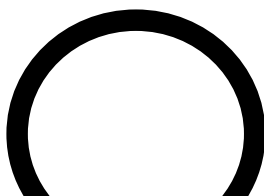
- Full support of the pipeline can be achieved by running along suitable channel and restraining it from lateral movement.



- Pipelines which are suspended have to be supported by brackets spaced at predetermined intervals (see the following tables).



- Limiting Rings PVCu and ABS: These can be made by cutting a small length (dissecting 1/3rd of the circumference) of class 'C' or 10 bar pipe of the same outside diameter of the carrier pipe. The remaining segment can be sprung open and then solvent welded into place on the carrier pipe.



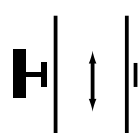
Brackets

Pipe brackets need to be made with the inside diameter of the bracket marginally larger than the pipe outer diameter. This allows free lineal movement of the pipe and avoids inhibiting expansion or contraction. They should also be smooth, to avoid damage to the outer surface of the pipe.

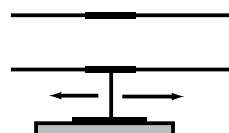
Tables are based on class E pipe (15 bar) or the PN16 metric rating. For pipes of a lower rating the spacing will be closer, derate as follows: -

- Class D (12 bar) and PN12 rated pipe x 0.75
- Class C (9 bar) and PN10 rated pipe x 0.62

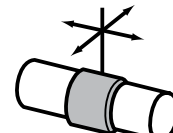
Loose brackets—axial movement is required without constraint



A loose bracket allows axial movement.

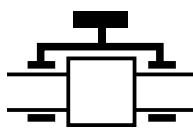


A sliding bracket allows movement along a flat supporting surface.

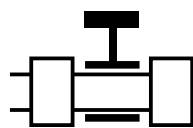


Hanging bracket allows radial and axial movement.

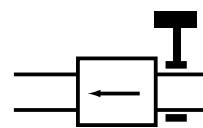
Fixed brackets—axial movement constrained or controlled



A bracket on either side prevents axial movement.



A bracket between two pipe sockets or limiting rings prevents axial movement.



A bracket to control pipe movement in one direction.

Storage, handling and installation

Bracket spacing for PVCu PN 16 metric pipe and class E (15 bar) imperial pipe						
Pipe size		Bracket spacing in metres				
mm	inch	20°C	30°C	40°C	50°C	60°C
16	¾	0.80	0.70	0.50	*	*
20	½	0.90	0.80	0.60	*	*
25	¾	1.00	0.90	0.70	0.55	0.40
32	1	1.10	0.95	0.75	0.60	0.45
40	1¼	1.20	1.10	0.90	0.70	0.55
50	1½	1.30	1.20	1.00	0.80	0.60
63	2	1.40	1.30	1.10	0.90	0.65
75	2½	1.50	1.40	1.20	1.00	0.70
90	3	1.60	1.50	1.30	1.20	0.85
110	4	1.90	1.80	1.60	1.30	1.10
125	-	2.10	2.00	1.85	1.60	1.25
140	5	2.20	2.10	1.90	1.65	1.35
160	6	2.30	2.20	2.00	1.75	1.50
225	8	2.60	2.45	2.30	2.00	1.75
250	-	2.80	2.70	2.55	2.20	1.95
280	10	3.20	3.00	2.85	2.50	2.15
315	12	3.60	3.40	3.20	2.80	2.45

* Implies full support requirement.

Bracket spacing for ABS class E pipe (15 bar)					
Pipe size		Bracket spacing in metres			
inch		20°C	30°C	40°C	60°C
¾		0.80	0.75	0.65	0.50
½		0.90	0.80	0.75	0.55
¾		1.00	0.95	0.85	0.70
1		1.10	1.00	0.95	0.75
1¼		1.20	1.10	1.00	0.80
1½		1.25	1.20	1.10	0.85
2		1.40	1.30	1.20	0.90
2½		1.50	1.35	1.25	1.00
3		1.60	1.45	1.35	1.05
4		1.80	1.65	1.55	1.20
5		2.00	1.80	1.70	1.30
6		2.10	1.90	1.80	1.40
8		2.30	2.10	1.90	1.50

Bracket spacing for PE100 PN16/SRD11 (For SDR17 pipe multiply the support centres by a factor of 0.91.)					
Pipe size		Bracket spacing in metres			
mm		20°C	30°C	40°C	60°C
20		0.66	0.66	0.55	0.44
25		0.77	0.66	0.66	0.55
32		0.88	0.88	0.77	0.66
40		0.99	0.99	0.88	0.77
50		1.10	1.10	0.99	0.88
63		1.32	1.32	1.21	0.99
75		1.54	1.43	1.32	1.10
90		1.65	1.65	1.54	1.32
110		1.87	1.76	1.65	1.43
125		1.98	1.87	1.76	1.54
140		2.09	2.09	1.98	1.65
160		2.31	2.20	2.09	1.76
180		2.42	2.31	2.20	1.98
200		2.53	2.42	2.31	2.09
225		2.75	2.64	2.53	2.31
250		2.86	2.75	2.64	2.31
280		3.08	2.97	2.86	2.42
315		3.19	3.08	2.97	2.64

* Implies full support requirement.

Bracket spacing for Polypropylene metric 10 bar rated pipe

Pipe size	Bracket spacing in metres				
mm	20°C	40°C	60°C	80°C	100°C
16	0.74	0.68	0.63	0.54	0.39
20	0.79	0.69	0.64	0.59	0.44
25	0.84	0.82	0.74	0.69	0.49
32	0.99	0.94	0.84	0.74	0.54
40	1.05	1.03	0.94	0.84	0.59
50	1.20	1.14	1.04	0.89	0.69
63	1.38	1.29	1.18	1.04	0.79
75	1.53	1.43	1.28	1.13	0.84
90	1.63	1.53	1.43	1.23	0.93
110	1.84	1.73	1.58	1.38	1.04

The Z dimension

The following steps should be undertaken in preparation for a pipeline installation: -

- Prepare a basic sketch of the pipeline system, including fittings.
- Enter the dimensions of the pipes and fittings and the centre to centre measurement of each section either by measuring on site or from the engineer's drawings.
- Calculate the cut length of each piece of pipe between fittings to enable correct overall assembled length of section as follows:

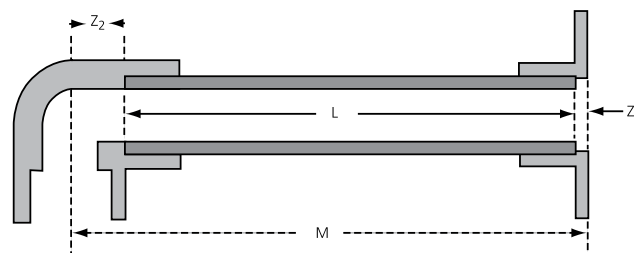
$$L = M - Z_1 - Z_2$$

Where L Cut length of pipe

M Centre to centre length between fittings

$Z_1 - Z_2$ Linear Dimensions of fittings

Z dimension



As an example, the installation notes for a PVCu pipe would appear as follows: -

M centre to centre	=	1200mm
Less Z_1 flange	=	4mm
Less Z_2 bend	=	80mm
- 84mm		
L cut length pipe	=	1116mm

Joining methods for Plastic pipe systems

This deals with the four key methods of joining plastic pipes and the selection of a joining method is dependent on the pipe material and its characteristics.

Table below is a guide to the selection of the type of joint which can be used for the particular pipe material.

Thermoplastic joining methods			
Method	PVCu	Thermoplastic material ABS	PP and PE
Solvent cement	✓	✓	✗
Mechanical	✓	✓	✓
Fusion	✗	✗	✓
Compression	✓	✓	✓

Solvent cement is formulated to chemically solvate the surfaces of pipes and fittings, so that when they are pushed together the softened surfaces intermix and cure into a hard, strong and leak-free joint. Materials welded this way must be alike, i.e. PVCu to PVCu and ABS to ABS. Not PVCu to ABS or vice versa.

This method uses threads and flanges to connect the different parts of pipeline systems.

Fusion joining involves heating the two components to be joined, so that the fusion/melt temperature on each surface is reached simultaneously. The two melted surfaces are then brought together at a pressure designed to produce a homogenous joint when cooled. The resulting joint will have an equivalent strength and pressure rating as the original pipe. Contact Polypipe for further details.

Compression jointing consists of compressing a rubber ring between the inner wall of the fitting and the outer wall of the pipe to be joined. Compression joints can be used to connect different types of pipe, both plastic and metal. As long as the correct fitting is selected, taking into account the outside diameters of the different types of pipe work, then a satisfactory joint can be made. **Note:** Compression joints are designed primarily for use on water pipelines. Contact Polypipe for further details.

✓ = Suitable ✗ = Not suitable

Methods of Jointing

PVCu and ABS solvent jointing procedure											
	Procedure	Equipment									
Important information:	• Always use Personal Protective Equipment–gloves and eye protection • Always carry out work in a well ventilated area • Always refer to Material Safety Data Sheets • Dispose of waste responsibly • Failure to follow the jointing procedure may invalidate any warranties given										
	1. Cut the pipe at right angles to its axis and to the required length. Deburr the cut end of the pipe with a sharp knife or scraper.		Pipe cutter Saw Scraper or knife								
	2. Chamfer the leading edge of the pipe at approximately 15° to 30°. This will prevent the solvent cement being wiped from both the pipe and fitting when mated together and will also help to build up a ring of solvent around the chamfer, thus ensuring a proper seal.		Chamfering tool Fine disc angle grinder, file or abrasive paper 80–100 grit								
		<table><tr><th>Pipe Size</th><th>Chamfer Size (mm)</th></tr><tr><td>3⁄8" (16mm)</td><td>2</td></tr><tr><td>1⁄2" –1 1⁄2" (20–50mm)</td><td>3–4</td></tr><tr><td>2" –8" (63–225mm)</td><td>5–6</td></tr></table>	Pipe Size	Chamfer Size (mm)	3⁄8" (16mm)	2	1⁄2" –1 1⁄2" (20–50mm)	3–4	2" –8" (63–225mm)	5–6	
	Pipe Size	Chamfer Size (mm)									
3⁄8" (16mm)	2										
1⁄2" –1 1⁄2" (20–50mm)	3–4										
2" –8" (63–225mm)	5–6										
3. Mark the pipe back from the chamfered end to a length equal to the socket depth plus 5mm. This mark will act as a visual indicator to show that the pipe is fully inserted into the socket.		Marker pen									
4. Roughen the pipe surface (up to the indicator mark) and the inside of the socket with abrasive cloth or paper. Do not roughen the pipe and fitting to the extent that the clearance between them is noticeably increased.		Abrasive paper/cloth 80–100 grit									
5. Clean the inner surface of the socket and the surface of the pipe up to the mark using a lint free cloth or absorbent paper dampened with Effast solvent cleaner.		Lint free cloth or absorbent paper Effast solvent cleaner									

PVCu and ABS solvent jointing procedure—continued

Procedure	Equipment
Select the correct solvent cement, PVCu to PVCu, ABS to ABS. (failure to use the recommended solvent cement may invalidate any warranties given) Apply the cement straight from the tin and ensure all relevant surfaces are covered.	Read the instructions on the tin. Avoid using excessive amounts of solvent cement.
	Effast PVCu cement Effast ABS cement Brush (half the diameter of the socket)
	

Joints are normally made in temperatures between 5–25°C and in dry conditions, damp or wet conditions can adversely effect the solvent jointing procedure. The maximum time before the cement is too dry for jointing is approximately 3 minutes. In hot weather this time is reduced. The joint must be made whilst the cement is still wet. At temperatures below 5°C the curing time will be considerably increased.

7. Push fittings/pipe together without twisting and ensure that they are aligned and fully engaged (the indicator mark should be in line with the edge of the socket) then hold the assembly for a short time as specified.

Pipe Size

3/8"–2" (16mm–63mm)
 2½"–4" (75–119mm)
 5"–8" (140–225mm)
 10"–12" (250–315mm)

Holding Time

(minutes)
 ½
 ¾
 1
 2



When the joint is made, an O-ring of cement is formed between the pipe chamfer and the internal socket wall. This ring helps to ensure seal integrity. A bead of cement will show around the external junction of the pipe and fitting, this should be wiped off leaving the outer part of the joint clean. Do not disturb for at least 10–15 minutes to ensure that the weld integrity is maintained. After this period, the assembly can be carefully handled, prepared for further jointing or left for the recommended curing time which is:

Up to 8" (225mm) ambient temperature constantly above 5°C After 8 hours The joint will have cured enough to withstand the working pressure.
 After 24 hours The pipe system can be fully pressure tested.

The number of operators:

For joints of up to 2½" (75mm) 1 person is required, from 3" (90mm) up to 6" (160mm) 2 persons are needed, for 8" (225mm) and above 3 people are required.

Pipe work should be ventilated during the joining and curing processes. Never seal a pipe system which has been newly jointed as the trapped vapours can cause damage. Positive ventilation with a small air blower is recommended to purge systems with multiple joints.

Recommended joints per litre of Effast cement

Pipe size		Thermoplastic material	
inch	mm	PVCu	ABS
3/8–1	16–32	300	400
1¼–2	40–63	120	175
2½–3	75–90	50	70
4	110	30	45
5	140	20	30
6	160	15	25
8	200–225	8	15
10	250–280	3	4
12	315	3	4

Methods of Jointing

Important points

- Heavy equipment should be supported independently from the pipeline. i.e. valves, strainers, etc.
- Pipe clips should be made to allow linear expansion of the pipeline and if lined the lining should be of a material compatible with the pipeline.
- Mastics, intumescent mastics, adhesive tapes and labels should not be used (as many degrade plastics), unless manufacturers provide documents of adhesive or mastic compatibility.
- Insulation must be considered very carefully, as a number of foam rubber insulation products and their adhesives may not be compatible with plastic pipes.
Adhesives should only be used to bond the foam edges together and should never be used to bond the insulation to the pipeline. Refer to manufacturers for compatibility data. For example, compatible insulations are fibre wools (Rockwool), polystyrene, etc.
- Trace heating tapes: Don't use tapes covered with plasticized PVC as this can react with thermoplastic pipes. Tapes with sheaths made from woven wire, polyester or silicone rubber are acceptable.
- Oils: A number of synthetic oils are not suitable for use with plastic pipelines. Oils such as esters, organic phosphates and polyalkylene glycols should be avoided.
- Health and safety: Solvent cement and cleaning fluid give off vapours that are dangerous to health. During jointing the work place must be well ventilated.

Solvent jointing, "Do Nots"

- Make joints in rain or wet conditions.
- Use dirty brushes or cleaning rags.
- Use the same brushes with different solvent cements.
- Dilute or thin solvent cements with cleaner.
- Leave solvent cement tins open as the contents will evaporate and the cement performance will be reduced.
- Use near naked lights or smoke whilst jointing as solvents are highly flammable.
- Make joints in a confined space as solvents emit hazardous vapours.

Mechanical jointing procedure–threaded fittings–plastic to plastic

An extensive range of threaded fittings are available, mostly parallel threaded but some tapered. Thread compatibility is an essential aspect of jointing. For jointing such parts follow these steps: -

1. Select compatible thread i.e. Parallel to Parallel, never Parallel to taper or vice versa.
2. Use PTFE tape to seal the joint. If sealant pastes are used they must be compatible with the plastic components.
3. Hand tighten and if necessary tighten further to a maximum of 1/4 turn using a strap wrench.

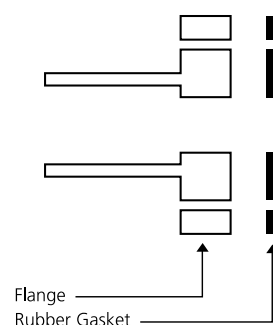
PVCu class 7 and ABS class T pipes, sizes $\frac{3}{8}$ " up to 2" are manufactured with a thick wall to enable threads to be cut.

Flanges–plastic to plastic/metal

Flanges are suitable for joining metals or rubbers to plastics. Jointing such parts follow these steps: -

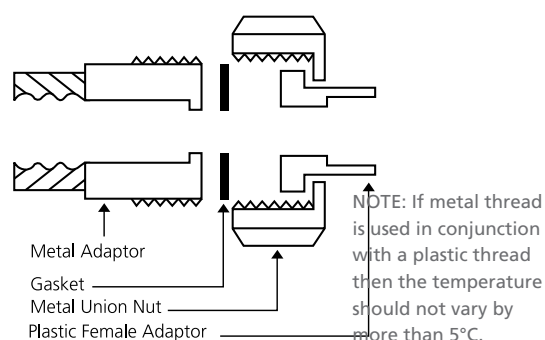
1. Ensure flanges are parallel, close to each other and allow a gap for the gasket.
2. Insert gasket, ensure that the bolt holes are aligned.
3. Use flat washers between bolt head, the nut and the flange.

Flange joint



Composite unions–metal to plastics union joint

Composite



The Effast Polypropylene range is joined by socket fusion, the Effast PE100 range is joined by Butt fusion and Electro fusion

Polypropylene Socket Fusion Weld



Scrape and chamfer the pipe



Socket fusion weld process



Finished socket fusion weld



PE100 Butt Fusion Weld



Plain pipe ends to prepare the joint face



Butt fusion weld process



Finished butt fusion weld



PE100 Electro Fusion Weld



Push pipe into socket fitting



Electro weld process



Finished electro fusion weld



Methods of Jointing

General requirements

The welding area is to be protected from harmful weather, e.g. moisture, wind, intense sunlight, and temperatures below 5 °C.

When an even, appropriate welding temperature can be maintained for the pipe walls, then welding is possible at any outside temperature. This may involve:

- Preheating
- Protective shelter
- Heating up.

In direct sunlight, cover the weld area in advance, to allow temperature differences in unevenly warmed pipe to equalize. In strong wind, close off the extreme ends of the pipe segments to prevent cooling the weld during the welding process.

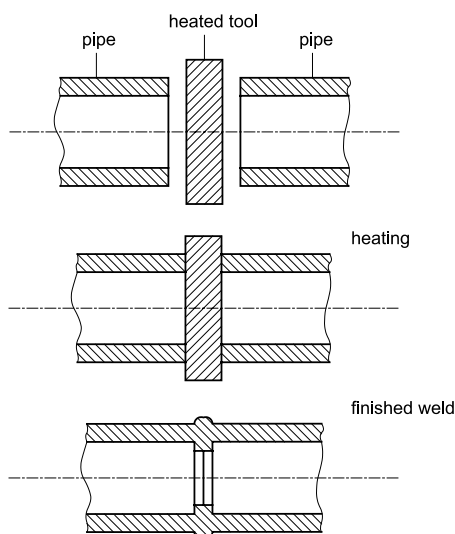
Welding methods

To achieve a permanent bond with Effast PE100 pipes and fittings, we recommend the processes that have proven themselves in practice:

- butt welding
- electro fusion welding.

Butt welding

Before butt welding, the two surfaces to be welded are heated to welding temperature by a heating plate. It is then removed and the two plasticized surfaces are pressed together to form a weld.



Heated tool butt welding

Weld preparation

The pipeline components are laid out axially before being clamped into the welding machine. The part to be welded on must be free to move along the axis, with the help of adjustable pulleys if necessary.

With a planer, machine off the surfaces to be bonded, after they have been clamped into place. If swarf happens to fall into the pipe, use a clean tool to remove it. A hand must never touch the surfaces planed for welding.

After planning, check that the surfaces are parallel. Any gap remaining must be no greater than the maximum in table.

Check that any mismatch of the pipe ends is smaller than 10 % of the pipe wall thickness. If not, the wall thicknesses are to be matched around the weld by machining.

Maximum gap before welding	
Pipe diameter (mm)	Max. gap (mm)
≤355	0.5
400 to 630	1.0
630 to 800	1.3
800 to 1200	1.5

Welding process

The heating plate is heated to welding temperature and placed between the surfaces to be welded. They are pressed against the heated tool with the correct matching pressure. The temperature is monitored with a rapidly registering surface thermometer.

The force for matching or welding can be calculated from the weld surface and the specific pressure.

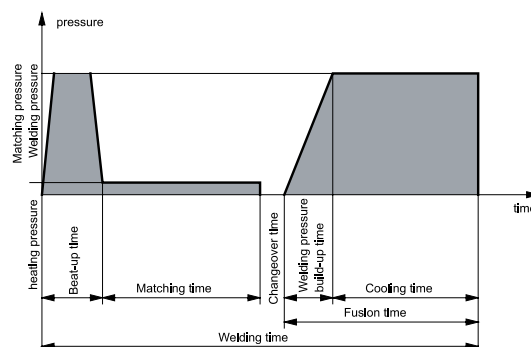
Usually the welding machine manufacturers give pressure values in table form, since most machines work with hydraulics, not with measured forces. To this pressure value, add the drag pressure from the movement of the work piece. The latter is influenced by friction of machine parts and the weight of the pipes and fittings to be welded.

Bead-up time is completed only after a bead has formed completely around both ends to be welded. The heating time begins at this point, and the pressure is reduced to nearly zero.

After heating, the fusion surfaces are detached from the heating plate without damage or contamination. The time for detaching the fusion surfaces, removing the heating plate, and bringing the fusion surfaces into contact with each other is called the changeover time. It should be kept as short as possible.

The weld surfaces should be brought into contact gently, at extremely low speed. Then pressure is slowly increased, then maintained until cooling is complete.

Never accelerate weld cooling or apply coolant to the area. For pipe walls 20 mm or more in thickness, an even cooling for a better weld can be achieved by covering the weld area during the cooling phase. After welding a double bead must go completely around the weld.



Steps in heated tool butt welding

DIN 8077/8078 PP-H (metric) pipe dimensions						
Diameter (mm)			Wall thickness (mm)			
Outside diameter	Mean outside diameter		6 bar		10 bar	
	Minimum	Maximum	Min	Max	Min	Max
16	16	16.3	–	–	2.0	2.4
20	20	20.3	1.8	2.2	2.5	3.0
25	25	25.3	1.8	2.2	2.7	3.2
32	32	32.3	2.0	2.4	3.0	3.5
40	40	40.4	2.3	2.8	3.7	4.3
50	50	50.5	2.9	3.4	4.6	5.3
63	63	63.6	3.6	4.2	5.8	6.6
75	75	75.7	4.3	5.0	6.9	7.8
90	90	90.9	5.1	5.9	8.2	9.3
110	110	111.0	6.3	7.2	10.0	11.2

EN1452 part 2 PVCu (metric) pipe dimensions			
Outside diameter (mm)	Average wall thickness (mm)		
	6 bar	10 bar	16 bar
16			
20			1.5
25			1.9
32		1.6	2.4
40		1.9	3.0
50	1.5	2.4	3.7
63	1.9	3.0	4.7
75	2.2	3.6	5.6
90	2.7	4.3	6.7
110	2.7	4.2	6.6
125	3.1	4.8	7.4
140	3.5	5.4	8.3
160	4.0	6.2	9.5
180	4.4	6.9	10.7
200	4.9	7.7	11.9
225	5.5	8.6	13.4
250	6.2	9.6	14.8
280	6.9	10.7	16.6
315	7.7	12.1	18.7

PE100 (metric) pipe dimensions		
Outside diameter (mm)	Average wall thickness (mm)	
	SDR17 (10 bar)	SDR11 (16 bar)
20	-	1.9
25	-	2.3
32	1.9	2.9
40	2.4	3.7
50	3	4.6
63	3.8	5.8
75	4.5	6.8
90	5.4	8.2
110	6.6	10
125	7.4	11.4
140	8.3	12.7
160	9.5	14.6
180	10.7	16.4
200	11.9	18.2
225	13.4	20.5
250	14.8	22.7
280	16.6	25.4
315	18.7	28.6
355	21.1	32.2
400	23.7	36.3
450	26.7	40.9
500	29.7	45.4
560	33.2	50.8
630	37.4	57.2

 Safety factor c = 2.5

 Safety factor c = 2

Pipe and Fitting Dimensions

DIN 8061 PVCu (metric) pipe dimensions						DIN 8063 PVCu (metric) fitting dimensions		
Diameter (mm)			Average wall thickness (mm)			Diameter (mm)		
Outside diameter	Mean outside diameter		6 bar	10 bar	16 bar	Nominal size	Mean socket internal diameter at midpoint of socket depth	
	Minimum	Maximum					Minimum	Maximum
16	16	16.2	–	–	1.2	16	16.1	16.3
20	20	20.2	–	–	1.5	20	20.1	20.3
25	25	25.2	–	1.5	1.9	25	25.1	25.3
32	32	32.2	–	1.6	2.4	30	32.1	32.3
40	40	40.2	1.8	1.9	3.0	40	40.1	40.3
50	50	50.2	1.8	2.4	3.7	50	50.1	50.3
63	63	63.2	1.9	3.0	4.7	63	63.1	63.3
75	75	75.3	2.2	3.6	5.6	75	75.1	75.3
90	90	90.3	2.7	4.3	6.7	90	90.1	90.3
110	110	110.3	3.2	4.2	6.6	110	110.1	110.4
125	125	125.3	3.7	4.8	7.4	125	125.1	125.4
140	140	140.4	4.1	5.4	8.3	140	140.2	140.5
160	160	160.4	4.7	6.2	9.5	160	160.2	160.5
180	180	180.4	5.3	6.9	10.7	180	180.3	180.6
200	200	200.4	5.9	7.7	11.9	200	200.3	200.8
225	225	225.5	6.6	8.6	13.4	225	–	–
250	250	250.5	7.3	9.6	14.8	250	–	–
280	280	280.6	8.2	10.7	16.6	280	–	–
315	315	315.6	9.2	12.1	18.7	315	–	–

BS 3505 PVCu (imperial) pipe dimensions															BS 4346 part 1 PVCu (imperial) fitting dimensions	
Diameter					Wall thickness (mm)										Diameter (mm)	
Nominal size (inch)	Mean outside diameter (mm)		Individual outside diameter (mm)		Class C 9.0 bar			Class D 12.0 bar			Class E 15.0 bar		Class 7 12.0 bar		Mean socket internal diameter at midpoint of socket depth	
					Average	Individual		Average	Individual		Average	Individual		Average		
	Min	Max	Min	Max	Min		Max	Min		Max	Min		Max	Min		
3/8"	17.0	17.3	17.0	17.3	–	–	–	–	–	–	1.9	1.5	1.9	–	17.1	17.3
1/2"	21.2	21.5	21.2	21.5	–	–	–	–	–	–	2.1	1.7	2.1	4.0	21.3	21.5
3/4"	26.6	26.9	26.6	26.9	–	–	–	–	–	–	2.5	1.9	2.5	4.2	26.7	26.9
1"	33.4	33.7	33.3	33.8	–	–	–	–	–	–	2.7	2.2	2.7	4.8	33.5	33.7
1 1/4"	42.1	42.4	42.0	42.5	–	–	–	2.7	2.2	2.7	3.2	2.7	3.2	5.2	42.2	42.4
1 1/2"	48.1	48.4	48.0	48.5	–	–	–	3.0	2.5	3.0	3.7	3.1	3.7	5.5	48.2	48.4
2"	60.2	60.5	60.0	60.7	3.0	2.5	3.0	3.7	3.1	3.7	4.5	3.9	4.5	5.9	60.3	60.5
2 1/2*	75.0	75.3	75.0	75.3	3.6	–	–	–	–	–	5.6	–	–	–	75.1	75.3
3"	88.7	89.1	88.4	89.4	4.1	3.5	4.1	5.3	4.6	5.3	6.5	5.7	6.6	–	88.8	89.1
4"	114.1	114.5	113.7	114.9	5.2	4.5	5.2	6.8	6.0	6.9	8.3	7.3	8.4	–	114.2	114.5
5*	140.0	140.4	139.4	141.0	6.3	5.5	6.4	8.3	7.3	8.4	10.1	9.0	10.4	–	140.1	140.4
6"	168.0	168.5	167.4	169.1	7.5	6.6	7.6	9.9	8.8	10.2	12.1	10.8	12.5	–	168.2	168.5
8"	218.8	219.4	218.0	220.2	8.8	7.8	9.0	11.6	10.3	11.9	14.1	12.6	14.5	–	219	219.4

NOTE: All PVCu ball valve imperial socket ends are manufactured in accordance with BS 4346 part 1 for mean socket internal diameter. The mean outside diameter of a pipe is arrived at either by taking the average of any two outside diameter measurements when measured at right angles to each other or by measuring with a circumference tape.

* Sizes 2 1/2" and 5" are not British Standard sizes but the equivalent metric size. They have been included for continuity of size only.

BS 5391 ABS (imperial) pipe dimensions															BS 5392 part 1 ABS (imperial) fitting dimensions				
Diameter					Wall thickness (mm)										Minimum socket depth (mm)	Mean socket internal diameter (mm)			
Nom size (inch)	Mean outside diameter (mm)		Individual outside diameter (mm)		Class B 6.0 bar		Class C 9.0 bar		Class D 12.0 bar		Class E 15.0 bar		Class T 12.0 bar			Root		Mouth	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max		Min	Max	Min	Max
3⁄8	17.0	17.3	17.0	17.3	–	–	–	–	–	–	1.6	1.8	3.4	3.6	14.5	16.9	17.3	17.1	17.3
½	21.2	21.5	21.2	21.5	–	–	–	–	–	–	1.9	2.1	3.5	3.7	16.5	21.1	21.4	21.3	21.5
¾	26.6	26.9	26.6	26.9	–	–	–	–	–	–	2.4	2.6	3.5	3.7	19.5	26.4	26.8	26.7	26.9
1	33.4	33.7	33.4	33.7	–	–	1.9	2.1	2.5	2.7	3.0	3.3	4.2	4.5	22.5	33.2	33.6	33.5	33.7
1¼	42.1	42.4	42.0	42.4	–	–	2.4	2.6	3.1	3.4	3.8	4.1	5.1	5.5	27.0	47.9	42.3	42.2	42.5
1½	48.1	48.4	48.0	48.5	–	–	2.7	3.0	3.6	3.9	4.4	4.7	5.8	6.2	30.0	47.9	48.3	48.2	48.6
2	60.2	60.5	60.0	60.7	–	–	3.4	3.7	4.5	4.9	5.4	5.8	7.0	7.4	36.0	60.0	60.4	60.3	60.7
2½	75.0	75.3	75.0	75.3	–	–	3.6	–	–	–	5.6	–	–	–	Refer to metric equivalent				
3	88.7	89.1	88.4	89.4	–	–	5.0	5.3	6.5	6.9	8.0	8.5	–	–	50.5	88.5	88.9	89.0	89.3
4	114.1	114.5	113.7	114.9	–	–	6.4	6.9	8.4	8.9	10.3	10.9	–	–	63.0	113.9	114.3	114.4	114.8
5	140.0	140.4	140.0	140.4	–	–	6.7	–	–	–	10.4	–	–	–	Refer to metric equivalent				
6	168.0	168.5	167.4	169.1	6.1	6.4	9.4	10.4	12.3	13.3	–	–	–	–	90.0	167.8	168.3	168.4	168.8
8	218.8	219.4	218.1	220.2	8.4	8.8	12.2	13.2	–	–	–	–	–	–	115.5	218.7	219.1	219.3	219.9

NOTE: All ABS ball valve imperial socket ends are manufactured in accordance with BS 5392 part 1 for mean socket internal diameter. The mean outside diameter is arrived at either by taking the average of any two outside diameter measurements when measured at right angles to each other or by measuring with a circumference tape.

Guide to chemical resistance

Guide to chemical resistance

The use of thermoplastic pipe systems within the domestic and industrial markets is now widespread. Thermoplastics have not only replaced traditional materials such as steel, ductile iron and copper within the water industry, but have also replaced expensive lined metal and glass systems within the chemical industries. Because of this diversity of use, it is essential that the most suitable plastic material is matched to its proposed application. This section will provide a guide to compatible material selection. The information within this section has been collated from tests carried out by both national and international standards organisations (ISO) as well as tests performed by independent test houses. The tests were based on the use of pure chemicals. For mixed chemicals, we would advise that pilot tests should be undertaken in order to ascertain the resistance of the material under these circumstances.

Chemical resistance classifications

The chemical resistance section should only be looked on as a general guide. Changes to the composition, concentrations or working conditions under which chemicals are used, can alter the resistance of the material.

Terminology for chemical resistance tables	
Symbol/term	Description
+	Resistant
0	Conditionally resistant
–	Not resistant
"Blank"	Where section is blank there is no test data available
Technical grade	Technically pure
Saturated	Media has reached its maximum absorption in water at ambient temperature, which is the point where there can be no further absorption.
Aqueous	A solution below maximum absorption, expressed as a percentage (%) of saturation (concentration)
Suspension	Insoluble or partially soluble solid carried in an aqueous base normally prepared at ambient temperature
Commercial Proprietary Industrial	Self explanatory, grades of chemical named brands in general use

Pipe joints: solvent cement

ABS pipe joints, made with "Effast" ABS solvent cement, are classed as resistant as the material itself. PVCu pipe joints, made with "Effast" PVCu solvent cement, are normally classed as resistant as the material. However the following chemicals and their concentrations are the exception.

Media Concentration

Hydrochloric acid, HCL	25% and above
Hydrofluoric acid, HF	All concentrations
Nitric acid, HNO ₃	20% and above
Sulphuric acid, H ₂ SO ₄	70% and above

Joints in contact with the above acids can only be classed as being conditionally resistant. To make joints classed as resistant, HCR36 solvent cement and cleaner or an equivalent should be used.

Pipe joints: fusion

Fusion joints are regarded as generally having the same chemical resistance as the material itself. However the joining process can leave a certain amount of residual stress within the joint.

Seals and seat materials

The working life of seals and seat materials is often different from that of the pipe system and greatly dependent on the working conditions involved.

The following table outlines their general resistance.

Seal and seat material	
Material type	Resistance
EPDM–Ethylene Propylene Rubber	Satisfactory resistance to most aggressive chemicals, not suitable for oils or fat
FPM–Fluorine Rubber	The most resistant of the elastomers to solvents
NBR–Nitrile Rubber	Not resistant to oxidising agents, but resists petrol and oils
PTFE–Polytetrafluoroethylene	Resists all the chemicals shown in tables

	Material °C Concentration	PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Acetaldehyde	technically pure	—			—			+	0	0	0	—		+	0	—	0			
	40%, aqueous solution	0	—		—			+	+	0	+	+	—	+	+	+	+		0	
Acetic Acid	technically pure,	0	—		—			+	+	0	+	0		0			—			
	glacial 10% aqueous	+	+	0	+	0	—	+	+	+	+	+	+	+	+	0	0	—		
Acetic Acid Anhydride	technically pure	—			—			+	0		+			0			—			
Acetone	technically pure	—			—			+	+	+	+	+		+	+	+	—			
Acrylonitrile	technically pure	—			—			+	+	+	+			+	+	0	0	—		
Adipic Acid	saturated, aqueous	+	+	0	—			+	+	+	+	+		+	+	+	+	+		
Alcoholic Spirits	app. 40% ethyl alcohol	+			—			+			+			+			+			
Allyl Alcohol	96%	0	—		—			+	+	+	+	+		0	0	0	0	—		
Aluminium Chloride	saturated	+	+	+	+	+	+	+	+	+	+	+	0	+	+	+	+	+	+	
Aluminium Sulphate	cold saturated, aqueous	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Ammonia	gaseous, tech. pure	+	+	+	—			+	+	+	+	+		+			+			
Ammonium Acetate	aqueous, all				—			+	+	+	+	+	+	+	+	+	+	+		
Ammonium Hydrogen Fluoride	50%, aqueous	+	+	0	—			+	+	+	+	+		+			+			
Ammonium Compounds: See Sodium																				
Amyl Acetate	technically pure	—			—			+	+	+	0	—		0			—			
Amyl Alcohol	technically pure	+	+	0	—			+	+	+	+	+		+	+	+	0			
Aniline	technically pure	—			—			0			0			—			0	0		
Aniline Hydrochloride	aqueous, saturated	+	0		—			+	+	0	+	0		+	+	+	0	—		
Antimony Trichloride	90%, aqueous	+	+		—			+	+	+	+	+		+			+			
Aqua Regia		+	0		—			—			0	—		—			0			
Arsenic Acid	80%, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Barium Hydroxide	aqueous, saturated	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Barium Salts	aqueous, all	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+		
Beef Tallow Emulsion, Sulphonated	usual commercial	+						+			+			—			+			
Beer	usual commercial	+	+	+	+	+	+	+	+	+	+	+		+			+			
Benzaldehyde	aqueous, saturated	—			—			+	+	+	+			+	+	+	+	+		
Benzene	technically pure	—			—			0	0		0	—		—			+			
Benzine	free of lead and aromatic compounds	+	+	+	—			+	+	0	0	—		—			+	+		
Benzoic Acid	aqueous, all	+	+	0	+	+	0	+	+	+	+	+	+	—			+	+	0	
Benzyl Alcohol	technically pure	0			—			+	+	0	+	+		+			0			
Bleaching Lye	12.5% active chlorine aqueous	+	+	0	0			0	—		0	—		+			+			
Borax	aqueous, all	+	+	0	0			+	+	+	+	+	+	+	+	+	+	+		
Boric Acid	aqueous, all	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Brine, Sea Water		+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bromine, Liquid	technically pure	—			—			—			—			—			+			
Butadiene	technically pure	+			—			+			+	+		—			0			
Butane	technically pure	+			+			+			+			—			+			
Butanediol	aqueous, 10%	+	0		—			+	+	+	+	+		+	+	+	+	+		
Butanol	technically pure	—	+	0	—			+	+	+	+	0		+	+	+	+	0		
Butyl Acetate	technically pure	—			—			+			0			+	—		0	—		
Butyl Phenol, P-Tertiary	technically pure	0	—		—			0			+			—			0			
Butylene Glycol	technically pure	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	0		
Butylene Liquid	technically pure	+			—			—			—			0			+			
Butyric Acid	technically pure	+			—			+	+	0	+			0			0			
Calcium Bisulphate	cold saturated, aqueous	+												+			+	+	+	
Calcium Chloride	saturated, aqueous, all	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Calcium Hydroxide	aqueous, saturated	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Calcium Hypochlorite	cold saturated, aqueous	+	+		+	+	—	+	+	+	+	+		+	+	+	+	+		
Calcium Nitrate	50%, aqueous	+	+		+	+	+	+	+	+	+	+		+	+	+	+	+		
Carbon Dioxide (Carbonic Acid)	technically pure, moist	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Carbon Disulphide	technically pure	—			—			0			0			—			+			
Carbon Tetrachloride	technically pure	—			—			—			—			—			+	+		
Caustic Soda Solution	up to 40%, aqueous	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	0	—		
(Sodium Hydroxide)	up to 50%, aqueous	+	+	+	+	+	+	+	+	+	+	+	+	+	+	0	—			
Chloral Hydrate	technically pure	—			—			+	+	+	0	—		0			0			
Chloric Acid	10%, aqueous	+	+	0	—			+	+		—			+	+	+	—			
Chlorine	moist, 97% gaseous	0			—			—			—			0			+			
	anhydrous, tech.	0			—			0	0	—	—			0			+			

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Guide to chemical resistance

	Material °C Concentration	PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Chlorine	pure liquid, technically pure	—			—			—			—			—			0			
Chlorine Water	saturated	0	0		0	0		0	0		0			0			0			
Chloroacetic Acid, Mono	50%, aqueous	+	+		—			+	+	+	+	+		0			—			
Chloroenzene	technically pure	—			—			0			+			—			—			
Chloroethanol	technically pure	—			—			+	+	+	+	+		0			—			
Chloroform	technically pure	—			—			—			0			—			0			
Chlorosulphonic Acid	technically pure	0			—			—			—			—			—			
Chrome Alum (Chromium Potassium Sulphate)	cold saturated, aqueous	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Chrome Acid	all, aqueous	+			—			0			0			0			+	0		
Cider		+			+	+		+			+			+			+			
Citric Acid	10% aqueous	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Copper Salts	all, aqueous	+	+	0	+	+	+	+	+	+	+	—		+	+	+	+	+	+	
Corn Oil	technically pure	0			0			+	+	0	+	0		0	—		+	+		
Cresol	cold saturated, aqueous	0			—			+	+		+			—			+			
Crotonic Aldehyde	technically pure	—			—			+			+			+			+			
Cyclohexane	technically pure	—			—			+	+	+	+			—			+			
Cyclohexanol	technically pure	+	+	+	—			+	+	+	+	0		—			+			
Cyclohexanone	technically pure	—			—			+	0	0	+	0		0			—			
Detergents (Washing Powders)	usual washing lathers	+	+	0	—			+	+	+	+	+		+	+	+	+	+		
Dextrine	(Starch Gum) usual commercial	+	+	+	+	+	+	+	+	+	+			+	+	+	+	+		
Dibutyl Ether	technically pure	—			—			0	—		0	—		—			+	0		
Dibutyl Phthlate	technically pure	—			—			+	0	0	+	0		0			0			
Dibutyl Sebacate	technically pure	—			—			+			+			+			+			
Dichloroacetic Acid	technically pure	+	+	0	—			+	+	0	+	0		+	+	+	0	—		
Dichloroacetic Acid Methl Esher	technically pure	—			—			+	+	+	+	+		+	+	0	—			
Dichlorobenzene	technically pure	—			—			0			0			—			+			
Dichloroethylene	technically pure	—			—			—			0			—			0			
Diesel Oil		+	+		0			+	0		0			—			+			
Diethylamine	technically pure	0			—						+			0						
Di-Isobutyl Ketone	technically pure	—			—			+	—		+	—		0			—			
Dimethyl Formamide	technically pure	—			—			+	+	0	+	+		0			+			
Dimethylamine	technically pure	0			—			+	0		+			0			—			
Ethyl Acetate	technically pure	—			—			+	0	0	+	0		0	0	0	—			
Ethyl Alcohol	technically pure, 96%	+	+	0	—			+	+	+	+	+		+	+	+	0	0		
Ethyl Alcohol + Acetic Acid	fermentation mixture	+	+	0	—			+	+	+	+			+	+	0	0	0		
Ethyl Benzene	technically pure	—			—						0	—		—			0			
Ethyl Chloride	technically pure	—			—			0			0			—			0			
Ethyl Ether	technically pure	—			—			0			+			—			—			
Ethylene Chloride	technically pure	—			—			0			0			0	0	—	+	0		
Ethylene Diamine	technically pure	0			—			+	+	+	+			+	+	+	0	—		
Ethylene Glycol	technically pure	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Ethylene Oxide	technically pure, liquid	—			—			—			0			0			—			
Fatty Acids >C6	technically pure	+	+	+	—			+	+	0	+	+		—			+			
Fatty Alcohol Sulphonates	aqueous	+	+	0	—			+	+	+	+	0		+	+	+	+	+		
Ferric Chloride	saturated	+	+	+	—			+	+	+	+	+	—	+	+	+	+	+	+	+
Ferric Nitrate	saturated	+	+	+	+	0	—	+	+	0	0	—		+	+	0	+	+	+	+
Ferrous Sulphate		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Fluosilicic Acid	32%, aqueous	+	+	+	+	+	+	+	+	+	+			0	0	—	—			
Formaldehyde	40%, aqueous	+	+		+	+	+	+	+	+	+			+	+	+	+	+		
Formamide	technically pure	—			—			+	+	+	+	+		+			0			
Formic Acid	technically pure	+	0	—	—			+	+	+	+	—		+	+	+	—			
Fruit Juices		+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
Fuel Oil		+	0		0			0	—		0	—		—			+	+		
Furfuryl Alcohol	technically pure	—			—			+	+	+	+	0		0			—			
Gelatine	all, aqueous	+	+		+	+	+	+	+	+	+	+		+	+		+			
Glucose	all, aqueous	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Glycerine	technically pure	+	+	+	+	+	0	+	+	+	+	+	+	+	+	+	+	0		
Glycocol	10%, aqueous	+	+		+			+	+		+			+	+		+			
Glycolic Acid	37%, aqueous	+			+	+		+	+	+	+			+			+			
Heptane	technically pure	+			+	—		+		0	+	0		—			+	+		

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		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Hexane	technically pure	+			+	–		+		0	+	0		–			+	+		
Hydrazine Hydrate	aqueous	+			–			+	+	+	+	+		+			+			
Hydrobromic Acid	50%, aqueous	+	+	+	+	+		+	+	+	+	+		+	+	0	+	+	–	
Hydrochloric Acid	up to 10%, aqueous	+	+	0	+	+	0 –	+	+	+	+	0		+	+	+	+	+		
	up to 36%, aqueous	+	+	0	–			+	+	+	+	–		+	0	–	+	–		
Hydrocyanic Acid	technically pure	+	+	0	+	+		+	+	+	+	+		+	0		+			
Hydrofluoric Acid	up to 10%, aqueous	+	0	0	+	+		+	+	0	+	+		–			+	0		
	40%, aqueous	+			–			+	+	0	+	+		–			+			
	70%, aqueous	+			–			+		0	+			–			+			
Hydrogen	technically pure	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+
Hydrogen Chloride	tech. pure, gaseous	+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Hydrogen Peroxide	3%, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	0	–	+	–		
	30%, aqueous	+	+		–			+	+	+	+	0		0	–		+	0		
	90%, aqueous				–			+	–		–			0			0			
Hydrogen Sulphide	technically pure	+	+	+	+			+	+	0	+	+		+	0	–	+	0		
Iodine Solution	6.5% iodine in ethanol	–			–			+		0	+			+			+			
Iron Salts	all, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+	+	
Iso-Octane	technically pure	+			–			+		0	+	0		–			+			
Isopropyl Alcohol	technically pure	+			–			+	+	+	+	+	+	+	+	+	+	+		
Isopropyl Ether	technically pure	–			–			0	–		0	–		–			–			
Lactic Acid	10%, aqueous	+	0	–	+	0 –		+	+	+	+	+	+	0	0	0	+	0		
Lanolin	technically pure	+	0		+	+	+	+	+	+	+	+		0	–		+	+		
Lead Acetate	aqueous, saturated	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+		
Linseed Oil	technically pure	+	+	0	+			+	+	+	+	+	+	0	–		+	+		
Lubricating Oils		+	+	+	0			+	+	0	0			–			+	+	–	
Magnesium Salts	all, aqueous	+	+	0	+	+		+	+	+	+	+	+	+	+	+	+	+	+	
Maleic Acid	cold saturated, aqueous	+	+	0	+			+	+	+	+	+		0	–		+	+		
Mercury	pure	+	+	+	+			+	+	+	+	+		+	+	+	+	+		
Mercury Salts	cold, saturated, aqueous	+	+	0	+			+	+	+	+	+		+	+	+	+	+		
Methane (Natural Gas)	technically pure	+			+			+			+			–			+			
Methanol	all	+	+	0	–			+	+	+	+	+		+	+	+	0	0		
Methyl Acetate	technically pure	–			–			+			+	0		0			–			
Methyl Amine	32%, aqueous	0			+			+			+			+			+			
Methyl Bromide	technically pure	–			–			0			–			–			0			
Methyl Chloride	technically pure	–			–			0			–			0			–			
Methylene Chloride	technically pure	–			–			0			0			–			0			
Methyl Ethyl Ketone	technically pure	–			–			+	0	–	+	0		+	0		–			
Milk		+	+	+	+	+	+	+	+	+	+	+	+	+			+			
Molasses		+	+	0	+	+	0	+	+	+	+	+		+	+	+	+	+		
Monochloroacetic Acid Ethyl Ester	technically pure	0			–			+	+	+	+	+		+			0			
Monochloroacetic Acid Methyl Ester	technically pure	0			–			+	+	+	+	+		+			0			
Morpholin	technically pure	–			–			+	+	+	+	+		0			+			
Naphthalene	technically pure	–			–			+	0		+			–			+	+		
Nickel Salts	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Nitric Acid	5%, aqueous	+	+	+	+	0	–	+	+	+	+	0		+	+	0	+	0		
	up to 40%, aqueous	+	+	0	–			0	–		0	–		+	+	0	+	+		
	65%, aqueous	0	0	–	–			0	–	–	–			–			+	–		
Nitrobenzene	technically pure	–			–			+	+	0	+	+		–			0			
Nitroluene (O-, M-, P-)	technically pure	–			–			+	+	0	+	0		–			0	–		
Nitrous Gases	diluted, moist, anhydrous	+		0	0			+	+	+	+	–		+	+	0	+	+		
Oleic Acid	technically pure	+	+	+	+	0	–	+	+	0	+	0		–			+	–		
Olive Oil		+	+	+	+			+	+	0	+	+		–			+	+		
Oxalic Acid	cold saturated, aqueous	+	+	+	+	+		+	+	+	+	+		0	0	0	+	0		
Oxygen	technically pure	+	+	+	+	+	+	+	+	0	+	0		+	+	+	+	+	+	+
Ozone	cold saturated, aqueous	+	+		–			0	–		0	–		+	0	–	+	–		
Palmitic Acid	technically pure	+			–			0			–			0	–		+	–		
Palm Oil, Palm Nut Oil		+	–					+	+	0	+	0		+	0	–	+	+		
Paraffin Emulsions	usual comm., aqueous	+	+		–			+	+	0	+	0		–			+	+		
Paraffin Oil		+	+	0	+	+	+	+	+	+	+	0		–			+	+		
Perchloric Acid	10%, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		

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Guide to chemical resistance

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		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Perchloric Acid	70%, aqueous	0			—			+	0	—	0	—		+	+	+	+	+		
Perchloroethylene (Tetrachloroethylene)	technically pure	—			—			0			0			—			+	+		
Petroleum	technically pure	+			—			+	+	0	+	0		—			+	0		
Petroleum Ether	technically pure	+	+	+	—			+	0	0	+	0		—			+	0		
Petroleum Jelly	technically pure	0	—		—			0	—		+	0		—			+	+	+	+
Phenol	up to 90%, aqueous	0			—			+	+	0	+	+		—			+	—		
Phenylhydrazine	technically pure	—			—			0			0			0			+	0		
Phenylhydrazine Hydrochloride	aqueous	0			—			0			+	0		+	+	0	+	0		
Phosgene	gaseous, technically pure	+	0	0	—						0			+	+	+	+	0		
Phosphoric Acid	85%, aqueous	+	+	+	+	+	0	+	+	0	+	+	+	+	+	+	+	+	0	
Phosphorous Pentoxide	technically pure	+	+		+	+		+	+		+			+	+	+	+	+		
Photographic Developer	usual commercial	+	+	0	+	+	0	+	+	0	+			+	+		+			
Photographic Emulsion		+	+		+	+		+	+		+			+	+		+			
Photographic Fixer	usual commercial	+	+	0	+	+	0	+	+		+			+	+		+			
Phthalic Acid	saturated, aqueous	+	0	—	—			+	+	+	+	+		+	+	0	—			
Picric Acid	1%, aqueous	+			—			+			+			+	+	0	+	+		
Potash (Potassium Carbonate)	cold saturated, aqueous	+	+		+	+	+	+	+		+	+		+	+		+			
Potassium Permanganate	cold saturated, aqueous	+	+	0	—			+	+	0	+	+		+	+	+	+	+		
Potassium Compounds: See Sodium																				
Propane	technically pure, liquid	+			+			+			+			—			+			
Propanol, N- And Iso-	technically pure	+	0	0	—			+	+	+	+	+	+	+	+	+	+	+		
Propionic Acid 50%, Aqueous		+	+	0	—			+	+	+	+	+		+	+	+	+	0		
Propylene Glycol	technically pure	+	+	+	0			+	+	+	+	+		+	+	+	+	0		
Propylene Oxide	technically pure	0			—			+			+			+			—			
Pyridine	technically pure	—			—			+	0	0	0	0		+	0	—	0	—		
Silicone Oil		+	0	—	+			+	+	+	+	+	+	0	—		+	+		
Silver Salts	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Soap Solution	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Acetate	all, aqueous	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Sodium Benzoate	cold saturated, aqueous	+	+	0	—			+	+	+	+	+		+	+	+	+	+		
Sodium Bicarbonate	cold saturated, aqueous	+	+	+				+	+	+	+	+		+	+	+	+	+		
Sodium Bisulphate	10%, aqueous	+	+	0				+	+	+	+	+		+	+	+	+	+	+	
Sodium Bisulphite	all, aqueous	+	0	—	+	+	+	+	+	+	+	+		+	+	+	0	—		
Sodium Bromate	all, aqueous	+	0		+	+	+	+	0		+			+	+	+	+	+		
Sodium Bromide	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Carbonate (Soda)	cold saturated, aqueous	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Sodium Chlorate	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Chloride	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+	+	
Sodium Chlorite	diluted, aqueous	0						+			+	0		+	+	+	+	+		
Sodium Chromate	10%, aqueous	+	+	0	+	+	+	+			+			+	+	+	+	+		
Sodium Disulphate	all, aqueous	+	+	0				+			+			+	+	+	+	+		
Sodium Dithionite (Hyposulphite)	up to 10%, aqueous	+	+	0				+	+	+	+	+		+	+	+	+	+		
Sodium Fluoride	cold saturated, aqueous	+	+		+	+	+	+			+			+	+	+	+	+		
Sodium Hydroxide See Caustic Soda																				
Sodium Hypochlorite	aqueous (12.5% active)	+	+	0	—			0	—		0	—		+			+			
Sodium Iodide	all, aqueous	+	+	0	+	+	+	+			+			+	+	+	+	+		
Sodium Nitrate	cold saturated, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		
Sodium Nitrite	cold saturated, aqueous	+			+	+	+	+			+			+	+	+	+	+		
Sodium Oxalate	cold saturated, aqueous	+	+	0				+			+			+			+			
Sodium Persulphate	cold saturated, aqueous	+	+	0				+	+	+	+	+		+	+	+	+	+	+	
Sodium Phosphate	cold saturated, aqueous	+	+	0	+	—		+	+	+	+	+	+	+	+	+	+	+		
Sodium Silicate	all, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	+	+		
Sodium Sulphate	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	0	+	+		
Sodium Sulphide	cold saturated, aqueous	+	+	0	+	+	+	+	+	+	+	+		+	+	+	—			
Sodium Sulphite	cold saturated, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		
Sodium Thiosulphate	cold saturated, aqueous	+	+	0	+	—		+	+	+	+	+		+	+	+	+	+		
Spirits (Brandy)	usual commercial	+	+	+	—			+	+	+	+	+		+	+	+	+	+		
Stannous Chloride	cold saturated, aqueous	+	0	0	+	+		+	+	+	+	+		+	0	—	+	+		
Starch Solution	all, aqueous	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+		
Stearic Acid	technically pure	+	+	+	+	+		+		0	+	0		+	+	0	+	0		

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Material °C Concentration		PVCu			ABS			PE			PP			EPDM			FPM			
		20	40	60	20	40	60	20	40	60	20	60	100	20	40	60	20	60	100	120
Succinic Acid	all, aqueous	+	+	+				+	+	+	+	+		+	+	+	+	+		
Sugar Syrup	usual commercial	+	+	0	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Sulphur	technically pure	0	–		–			+	+	+	+	+		–			+	+		
Sulphur Dioxide	all, moist,	+	+	0	–			+	+	+	+	+		+	+	0	+	–		
	technically pure, liquid	–			–			–			–			0			0			
Sulphur Trioxide		–			–			–			–			–			+			
Sulphuric Acid	up to 30%, aqueous	+	+	0	+	+	0	+	+	+	+	+		+	+	+	+	+	–	
	up to 50%, aqueous	+	+	+	+	0	–	+	+	+	+	+		+	+	0	+	+		
	up to 80%, aqueous	+	+	+	–			+	+	0	+	0		+	0	–	+	0		
	up to 90%, aqueous	+	+		–			0			0			0	–		+			
	up to 96%, aqueous	+	+	0	–			–			–			–			+			
Sulphurous Acid	saturated, aqueous	+	+	0	–			+	+	+	+	+		+	0	–	+	0		
Tallow	technically pure	+	+	+	+	+		+	+	+	+	+		+	+	+	+	+		
Tannic Acid	all, aqueous	+			+	+		+	+	+	+	+		+			+			
Tartaric Acid	all, aqueous	+	+	0	+	+		+	+	+	+	+		+	0	–	+	+		
Tetrachloroethane	technically pure	–			–			0			0			–			0			
Tetraethyl Lead	technically pure	+			–			+			+			0			+			
Tetrahydrofuran	technically pure	–			–			0			–			–			–			
Thionyl Chloride	technically pure	–			–			–			–			–			–			
Toluene	technically pure	–			–			0	–		0	–		–			0	–		
Tributylphosphate	technically pure	–			–			+	+	+	+	+		+			–			
Trichloroethylene	technically pure	–			–			–			0			–			+			
Trichloroacetic Acid	50%, aqueous	+	0		–			+	+	+	+	+		0			–			
Trichloroethane (Methylchloroform)	technically pure	–			–			0			0			–			+			
1,2,2-Trifluoroethane (Freon 113)	technically pure	+	+											–			+			
Tricesyl Phosphate	technically pure	–			–			+	+	+	+	0		–			–			
Triethanolamine	technically pure	0			–			+	+	+	+			–			+			
Triethylamine	technically pure				+									–						
Trioctyl Phosphate	technically pure	–			–			0			+			–			–			
Turpentine Oil	technically pure	+	0		–			0	0	0	–			–			+	+		
Urea		+	+	0	–			+	+	+	+	+		+	+	+	+	+		
Urine		+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		
Vegetable Oils And Fats		+	0		+	+		+	0		+	0		–			+	+		
Vinegar		+	+	+	+	+	+	+	+	+	+	+		+	0	–	0	–		
Vinyl Acetate		–			+	+	0				+	0		+			+			
Vinyl Chloride		–			–									0			+			
Waste Gases, Alkaline		+	+	+	–			+	+	+	+	+		+	+	+	+	+	–	
Waste Gases Containing:																				
- Carbon Oxides	all	+	+	+				+	+	+	+	+		+	+	+	+	+	+	
- Hydrochloric Acid	all	+	+	+				+	+	+	+	+		+	+	+	+	+	+	
- Hydrogen Fluoride	traces	+	+	+				+	+	+	+	+		+	+	0	+	+		
- Nitrous Gases	traces	+	+	+				+	+	+	+	0		+	+	+	+	+	0	
- Sulphur Dioxide	traces	+	+	+				+	+	+	+	+		+	+	+	+	+		
- Sulphur Trioxide	traces	+	+	+				+	+	+	+	0		+	+	+	+	+		
- Sulphuric Acid	all	+	+	+				+	+	+	+	0		+	+	+	+	+		
Water, Condensed		+	+	0	+	+	+	+	+	+	+	+		+	+	0	+	+		
Water, Distilled, De-Ionised		+	+	+	+	+	+	+	+	+	+	+		+	+	0	+	+	+	+
Water, Drinking		+	+	+	+	+	+	+	+	+	+	+		+	+	0	+	+	+	
Wax Alcohol	technically pure	+	+	+	–			0	–		0	–		–			+	+		
Wetting Agents	up to 5%, aqueous	+	+	0	+			+			+	+		+			+			
Wines, Red And White	usual commercial	+			+	+	+	+	+	+	+	+		+			+			
Wine Vinegar	usual commercial	+	+	+	+	+		+	+	+	+	+		+	0		0	–		
Yeast	all, aqueous	+	+		+			+	+	+	+	+		+	+		+			
Xylene	technically pure	–			–			–			–			–			+	–		
Zinc Salts	all, aqueous	+	+	0	+	+		+	+	+	+	+		+	+	+	+	+		

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The data in the tables is based on information from the raw material suppliers, gained using direct contact between the chemical and the unprocessed raw material. The resistance of any of the finished products against these media has not been verified. There is no given or intended legally binding assurance of material properties or of suitability for a specific purpose. Materials must be tested under actual service conditions to determine the suitability for a specific application.

Engineering data & flange tables

Volumetric rate of flow (liquid)							
litre	litre per minute l/min	cubic metre per hour m ³ /h	cubic foot per hour ft ³ /h	cubic foot per minute ft ³ /m	uk gallon per minute gal/min	us gallon per minute gal/min	us barrel/d
1	60	3.6001	127.136	2.1189	13.1986	15.8508	543.456
0.0167	1	0.0600	2.1189	0.3532	0.22	0.2642	9.0576
0.2778	16.6666	1	35.3147	0.5886	3.6662	4.4029	150.956
0.0079	0.4719	0.0283	1	0.1067	0.1038	0.1247	4.2746
0.4719	28.316	1.6990	60	1	6.2288	7.4805	256.475
0.0758	4.546	0.2728	9.6326	0.1605	1	1.201	41.1754
0.0631	3.7853	0.2271	8.0208	0.1337	0.8327	1	4.2857
0.0018	0.1104	0.0066	0.2339	0.0039	0.0243	0.0292	1

Pressure and liquid head									
① bar	kilogram force per square centimetre ② kgf/cm ²	pound force per square inch ③ lbf/in ²	④ atm	foot of water ⑤ ft h ₂ o	inch of water in h ₂ o	metre of water m h ₂	centimetre of mercury cm hg	inch of mercury in hg	⑥ mm hg
1	1.0197	14.5038	0.9869	33.4553	401.463	10.1972	75.0062	29.530	29.530
0.9807	1	14.2233	0.9878	32.8084	393.701	10	73.556	28.959	28.959
0.0689	0.0703	1	0.0609	2.3067	27.68	0.7031	5.1715	2.036	2.036
1.0133	1.0332	14.6959	1	33.889	406.782	10.3323	76.0	29.9213	29.9213
0.0299	0.0305	0.4335	0.0295	1	12	0.3048	2.242	0.8827	0.8827
0.0025	0.0025	0.0361	0.0025	0.0833	1	0.0254	0.1868	0.0734	0.0734
0.0981	0.1000	1.422	0.0968	3.2808	39.3701	1	7.3556	2.896	2.896
0.0133	0.0136	0.1934	0.0132	0.4461	5.3524	0.136	1	0.3937	0.3937
0.0339	0.0345	0.4911	0.0334	1.133	13.5951	0.3453	2.54	1	1
0.0013	0.0014	0.0193	0.0013	0.446	0.5352	0.0136	0.1	0.0394	0.0394

① 1 bar = 105N/m² ② Technical (metric) atmosphere (at) ③ Often denoted non-technically as psi ④ International standard atmosphere ⑤ At density 1g/cm³ ⑥ Also known as torr

Dimensions of flanges (mm)														
flange size			bs4504 pn6				bs4504 pn10				bs4504 pn16			
inch	n.b.mm	nominal	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts
½"	20	15	55	80	M10	4	65	95	M12	4	65	95	M12	4
¾"	25	20	65	90	M10	4	75	105	M12	4	75	105	M12	4
1"	32	25	75	100	M10	4	85	115	M12	4	85	115	M12	4
1¼"	40	32	90	120	M12	4	100	140	M16	4	100	140	M16	4
1½"	50	40	100	130	M12	4	110	150	M16	4	110	150	M16	4
2"	63	50	110	140	M12	4	125	165	M16	4	125	165	M16	4
2½"	75	65	130	160	M12	4	145	185	M16	4	145	185	M16	4
3"	90	80	150	190	M16	4	160	200	M16	8	160	200	M16	8
4"	110	100	170	210	M16	4	180	220	M16	8	180	220	M16	8
5"	140	125	200	240	M16	8	210	240	M16	8	210	240	M16	8
6"	160	150	225	265	M16	8	240	285	M20	8	240	285	M20	8
8"	225	200	280	320	M16	8	295	340	M20	8	295	340	M20	12
10"	280	250	335	375	M16	12	350	395	M20	12	355	405	M24	12
12"	315	300	395	440	M20	12	400	445	M20	12	410	460	M24	12
flange size			bs10 table d				bs10 table e				asa 150			
inch	n.b.mm	nominal	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts	pcd	od	bolt	no bolts
½"	20	15	67	95	½"	4	67	95	½"	4	67	95	½"	4
¾"	25	20	73	102	½"	4	73	102	½"	4	73	102	½"	4
1"	32	25	83	114	½"	4	83	114	½"	4	83	114	½"	4
1¼"	40	32	87	121	½"	4	87	121	½"	4	87	121	½"	4
1½"	50	40	98	133	½"	4	98	133	½"	4	98	133	½"	4
2"	63	50	114	152	⅝"	4	114	152	⅝"	4	114	152	⅝"	4
2½"	75	65	127	165	⅝"	4	127	165	⅝"	4	127	165	⅝"	4
3"	90	80	146	184	⅝"	4	146	184	⅝"	4	146	184	⅝"	4
4"	110	100	178	216	⅝"	4	178	216	⅝"	4	178	216	⅝"	4
5"	140	125	210	254	⅝"	8	210	254	⅝"	8	210	254	⅝"	8
6"	160	150	235	279	⅝"	8	235	279	⅝"	8	235	279	⅝"	8
8"	225	200	292	337	⅝"	8	292	337	⅝"	8	292	337	⅝"	8
10"	280	250	356	406	¾"	8	356	406	¾"	8	356	406	¾"	8
12"	315	300	406	457	¾"	12	406	457	¾"	12	406	457	¾"	12

Notes

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