

V5.0 | PP-R Pipe & Fittings

formül[®]

PRODUCT
CATALOGUE

КАТАЛОГ
ПРОДУКЦИИ

كتالوك المنتجات



Norms in Use

TS-DIN 1988

Drinking water line installation.

TS-DIN 2999

Whitworth pipe threads for tubes and fittings.

TS-DIN 4109

Sound insulation in building construction.

TS-DIN 8077

Polypropylene (PP-R) pipes dimensions.

TS-DIN 8078

Polypropylene (PP-R) pipes general quality requirements and testing.

TS-DIN 16928

Pipe connections and components - Pipes of thermoplastic materials; pipe joints, elements for pipes, laying; general directions.

TS-DIN 16962 (6-9)

Pipe joints and elements for polypropylene (PP-R) pressure pipelines, types 1 and 2; injection moulded elbows for socket-welding, dimension.

TS-DIN 16962.5

Pipe joints and components of polypropylene (PP-R) for pipes under pressure, Part 5: General quality requirements, testing.

TS-DVS 2207.11

Welding regulations for plastic pipes.

TS-DVS 2208.1

Machines and devices for welding thermoplastic pipes.

TS-EN ISO 15874 -2-3

Plastics piping systems for hot and cold water installations polypropylene (PP-R)

TSE K 28

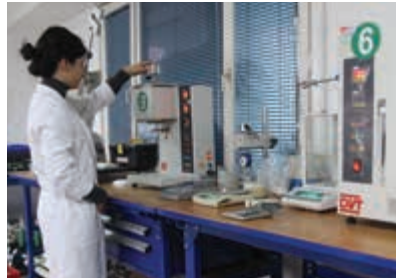
Multi-layer glass fiber pipes from Polypropylene (PP) - pressure pipes used for hot and cold water systems.

TS 9937

Plastic Pipes from Polypropylene (PP) - general purpose.

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*The choice of world
since 1990*



Our Company, which is located in Istanbul Turkey, is a major manufacturer and exporter of PP-R Pipes and Fittings for cold and hot water supply systems.

Our Company was established in 1990 for the purpose of mold construction and manufacturing. In course of time, having several years of experience and expertise, has begun to produce also the pipes and fittings in PP-R and PE-X systems, and the brass inserts for the fittings. Step by step, following the developing technology, has reached currently to the most extensive product range in the sector.

We ensure our clients high quality products, project-specific services and solutions as well as successful organization, approved by the certificates ISO 9000, CE, TSE, DVGW, SKZ, TZW, GOST, UkrSEPRO and other national certificates.

Becoming leader company in its field, several projects and R&D works have been successfully completed by professional staff in our laboratory and by collaboration of different universities. As a result of this work, our company is among few companies in the sector with patents, utility models and model certificates, including giving know-how service to the new investors.

Our products have become a popular and requested brand in Africa, CIS countries, Far and Middle East within short time. We are proud of exporting our products to more than 56 countries as a result of accumulation of experience, using latest technology, environment friendly systems and meeting the customer expectations. Our highly qualified and well experienced team will be happy to serve you....



Material:

PP Random Copolymer (PPR-C Type 3)

Pipe&fittings are produced using PP Random Copolymer (PPR-C Type 3).

PP Random Copolymer (PPR-C Type 3) is commonly used in drinking and hot water, floor- and radiator heating systems as well as in every kind of liquid distribution systems. (Please see chemical resistance table for different kind of liquid.)

PP Random Copolymer (PPR-C Type 3) has a lot of advantages over other plastics such as ; long life duration and resistance to pressure and heat, better flexibility, high acoustic and thermal insulation, hygiene etc.

PP Random Copolymer (PPR-C Type 3) confirms the requirements of German standards DIN 8077 and 8077.

Physical Properties

Properties	Testing Methods	Unit	Values
Density, at 23 C°	ISO 11 83	g/cm ³	0,9
Melt flow index (MFI)			
MFI 190 C°/5 kg	ASTM D 1238	g/10 min	0,7
MFI 230 C°/2, 16 kg	ISO 1133	g/10 min	0,2-0,5
MFI 230 C°/5 kg	DIN 53 735	g/10 min	0,6-1,2
Thermal conductivity at 23C°	DIN 52 612	W/m.K	0,23

Thermal Properties

Properties	Testing Methods	Unit	Values
Melting point	Polarisationmicroscop	C°	146
Subjective heat	Calorimeter	Kj/kgK	1,73
Coefficient of linear extension	ASTM D 696	mm/m(C°)	0,15
Deflection temperature under load			
1,8 N/mm ² 0,45	ISO 75	C°	44
N/ mm ²	DIN 53 461	C°	72
Brittleness temperature	ASTM D 746	C°	-13
VICAT softening point	ASTM D 1525		
(1 kg)	ISO 306	C°	130
(5 kg)	DIN 53 460	C°	60

Mechanical Properties

Properties	Testing Methods	Unit	Values	
Yield strength (23 C°)	ISO 527 DIN 53 455			
At 50mm/min		N/ mm ²	25	
At 100mm/min		N/ mm ²	27	
Elongation at yield (23 C°)				
At 50 mm/min		%	12	
At 100 mm/min		%	13	
Breaking strength at 23 C°				
At 50 mm/min		N/ mm ²	34	
At 100mm/min		N/ mm ²	33	
Elongation at break 23C°				
At 50mm/min	%	>500		
At 100mm/min	%	>500		
Flexural modulus at 23C°	ASTM D 790	N/ mm ²	670	
Stiffness modulus, torsion test at 23 C°	DIN 53 447	N/ mm ²	185	
Hardness (shore D)	ASTM D 2240 ISO 86 DIN 53 505		60	
Charpy impact strength (notched) at 23 C°	DIN 53 453	kJ/ m ²	15	
at 0 C°	ISO 179	kJ/ m ²	5	
Charpy impact strength (unnotched) at 23 C°	DIN 53 453	kJ/ m ²	No break	
(0 C°)	ISO 179	kJ/ m ²		

Pipe Dimensions and Tolerances according to DIN 8077

SDR 11 (PN 10)

Outside Ø mm	Tolerance mm	Thickness mm	Tolerance mm	Inside Ø mm	Average Weight kg/m	In" inches
20	+0.3/-0	1,9	+0.3/-0	16,20	0,103	1/2"
25	+0.3/-0	2,3	+0.4/-0	20,40	0,152	3/4"
32	+0.3/-0	2,9	+0.4/-0	26,20	0,244	1"
40	+0.4/-0	3,7	+0.5/-0	32,60	0,382	1 1/4"
50	+0.5/-0	4,6	+0.6/-0	40,80	0,593	1 1/2"
63	+0.6/-0	5,8	+0.7/-0	51,40	0,943	2"
75	+0.7/-0	6,8	+0.8/-0	61,40	1,335	2 1/2"
90	+0.9/-0	8,2	+1.0/-0	73,60	1,906	3"
110	+1.0/-0	10,0	+1.1/-0	90,00	2,842	4"
125	+1.2/-0	11,4	+1.3/-0	102,20	3,660	5"

SDR 7,4 (PN 16)

Outside Ø mm	Tolerance mm	Thickness mm	Tolerance mm	Inside Ø mm	Average Weight kg/m	In" inches
20	+0.3/-0	2,8	+0.4/-0	14,40	0,139	1/2"
25	+0.3/-0	3,5	+0.5/-0	18,00	0,217	3/4"
32	+0.3/-0	4,4	+0.6/-0	23,20	0,343	1"
40	+0.4/-0	5,5	+0.7/-0	29,00	0,536	1 1/4"
50	+0.5/-0	6,9	+0.8/-0	36,20	0,840	1 1/2"
63	+0.6/-0	8,6	+1.0/-0	45,80	1,322	2"
75	+0.7/-0	10,3	+1.2/-0	54,40	1,883	2 1/2"
90	+0.9/-0	12,3	+1.4/-0	65,40	2,710	3"
110	+1.0/-0	15,1	+1.7/-0	79,80	4,050	4"
125	+1.2/-0	17,1	+1.9/-0	90,80	5,215	5"

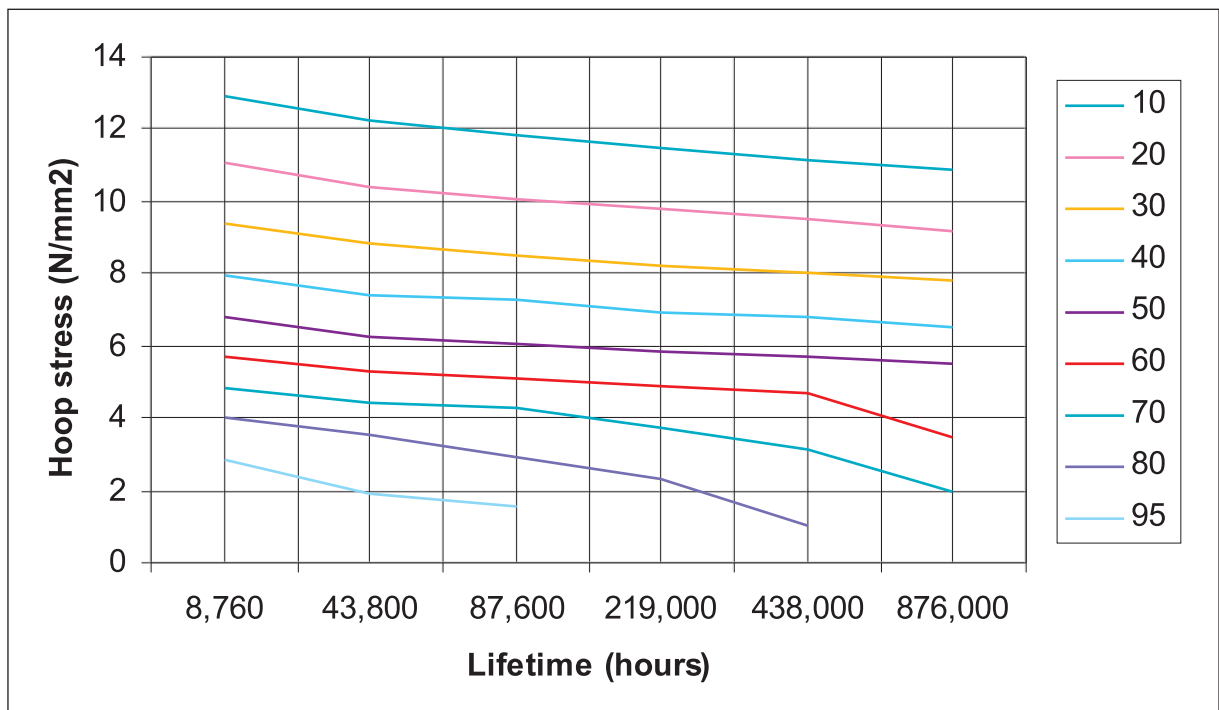
SDR 6 (PN 20)

Outside Ø mm	Tolerance mm	Thickness mm	Tolerance mm	Inside Ø mm	Average Weight kg/m	In" inches
20	+0.3/-0	3,4	+0.5/-0	13,20	0,163	1/2"
25	+0.3/-0	4,2	+0.6/-0	16,60	0,247	3/4"
32	+0.3/-0	5,4	+0.7/-0	21,20	0,406	1"
40	+0.4/-0	6,7	+0.8/-0	26,60	0,631	1 1/4"
50	+0.5/-0	8,3	+1.0/-0	33,40	0,979	1 1/2"
63	+0.6/-0	10,5	+1.2/-0	42,00	1,576	2"
75	+0.7/-0	12,5	+1.4/-0	50,00	2,230	2 1/2"
90	+0.9/-0	15,0	+1.7/-0	60,00	3,300	3"
110	+1.0/-0	18,3	+2.0/-0	73,40	4,795	4"
125	+1.2/-0	20,8	+2.2/-0	83,40	6,125	5"

Operating Life According to DIN 8078

Temperature (C°)	Life (years)	Stress (Mpa)
20	50	9,5
40	50	6,8
60	50	4,7
70	50	3,2
80	25	2,5
95	5	1,85





Insulation

Under the same condition, PP-R pipes require less insulation compared to other types of pipes due to their thickness. But, some insulation is required against freezing and heat loss in cold and hot climates. These are caused by factors such as sun light, rain, snow when the pipes are laid outside. Another advantage of the insulation layer is the protection that it provides against impacts.

Insulation Thickness

Pipe Outer Diameter	Available Thickness Acc.to 2 HAVO = 0,035 W/mK	Insulation Thickness in Formul Pipes = 0,035 W/mK = 0,04 W/mK	
		= 0,035 W/mK	= 0,04 W/mK
20x3,4 mm	20 mm	18,2 mm	22,7 mm
25x4,2 mm	30 mm	27,5 mm	34,7 mm
32x5,4 mm	30 mm	27,3 mm	34,5 mm
40x6,7 mm	40 mm	36,5 mm	46,1 mm
50x8,3 mm	50 mm	45,7 mm	57,7 mm
63x10,5 mm	63 mm	57,6 mm	71,9 mm
75x12,5 mm	75 mm	66,5 mm	85,1 mm

Polypropylene Pipe with Aluminum Foil

This pipe consists of three layers: the inner pipe and the outer coat are made of PP-R Type 3 with an aluminum layer inside. The layer is combined with wrapped welding. The layer has a special and both sided PP-R film on it to maintain the mechanical connection between the aluminum and PP-R layers.

Characteristics

- low thermal expansion
- oxygen impermeability
- low heat loss
- high resistance to pressure and heat
- easy forming, installation and application
- hygienic
- resistance to chemicals
- low pressure loss due to the smoothness

Pipe Dimensions

Inner Pipe		Aluminum	Outer Coat	
Outer Diameter (mm)	Wall Thickness (mm)	Thickness (micron)	Outer Diameter (mm)	Thickness (mm)
16	2,7	200	17,8	0,5
20	3,4	200	21,8	0,5
25	4,2	200	26,8	0,5
32	5,4	200	33,8	0,5
40	6,7	200	41,8	0,5

Operating Conditions (according to inner pipe)

Temperature (C°)	Life(years)	Stress(Mpa)
20	50	9,5
40	50	6,8
60	50	4,7
70	50	3,2
80	25	2,5
95	5	1,85

Oxygen Impermeability

Oxygen penetration reduces the operating life by corroding the radiator and the heater device. Oxygen diffusion from the atmospheric air is one of the most common ways of oxygen penetrating into the system. Plastic pipes do not prevent this penetration. The aluminum layer increases the life of the radiator and the heater device by preventing.

Thermal Extension in PPR Pipes

The PP-R pipes have an extension coefficient that is 11 times more than the metal pipes. So, this characteristic should be taken into consideration during installations.

Calculation of thermal extension is as follows:

$$DL = L * DT * \Delta$$

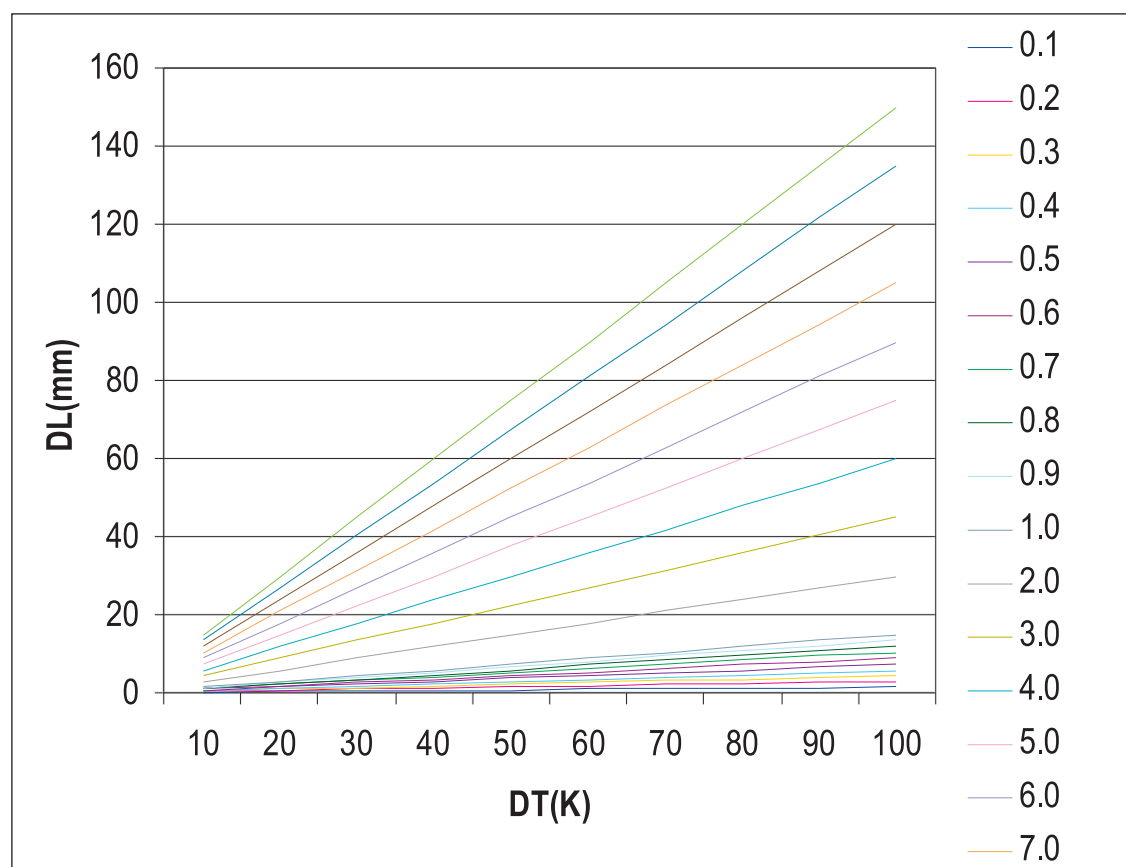
where

DT : Temperature difference in Kelvin (K) or Celsius (C°)

DL : Linear Extension in mm

L : Pipe length in m

Δ : Linear extension coefficient. The value of Δ is $1,5 * 10^{-4} (K^{-1})$ for PP-R tubes.

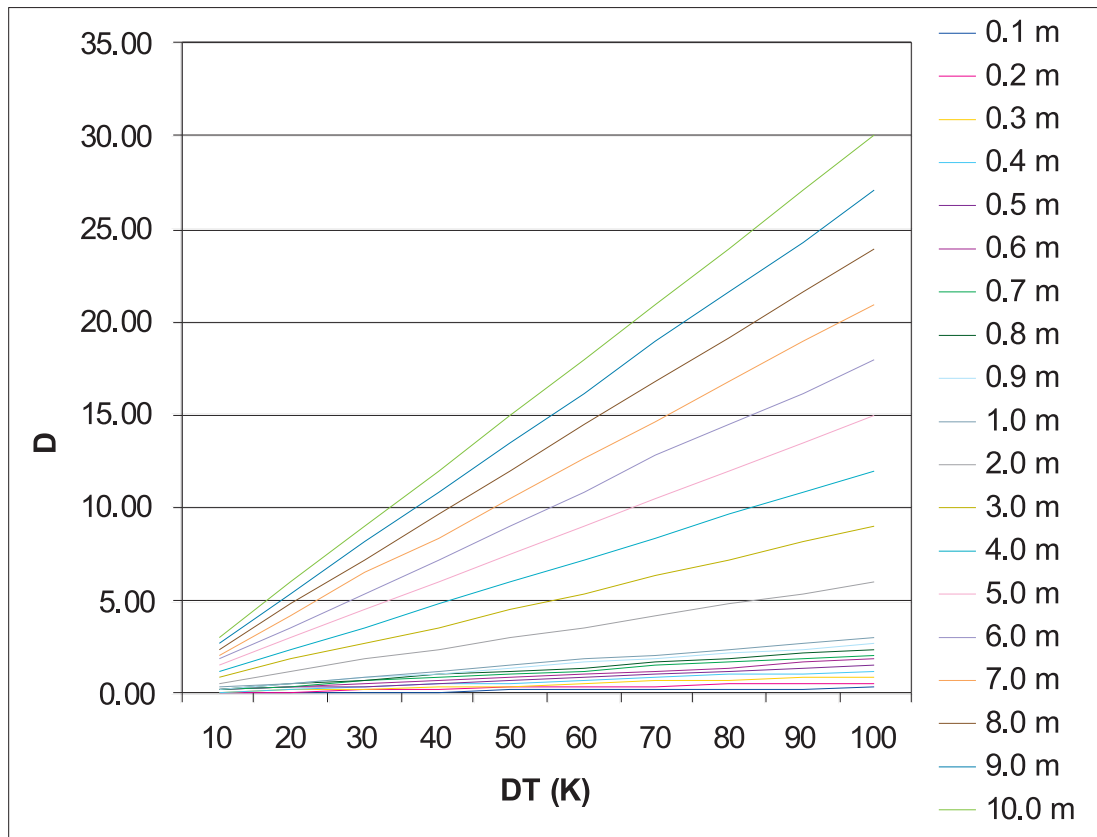


PP-R pipe with an aluminum foil has lower extension coefficients.

The extension is calculated as follows:

$$DL = L * DT * \Delta$$

The approximate value for Δ in PP-R pipe with aluminum foil is $0,3 * 10^{-4}$ (K⁻¹).



Welding Technique

The quality of an installation depends on the tightness, stability and lifetime of its connections. Fusion welding technique is safe because parts made of polypropylene create a homogenous connection, within this process. When the welded joint cools down, it can be fully loaded. The resulting joints are very reliable, and they are as strong as the pipe itself. The pipe may even break before the socket welded joint under tension.

Welding takes only a few seconds. After cutting the pipe perpendicularly to its axis, both the pipes and the fittings (these must be clean if not please clean it with a cloth or alcohol-water solution) are heated with the welding machine (generally up to 260°C +/- 10°C) and they are joined without twisting. For proper connections please follow the table given below.

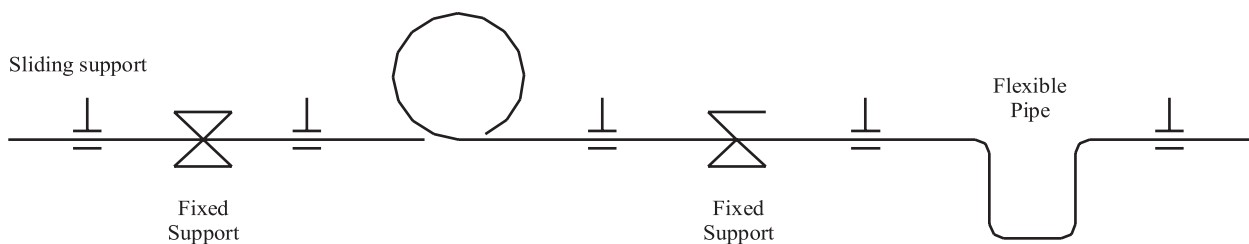
Pipe Diameter (mm)	Heating Secs	Joining Secs	Cooling Time (minutes)
20	5	4	2
25	7	4	3
32	8	6	4
40	12	6	4
50	18	6	5
63	24	8	6
75	30	8	8
90	40	8	8
110	50	10	8



Installation

Pipes can be installed under or above the floor. The installation is very easy and quick. However, one has to pay attention to the following simple points when installing polypropylene pipes:

Pipes have to discharge the radial and axial extensions; compensations may be done using fixed points, supporting bracket sleeve (allowing pipe to slide).



Fixing Accessories should have a surface able to allow correct operation without causing damage to the pipe (scratches, cuts, etc. must be avoided.)

The pipes must be installed so that they can move freely in their axial direction. Fixed supports must not be installed at bending parts and the direction changes must be done in the pipe itself.

The flexibility of the installation is obtained by the free flexible pipe segment whose minimum length is calculated by the following formula ;

$$L_s = C \cdot \sqrt{d \cdot DL}$$

where

FP : Fixed point

PS : Supporting bracket sleeve

L_s : Length of the flexible pipe segment (mm)

L : Length of the pipe

DL : Expansion/contraction (mm)

C : Constant depending on the pipe material

Linear Expansion Table for PP-R Flat Pipes

Pipe Length	Temperature Difference DT (°C)							
L(m)	10	20	30	40	50	60	70	80
1.0	1.50	3.00	4.50	6.00	7.50	9.00	10.50	12.00
2.0	3.00	6.00	9.00	12.00	15.00	18.00	21.00	24.00
3.0	4.50	9.00	13.50	18.00	22.50	27.00	31.50	36.00
4.0	6.00	12.00	18.00	24.00	30.00	36.00	42.00	48.00
5.0	7.00	15.00	22.50	30.00	37.50	45.00	52.50	60.00
6.0	9.00	18.00	27.00	36.00	45.00	54.00	63.00	72.00
7.0	10.50	21.00	31.50	42.00	52.50	63.00	73.50	84.00
8.0	12.00	24.00	36.00	48.00	60.00	72.00	84.00	96.00
9.0	13.50	27.00	40.50	54.00	67.50	81.00	94.50	108.00
10.0	15.00	30.00	45.00	60.00	75.00	90.00	105.00	120.00

Linear Expansion Table for PP-R Aluminium Folio Pipes

Pipe Length	Temperature Difference DT (°C)							
L(m)	10	20	30	40	50	60	70	80
1.0	0.30	0.60	0.90	1.20	1.50	1.80	2.10	2.40
2.0	0.60	1.20	1.80	2.40	3.00	3.60	4.20	4.80
3.0	0.90	1.80	2.70	3.60	4.50	5.40	6.30	7.20
4.0	1.20	2.40	3.60	4.80	6.00	7.20	8.40	9.60
5.0	1.50	3.00	4.50	6.00	7.50	9.00	10.50	12.00
6.0	1.80	3.60	5.40	7.20	9.00	10.80	12.60	14.40
7.0	2.10	4.20	6.30	8.40	10.50	12.60	14.70	16.80
8.0	2.40	4.80	7.20	9.60	12.00	14.40	16.80	19.20
9.0	2.70	5.40	8.10	10.80	13.50	16.20	18.90	21.60
10.0	3.00	6.00	9.00	12.00	15.00	18.00	21.00	24.00

Linear Expansion Δl (mm)

Technical Characteristics of PP-R Pipes:

Characteristics		Unit	Test Method	Value
Density	+23 °C	g/cm ³	ISO 1183	0,909
Melt Index	MFR 190/5 MFR 230/2,16 MFR 230/5	g/10 min g/10 min g/10 min	ISO 1133 ISO 1133 ISO 1133	0,55 0,30 1,20
Volume Flow Index	MVR 230/2,16	cm ³ /10 min	ISO 1133	0,5
Break-off Strength	(50 mm/min)	MPa	ISO 527/1+2	25
Break-off Strain	(50 mm/min)	%	ISO 527/1+2	10
Shore D Toughness	(3 sec value)		DIN 53505	65
Charpy Blow (Strength)	+23 °C 0 °C -30 °C	kJ/m ² kJ/m ² kJ/m ²	ISO 179/1eU ISO 179/1eU ISO 179/1eU	43
Charpy Milled Blow Strength	+23 °C 0 °C -30 °C	kJ/m ² kJ/m ² kJ/m ²	ISO 179/1eA ISO 179/1eA ISO 179/1eA	52 7 2,5
Melting Range		°C	DSC	150-160
Linear Thermo Expansion Coefficient		1/K	DIN 53752	1,5*10 ⁻⁴
Thermal Conductivity		W/mK	DIN 52612	0,24
Surface Strength		Ohm	DIN VDE 0303,T3	> 1014

Service Lives of PP-R Pipes

Service Lives of PP-R Pipes used in Water Installations

Temperature (°C)	Service Life (Year)	Operating Pressure (Bar)
20	1	30.0
	5	28.1
	10	27.3
	25	28.5
	50	25.7
30	1	25.5
	5	23.9
	10	23.2
	25	22.3
	50	21.8
40	1	21.5
	5	20.2
	10	19.6
	25	18.8
	50	18.3
50	1	18.3
	5	17.0
	10	16.5
	25	15.9
	50	15.4
60	1	15.4
	5	14.3
	10	13.8
	25	13.3
	50	12.7
65	1	14.6
	5	13.6
	10	13.1
	25	12.6
	50	11.1
70	1	13.0
	5	11.9
	10	11.7
	25	10.1
	30	8.8
	50	8.5

Referans standard: DIN 2000

Cold Water 
Hot Water 

Service Lives of PP-R Pipes Used in Heating Systems

Usage Period	Temperature (°C)	Service Life (Year)	Operating Pressure (Bar)
30 days/year	75	5	17.27
		10	13.79
		25	11.74
		45	10.18
	80	5	13.50
		10	13.80
		25	11.14
		42.5	9.79
	85	5	12.42
		10	11.87
		25	10.14
		37.5	9.18
	90	5	11.39
		10	10.94
		25	8.86
		35	8.16
60 days/year	75	5	14.11
		10	13.57
		25	11.59
		45	10.05
	80	5	13.12
		10	12.54
		25	10.56
		40	9.41
	85	5	12.03
		10	11.52
		25	9.22
		35	8.48
	90	5	11.04
		10	9.76
		25	7.81
		30	7.46
90 days/year	75	5	14.02
		10	13.38
		25	11.33
		45	9.82
	80	5	12.80
		10	12.35
		25	10.05
		37.5	9.08
	85	5	11.81
		10	10.72
		25	8.58
		32.5	8.03
	90	5	10.59
		10	8.96
		25	7.17

PP-R Glassfiber Reinforced Pipe

PP-R Glassfiber Reinforced Pipe PP-R/GF/PP-R consist of three layers where the inner and outer layers are produced of PP-R and the middle layer is produced of the special mixture of PP-R and Glassfiber raw material.

Main Advantages of the PP-R Glassfiber Reinforced Pipe:

- 1) Easier and faster installation since it does not require peeling before the welding operation.
- 2) 75% less linear expansion than the standard PP-R pipe.
- 3) Higher stiffness than the standard PP-R pipe.
- 4) Less weight than the PP-R Aluminium Foil Reinforced Pipe.

Application Areas:

- 1) All kinds of hot and cold water installations.
- 2) Air pressure installations.
- 3) Heating installations and radiator connections.
- 4) Industry.

Welding Time Comparison:

* Comparison between the welding time of a Ø20 mm PP-R Glassfiber Reinforced Pipe and Ø20 mm Aluminium Foiled PP-R Pipe.

* Comparison was performed in a laboratorial environment.

* Calculations were based on 300 weldings made in an installation process of the plumbing system for a single apartment

Welding time of P-R Glassfiber Reinforced Pipe: 20.8 sec.

Welding time of P-R Aluminium Foiled Pipe: 30.3 sec.

Welding time advantage of P-R Glassfiber Reinforced Pipe: 9.5 sec.

Total time advantage for 300 welding: 2.850 sec.



Table of Linear Expansion

PP-R Pipe coefficient : 0,150 mm / mK
 Aluminium Foil PP-R Pipe coefficient : 0,030 mm / mK
 Glassfiber Reinforced PP-R Pipe coefficient : 0,035 mm / mK
 PP-R Pipe coefficient of Linear Expansion calculation : $\Delta l = L_0 \times \text{Coefficient} \times \Delta t$

Δl = Elongation (mm)
 L_0 = Pipe First Length (m)
 Δt = Temperature Diff. (°C)

Temperature Differences

10°C			20°C			30°C			40°C			50°C			60°C			70°C			80°C		
P	F	G	P	F	G	P	F	G	P	F	G	P	F	G	P	F	G	P	F	G	P	F	G
7	2	2	15	3	3	23	5	5	30	6	7	38	8	9	45	9	11	53	11	12	60	12	14
15	3	3	30	6	7	45	9	11	60	12	14	75	15	18	90	18	21	105	21	25	120	24	28
23	5	5	45	9	11	68	14	16	90	18	21	113	23	26	135	27	32	158	32	37	180	36	24
30	6	7	60	12	14	90	18	21	120	24	28	150	30	15	180	36	42	210	42	49	240	48	56

P: PP-R Pipe

F: Aluminium Foil PP-R Pipe

G: PP-R / GF / PP-R

Linear Expansion (mm)

Pipe Clamps Spacing for Pipes Pipe Diameters

Temp. Differe (ΔT)	Ø 20 mm			Ø 25 mm			Ø 32 mm		
	P	F	G	P	F	G	P	F	G
0	70	155	120	85	170	140	105	195	160
20	50	120	90	60	130	105	75	150	120
30	50	120	90	60	130	105	75	150	120
40	50	110	85	60	120	95	70	140	110
50	50	110	85	60	120	95	70	140	110
60	50	100	80	55	110	90	65	130	105
70	50	90	70	50	100	80	60	120	95

P: PP-R Pipe

F: Aluminium Foil PP-R Pipe

G: PP-R / GF / PP-R

Clamps Spacing (mm)

CHEMICAL RESISTANCE

Polypropylene is a polymer with very high chemical resistance. The following tables show the chemical resistance of PPR according to German Standard DIN 8078. Chemical resistance varies on factors such as composition, quality condition, time of affection, concentration and temperature. The tables shown below give chemical resistance in different temperatures and concentrations.

The symbols used in the table are:

S	Saturated solution
f	Resistant
p	Partially resistant
n	Nonresistant

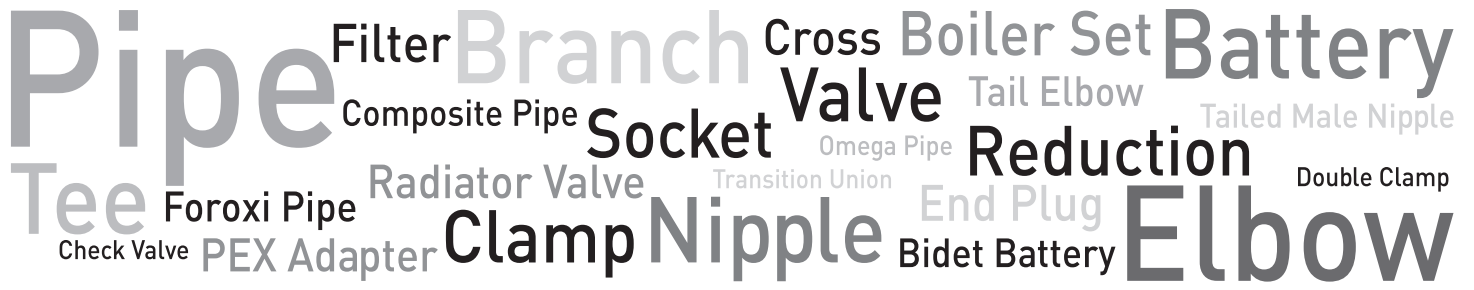
Products	Concentration %	Temperature		
		20C°	60C°	100C°
Accumulator acid		f	f	
Acetic glacial acid	100	f	p	n
Acetic acid	50	f	f	
Acetic acid	10	f	f	
Acetic anhydride	100	f		
Acetone	100	f	p	n
Acrylonitrile	100	p		
Alum	All	f	f	
Ammonia	High	f	f	
Ammonia	10	f	f	
Ammonia	100	f	f	
Ammonium acetate	All	f	f	f
Ammonium carbonate	All	f	f	
Ammonium chloride	All	f	f	f
Ammonium nitrate	All	f	f	f
Ammonium metaphosphate	S	p	p	p
Ammonium phosphate	All	f	f	f
Ammonium sulphate	S	p	p	p
Ammonium bicarbonate	S	p	p	
Animal cooking oil		f	p	
Anti-freeze car		f	f	
Aqua regia		f	n	
Barrium chloride	All	f	f	f
Beer		f		
Benzaldehyde		f	f	
Benzaldehyde	S	f	f	f
Benzene		p	n	
Benzoic acid	S	f	f	p
Benzoyl chloride	100	n		

Products	Concentration %	Temperature		
		20C°	60C°	100C°
Bitter almonds fragrance		f		
Bleach	12,50%	p	p	
Borax				
Boric acid	100	f	f	
Boric acid	S	f	f	
Brandy		f		
Bromine	100	n		
Bromine	High	n	n	
Bromine	Low	n	n	
Bromine water	S	n	n	
Butane	100	f		
Butane (P)	100	f	f	
Butter		f	f	
Butyl alcohol	100	f	f	
Calcium nitrate	S	f	f	
Camphor		f		
Carvon tetrachloride	100	p	n	
Chlorine	100	n		
Chlorine (dry)	100	n	n	n
Chlorine (wet)	10	p	n	n
Chlorosulphonic	100	n	n	
Chloroform	1000	p	n	
Chromic acid	S	f	n	
Chromium (3) salts				
Chromium (6) salts				
Citric acid	S	f	f	f
Cocoa		f	f	p
Cod liver oil		f		
Cresol	100	f	p	
Cresol	S	f	p	
Cresol oil		f		
Cyclohexane	100	f		
Cyclohexanol	100	f	p	
Cyclohexanon	100	f	n	
Decahydronaphtalene	100	p	n	n
Dioxan	100	f	p	n
Distilled water	100	f	f	n
Engine oil		f	p	
Ethyl alcohol	100	f		
Ethyl alcohol	96	f	f	
Ethyl alcohol	50	f	f	
Ethers	100	f	p	
Ethyl alcohol (denatured)	10	f	f	
Ethyl chlorides	100	n		
Ethylene chlorides	100	p	p	
Ethylene tetrachloride	100	p	n	

Products	Concentration %	Temperature		
		20C°	60C°	100C°
Ethylene tetrachlorine	100	p	n	
Formaldehyde	40	f	f	
Formaldehyde	30	f	f	
Formaldehyde	10	f	f	
Formic acid	98	f	p	
Formic acid	90	f		
Formic acid	50	f	f	
Formic acid	10	f	f	f
Fruit-juice		f	f	
Fumic sulfuric acid		n	n	n
Galvanic solutions		f	f	
Glycerol	100	f	f	
Glycerol	High	f	f	
Glycerol	Low	f	f	f
Glycol	100	f	f	
Glycol	High	f	f	
Glycol	Low	f	f	f
Heptan	100	f	p	
Hexan	100	f	p	
Honey		f	f	
Hydrobromic acid	10	f	f	
Hydrofluoric acid	40	f	f	
Hydrogen peroxide water	30	f	p	
Hydrobromic acid	High	f	f	
Hydrogen peroxide water	10	f	f	
Hydrogen peroxide water	3	f	f	f
Ink		f	f	
Isooctane	100	f	p	
Lactic acid	90	f	f	
Lactic acid	50	f	f	
Lactic acid	10	f	f	f
Lacual water	100	f	f	f
Limestone		f	f	f
Linseed oil		f	f	
Mercury		f	f	
Mercury salts	100			
Methyl alcohol	50	f	f	
Methyl alcohol	100	f	f	
Methyl chloride	100	p		
Methym ethyl ketone	100	f	p	
Methylene diformammyde		f		
Milk		f	f	p
Mineral water		f	f	f
Naphtha		f	p	
Naphthalene	100	f		
Nitro benzene	100	p	p	

Products	Concentration %	Temperature		
		20C°	60C°	100C°
Normal gasoline		p	n	
Oil		n	n	
Oleic acid	100	f		
Olive oil		f	f	
Nitric acid	50	p	n	
Nitric acid	25	f	f	
Nitric acid	10	f	f	
Oxalic acid	S	f	f	f
Ozone	<0,5 ppm	p	p	
Paraffine	100	f	f	n
Petroleum	100	f	p	
Phenylamine		f	p	
Phenylmethylketone	100	p	p	
Phosphoric acid	S	f	p	
Phosphoric acid	50	f	f	
Phosphoric acid	10	f	f	f
Potassium carbonate	S	f	f	
Potassium chlorate	S	f	f	
Potassium chloride X	S	f	f	f
Potassium dichromate	S	f	f	f
Potassium hydroxide	50	f	f	
Potassium hydroxide	25	f	f	
Potassium hydroxide	10	f	f	
Potassium hypochlorite	5	f		
Potassium iodide	S	f	f	
Potassium nitrate	S	f	f	
Sea water		f	f	f
Shampoo		f	f	
Silicone oil		f	p	
Soap solution	S	f	f	
Soap solution	10	f	f	f
Sodium bicarbonate	S	f	f	f
Potassium sulphate	S	f	f	f
Propane (R)	100	f	f	f
Propane	100	f	f	f
Pyridine	100	f	p	
Sodium carbonate	S	f	f	
Sodium carbonate	10	f	f	f
Sodium chlorate	5	f		
Sodium chlorite	25	f	f	
Sodium chloride	S	f	f	f
Sodium disulphite	S	f	f	f
Sodium hidroxide	100	f	f	
Sodium hydroxide	50	f	f	
Sodium hydroxide	25	f	f	
Sodium hidroxide	10	f	f	

Products	Concentration	Temperature		
	%	20C°	60C°	100C°
Sodium nitrate	S	f	f	
Sodium nitrite (P)	S	f		
Sodium perborate	S	f	f	f
Sodium phosphate	S	f	f	f
Sodium sulphate	S	f	f	f
Sodium sulphite	S	f	f	
Soluble coffee		f	f	f
Soy-bean oil		f	p	
Sulphocromic acid		n	n	
Sulphur	100	f	f	f
Sulphuric acid	96	f	p	
Sulphuric acid	50	f	f	
Sulphuric acid	25	f	f	
Sulphuric acid	10	f	f	f
Sulphurous anhydride	Low	f	f	
Spirits		f		
Stannus chloride	S	f	f	
Starch	All	f	f	
Stearic acid	100	f		
Succinic acid	S	f	f	
Super gasoline		p	n	
Syntetic detersive		f	f	f
Tar		f	p	
Tartaric acid	S	f	f	
Tartaric acid	10	p	p	
Tetrahydrofurane	100	p	n	
Tetrahydronaphtalene	100	p	n	
Thea		f	f	p
Thiophene	100	p	n	
Toluen	100	p	n	
Tomatoes-juice		f	f	
Tooth paste		f	f	
Trichlorcethylene	100	p	p	
Turpentine		n	n	n
Turpentine oil		p	n	
Two stroke engine oil		p	p	
Typewriter oil		f	p	
Urea	S	f	f	
Vaseline		f	p	
Vegetable cooking oil		f	p	
Water	100	f	f	f
Whipped cream		f		
Whisky	40	f		
Xylene or xylol	100	p	n	

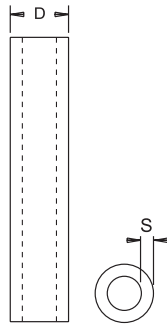


Filter Branch Cross Boiler Set Battery
Composite Pipe Socket Valve Tail Elbow Tailed Male Nipple
Radiator Valve Transition Union Omega Pipe Reduction Double Clamp
Foroxi Pipe Tee Check Valve PEX Adapter Clamp Nipple Bidet Battery End Plug Elbow

PP-R Pipes & Fittings →

Pipe PN 10 / Труба PN 10

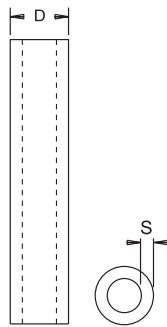
أنبوب



CODE	SIZE	S	D	QUANTITY
DUZ-200010	Ø 20	1.9	20.3	140/4.00
DUZ-250010	Ø 25	2.3	25.3	100/4.00
DUZ-320010	Ø 32	2.9	32.3	60/4.00
DUZ-400010	Ø 40	3.7	40.4	40/4.00
DUZ-500010	Ø 50	4.6	50.5	24/4.00
DUZ-630010	Ø 63	5.8	63.6	20/4.00
DUZ-750010	Ø 75	6.8	75.7	12/4.00
DUZ-900010	Ø 90	8.2	90.9	8/4.00
DUZ-110010	Ø 110	10	111	4/4.00
DUZ-125010	Ø 125	11.4	126.2	4/4.00

Pipe PN 16 / Труба PN 16

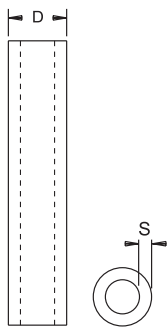
أنبوب



CODE	SIZE	S	D	QUANTITY
DUZ-200016	Ø 20	2.8	20.3	140/4.00
DUZ-250016	Ø 25	3.5	25.3	100/4.00
DUZ-320016	Ø 32	4.4	32.3	60/4.00
DUZ-400016	Ø 40	5.5	40.4	40/4.00
DUZ-500016	Ø 50	6.9	50.5	24/4.00
DUZ-630016	Ø 63	8.6	63.6	20/4.00
DUZ-750016	Ø 75	10.3	75.7	12/4.00
DUZ-900016	Ø 90	12.3	90.9	8/4.00
DUZ-110016	Ø 110	15.1	111	4/4.00
DUZ-125016	Ø 125	17.1	126.2	4/4.00

Pipe PN 20 / Труба PN 20

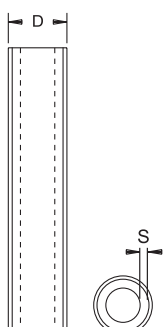
أنبوب



CODE	SIZE	S	D	QUANTITY
DUZ-200020	Ø 20	3.4	20.3	140/4.00
DUZ-250020	Ø 25	4.2	25.3	100/4.00
DUZ-320020	Ø 32	5.4	32.3	60/4.00
DUZ-400020	Ø 40	6.7	40.4	40/4.00
DUZ-500020	Ø 50	8.3	50.5	24/4.00
DUZ-630020	Ø 63	10.5	63.6	20/4.00
DUZ-750020	Ø 75	12.5	75.7	12/4.00
DUZ-900020	Ø 90	15.0	90.9	8/4.00
DUZ-110020	Ø 110	18.3	111	4/4.00
DUZ-125020	Ø 125	20.8	126.2	4/4.00

Pipe with Aluminium PN 20 / Труба с алюминиевой фольгой PN 20

أنبوب مغلف بالألومنيوم

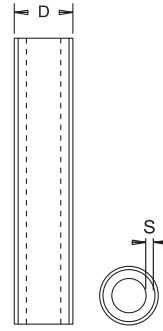


CODE	SIZE	S	D	QUANTITY
FLY-200020	Ø 20	2.8	21.5	140/4.00
FLY-250020	Ø 25	3.5	26.5	100/4.00
FLY-320020	Ø 32	4.4	33.5	60/4.00
FLY-400020	Ø 40	5.5	41.5	40/4.00
FLY-500020	Ø 50	6.9	51.5	24/4.00
FLY-630020	Ø 63	8.6	64.5	20/4.00

Pipe with Aluminium PN 25 / Труба с алюминиевой фольгой PN 25

انبوب مغلف بالالمنيوم

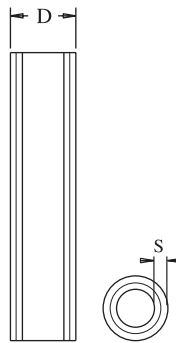
CODE	SIZE	S	D	QUANTITY
FLY-200025	Ø 20	3.4	21.5	140/4.00
FLY-250025	Ø 25	4.2	26.5	100/4.00
FLY-320025	Ø 32	5.4	33.5	60/4.00
FLY-400025	Ø 40	6.7	41.5	40/4.00
FLY-500025	Ø 50	8.3	51.5	24/4.00
FLY-630025	Ø 63	10.5	64.5	20/4.00



Foroxi Pipe PN 25 / Труба Foroxi (с внутренней армировкой) PN 20

انبوب فوروكسى مغلف المنيوم في الوسط

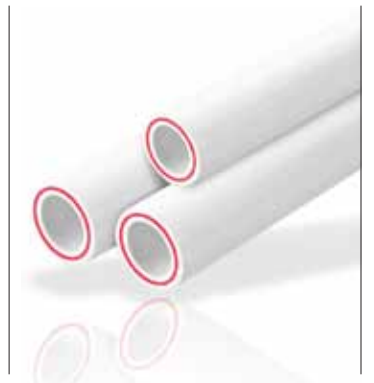
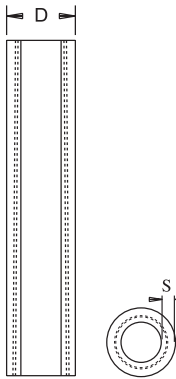
CODE	SIZE	S	D	QUANTITY
OFL-200025	Ø 20	3.4	20.3	140/4.00
OFL-250025	Ø 25	4.2	25.3	100/4.00
OFL-320025	Ø 32	5.4	32.3	60/4.00
OFL-400025	Ø 40	6.7	40.4	40/4.00
OFL-500025	Ø 50	8.3	50.5	24/4.00
OFL-630025	Ø 63	10.5	63.6	20/4.00



Composite Pipe PN 20 / Труба со стекловолокном PN 20

انبوب Composite

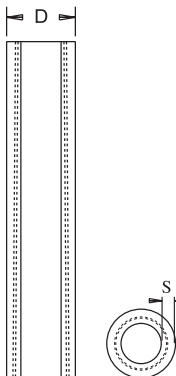
CODE	SIZE	S	D	QUANTITY
DGF-320020	Ø 32	4.4	32.3	60/4.00
DGF-400020	Ø 40	5.5	40.4	40/4.00
DGF-500020	Ø 50	6.9	50.5	24/4.00
DGF-630020	Ø 63	8.6	63.6	20/4.00
DGF-750020	Ø 75	10.3	75.7	12/4.00
DGF-900020	Ø 90	12.3	90.9	8/4.00
DGF-110020	Ø 110	15.1	111	4/4.00
DGF-125020	Ø 125	17.1	126.2	4/4.00



Composite Pipe PN 25 / Труба со стекловолокном PN 25

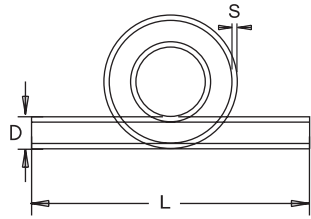
انبوب Composite

CODE	SIZE	S	D	QUANTITY
DGF-200025	Ø 20	3.4	20.3	140/4.00
DGF-250025	Ø 25	4.2	25.3	100/4.00
DGF-320025	Ø 32	5.4	32.3	60/4.00
DGF-400025	Ø 40	6.7	40.4	40/4.00
DGF-500025	Ø 50	8.3	50.5	24/4.00
DGF-630025	Ø 63	10.5	63.6	20/4.00
DGF-750025	Ø 75	12.5	75.7	12/4.00
DGF-900025	Ø 90	15.0	90.9	8/4.00
DGF-110025	Ø 110	18.3	111	4/4.00
DGF-125025	Ø 125	20.8	126.2	4/4.00



Omega PN 20 / Компенсатор "Омега" PN 20

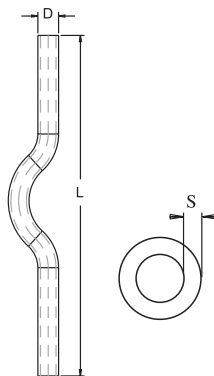
جسر لحام



CODE	SIZE	S	D	L	QUANTITY
OMG-200020	Ø 20	3.4	20.3	350	85
OMG-250020	Ø 25	4.2	25.3	350	45
OMG-320020	Ø 32	5.4	32.3	350	22
OMG-400020	Ø 40	6.7	40.4	350	15

Crossover PN 20 / Обводное колено PN 20

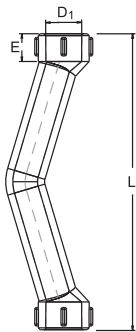
انبوب منحرف



CODE	SIZE	S	D	L	QUANTITY
KVS-200020	Ø 20	3.4	20.3	350	160
KVS-250020	Ø 25	4.2	25.3	350	100
KVS-320020	Ø 32	5.4	32.3	350	65
KVS-400020	Ø 40	6.7	40.4	350	40

Crossover with Socket - Long PN 25 / Обводное колено с муфтами PN25

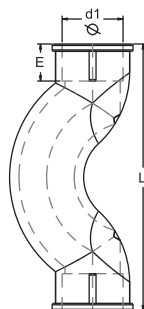
انبوب منحرف مع وصل



CODE	SIZE	D ₁	E	L	QUANTITY
MKV-200000	Ø 20	19.5	14.5	162	150
MKV-250000	Ø 25	24.5	16	200	80
MKV-320000	Ø 32	31.5	18	240	30

Crossover with Socket - Short PN 25 / Обводное колено короткое PN 25

انبوب منحرف مع وصل

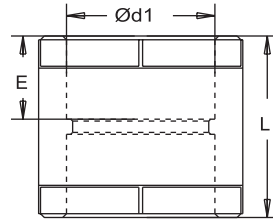


CODE	SIZE	Ød ₁	E	L	QUANTITY
MKK-200000	Ø 20	19.5	14.5	86	200
MKK-250000	Ø 25	24.5	16	95	125
MKK-320000	Ø 32	31.5	18	117	60

Socket PN 25 / Муфта PN 25

وصل لحام

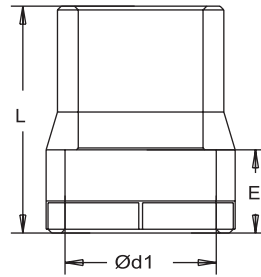
CODE	SIZE	Ød ₁	L	E	QUANTITY
MAN-200000	Ø 20	19.5	34	14.5	600
MAN-250000	Ø 25	24.5	37	16	300
MAN-320000	Ø 32	31.5	41	18	200
MAN-400000	Ø 40	39.4	45	20.5	100
MAN-500000	Ø 50	49.4	52	23.5	60
MAN-630000	Ø 63	62.5	60	27.5	36
MAN-750000	Ø 75	74.2	65	31	24
MAN-900000	Ø 90	89.2	71	35.5	16
MAN-110000	Ø 110	109	79	41.5	6
MAN-125000	Ø 125	123.9	104	46.5	4



Reducer PN 25 / Муфта переходная PN 25

نقاصة

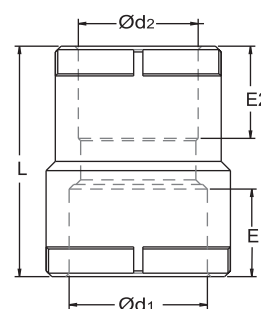
CODE	SIZE	Ød ₁	L	E	QUANTITY
RDS-252000	Ø 25/20	19.5	39	14.5	500
RDS-322000	Ø 32/20	19.5	39	14.5	400
RDS-322500	Ø 32/25	24.5	43	16	300
RDS-402000	Ø 40/20	19.5	39	14.5	200
RDS-402500	Ø 40/25	24.5	43	16	200
RDS-403200	Ø 40/32	31.5	48	18	150
RDS-502500	Ø 50/25	24.5	43	16	100
RDS-503200	Ø 50/32	31.5	48	18	100
RDS-504000	Ø 50/40	39.4	52	20.5	80
RDS-633200	Ø 63/32	31.5	48	18	60
RDS-634000	Ø 63/40	39.4	52	20.5	60
RDS-635000	Ø 63/50	49.4	60	23.5	50
RDS-754000	Ø 75/40	39.4	52	20.5	40
RDS-755000	Ø 75/50	49.4	60	23.5	40
RDS-756300	Ø 75/63	62.5	67	27.5	30
RDS-905000	Ø 90/50	49.4	60	23.5	20
RDS-906300	Ø 90/63	62.5	67	27.5	20
RDS-907500	Ø 90/75	74.2	72	31	16
RDS-116300	Ø 110/63	62.5	67	27.5	16
RDS-117500	Ø 110/75	74.2	72	31	16
RDS-119000	Ø 110/90	89.2	90	35.5	16
RDS-129000	Ø 125/90	89.2	120	35.5	8
RDS-121100	Ø 125/110	109	120	41.5	6



Reducer Socket PN 25 / Муфта переходная PN 25

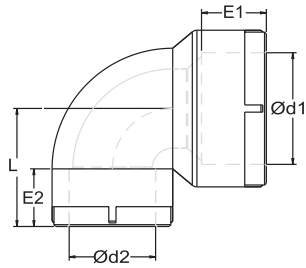
نقاصة

CODE	SIZE	Ød ₁	Ød ₂	E ₁	E ₂	L	QUANTITY
RDM-252000	Ø 25/20	24.5	19.5	16	14.5	39	400
RDM-322000	Ø 32/20	31.5	19.5	18	14.5	39	300
RDM-322500	Ø 32/25	31.5	24.5	21	16	43	250



90° Reducer Elbow PN 25 / 90° Угольник переходной PN 25

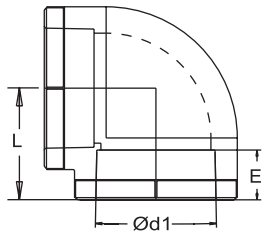
كوع منقص



CODE	SIZE	Ød ₁	Ød ₂	E ₁	E ₂	L	QUANTITY
RDD-252000	Ø 25/20	24.5	19.5	16	14.5	29	200
RDD-322500	Ø 32/25	31.5	24.5	18	16	33	150

90° Elbow PN 25 / 90° Угольник PN 25

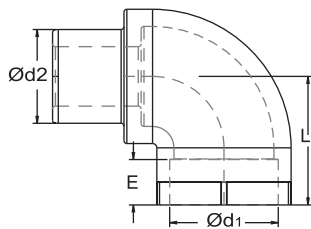
كوع زاوية 90



CODE	SIZE	Ød ₁	L	E	QUANTITY
DIR-200090	Ø 20	19.5	23	14.5	400
DIR-250090	Ø 25	24.5	25	16	200
DIR-320090	Ø 32	31.5	28	18	125
DIR-400090	Ø 40	39.4	32	20.5	60
DIR-500090	Ø 50	49.4	37	23.5	35
DIR-630090	Ø 63	62.5	54	27.5	15
DIR-750090	Ø 75	74.2	60	31	12
DIR-900090	Ø 90	89.2	76	35.5	6
DIR-110090	Ø 110	109	94	41.5	2
DIR-125090	Ø 125	123.9	110	46.5	2

90° Tail Elbow PN 25 / 90° Угольник внутр./наруж. PN 25

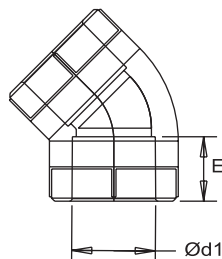
كوع زاوية 90



CODE	SIZE	Ød ₁	Ød ₂	L	E	QUANTITY
KDR-200090	Ø 20	19.5	20.3	23	14.5	300
KDR-250090	Ø 25	24.5	25.3	25	16	200
KDR-320090	Ø 32	31.5	32.3	28	18	125

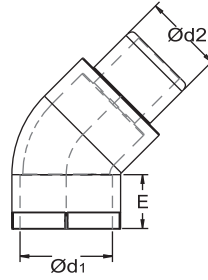
45° Elbow PN 25 / 45° Угольник PN 25

كوع زاوية 45



CODE	SIZE	Ød ₁	E	QUANTITY
DIR-200045	Ø 20	19.5	14.5	400
DIR-250045	Ø 25	24.5	16	250
DIR-320045	Ø 32	31.5	18	150
DIR-400045	Ø 40	39.4	20.5	80
DIR-500045	Ø 50	49.4	23.5	40
DIR-630045	Ø 63	62.5	27.5	20
DIR-750045	Ø 75	74.2	31	15
DIR-900045	Ø 90	89.2	35.5	8
DIR-110045	Ø 110	109	41.5	4

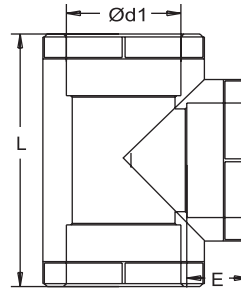
CODE	SIZE	Ød ₁	Ød ₂	E	QUANTITY
KDR-200045	Ø 20	19.5	20.3	14.5	300
KDR-250045	Ø 25	24.5	25.3	16	200
KDR-320045	Ø 32	31.5	32.3	18	100



Tee PN 25 / Тройник PN 25

تي

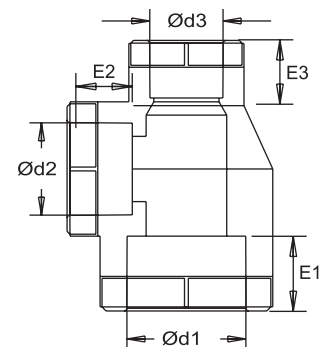
CODE	SIZE	Ød ₁	L	E	QUANTITY
TEE-200000	Ø 20	19.5	52	14.5	250
TEE-250000	Ø 25	24.5	59	16	150
TEE-320000	Ø 32	31.5	70	18	80
TEE-400000	Ø 40	39.4	82	20.5	40
TEE-500000	Ø 50	49.4	100	23.5	25
TEE-630000	Ø 63	62.5	120	27.5	16
TEE-750000	Ø 75	74.2	137	31	10
TEE-900000	Ø 90	89.2	160	35.5	5
TEE-110000	Ø 110	109	190	41.5	2
TEE-125000	Ø 125	123.9	221	46.5	2



Reducer Tee PN 25 / Тройник переходной PN 25

تي منقص

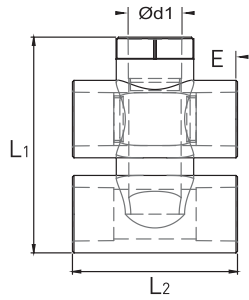
CODE	SIZE	Ød ₁	E ₁	Ød ₂	E ₂	Ød ₃	E ₃	QUANTITY
ITE-202520	Ø 20/25/20	19.5	14.5	24.5	16	19.5	14.5	200
ITE-252020	Ø 25/20/20	24.5	16	19.5	14.5	19.5	14.5	150
ITE-252025	Ø 25/20/25	24.5	16	19.5	14.5	24.5	16	200
ITE-252520	Ø 25/25/20	24.5	16	24.5	16	19.5	14.5	150
ITE-322020	Ø 32/20/20	31.5	18	19.5	14.5	19.5	14.5	100
ITE-322025	Ø 32/20/25	31.5	18	19.5	14.5	24.5	16	100
ITE-322032	Ø 32/20/32	31.5	18	19.5	14.5	31.5	16	100
ITE-322520	Ø 32/25/20	31.5	18	24.5	16	19.5	14.5	100
ITE-322525	Ø 32/25/25	31.5	18	24.5	16	24.5	16.5	100
ITE-322532	Ø 32/25/32	31.5	18	24.5	16	31.5	18	100
ITE-402040	Ø 40/20/40	39.4	20.5	19.5	14.5	39.4	20.5	50
ITE-402540	Ø 40/25/40	39.4	20.5	24.5	16	39.4	20.5	50
ITE-403240	Ø 40/32/40	39.4	20.5	31.5	18	39.4	20.5	40
ITE-502050	Ø 50/20/50	49.4	23.5	19.5	14.5	49.4	23.5	30
ITE-502550	Ø 50/25/50	49.4	23.5	24.5	16	49.4	23.5	30
ITE-503250	Ø 50/32/50	49.4	23.5	31.5	18	49.4	23.5	30
ITE-504050	Ø 50/40/50	49.4	23.5	39.4	20.5	49.4	23.5	25
ITE-632063	Ø 63/20/63	62.5	27.5	19.5	14.5	62.5	27.5	24
ITE-632563	Ø 63/25/63	62.5	27.5	24.5	16	62.5	27.5	24
ITE-633263	Ø 63/32/63	62.5	27.5	31.5	18	62.5	27.5	24
ITE-634063	Ø 63/40/63	62.5	27.5	39.4	20.5	62.5	27.5	16
ITE-635063	Ø 63/50/63	62.5	27.5	49.4	23.5	62.5	27.5	16
ITE-752075	Ø 75/20/75	74.2	31	19.5	14.5	74.2	31	10
ITE-752575	Ø 75/25/75	74.2	31	24.5	16	74.2	31	10
ITE-753275	Ø 75/32/75	74.2	31	31.5	18	74.2	31	10
ITE-754075	Ø 75/40/75	74.2	31	39.4	20.5	74.2	31	10
ITE-755075	Ø 75/50/75	74.2	31	49.4	23.5	74.2	31	10
ITE-756375	Ø 75/63/75	74.2	31	62.5	27.5	74.2	31	10
ITE-902590	Ø 90/25/90	89.2	35.5	24.4	16	89.2	35.5	4
ITE-903290	Ø 90/32/90	89.2	35.5	31.5	18	89.2	35.5	4
ITE-904090	Ø 90/40/90	89.2	35.5	39.4	20.5	89.2	35.5	4
ITE-905090	Ø 90/50/90	89.2	35.5	49.4	23.5	89.2	35.5	4
ITE-906390	Ø 90/63/90	89.2	35.5	62.5	27.5	89.2	35.5	4
ITE-907590	Ø 90/75/90	89.2	35.5	74.2	31	89.2	35.5	4
ITE-113211	Ø 110/32/110	109	41.5	31.5	18	109	41.5	2
ITE-114011	Ø 110/40/110	109	41.5	39.4	20.5	109	41.5	2
ITE-115011	Ø 110/50/110	109	41.5	49.4	23.5	109	41.5	2
ITE-116311	Ø 110/63/110	109	41.5	62.5	27.5	109	41.5	2
ITE-117511	Ø 110/75/110	109	41.5	74.2	31	109	41.5	2
ITE-119011	Ø 110/90/110	109	41.5	89.2	35.5	109	41.5	2
ITE-121112	Ø 125/110/125	123.9	46.5	109	41.5	123.9	46.5	2



Radiator Bypass PN 25 / Байпас Радиаторный PN 25

قطعة توزيع المشعات

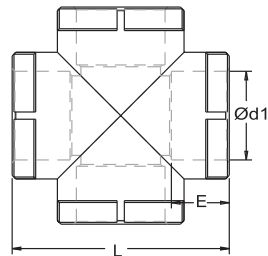
NEW



CODE	SIZE	Ød ₁	E	L ₁	L ₂	QUANTITY
RBS-202000	Ø 20x20	19.5	14.5	78.3	60	100
RBS-252500	Ø 25x25	24.5	16	93	70	75

Cross PN 25 / Крестовина PN 25

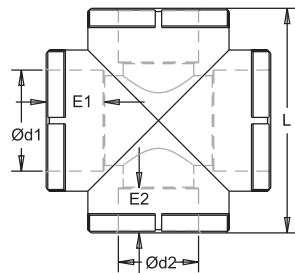
تي مصلب



CODE	SIZE	Ød ₁	E	L	QUANTITY
IST-200000	Ø 20	19.5	14.5	50	200
IST-250000	Ø 25	24.5	16	55	150
IST-320000	Ø 32	31.5	18	60	75
IST-400000	Ø 40	39.4	20.5	86	40

Reducer Cross PN 25 / Крестовина переходная PN 25

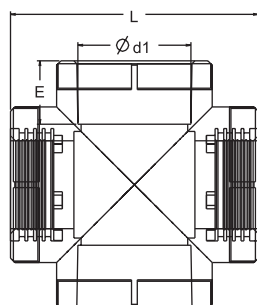
تي منقصب



CODE	SIZE	Ød ₁	Ød ₂	E ₁	E ₂	L	QUANTITY
IIS-252000	Ø 25/20	24.5	19.5	16.5	14.5	56	150
IIS-322500	Ø 32/25	31.5	24.5	18	16.5	70	75
IIS-403200	Ø 40/32	39.4	31.5	20.5	18	86	40

Female Cross PN 25 / Крестовина с ВР

تي مصلب

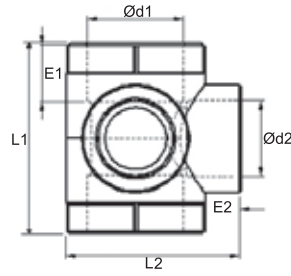


CODE	SIZE	Ød ₁	E	L	QUANTITY
DIM-250012	Ø 25x1/2"	24.5	16	56	80
DIM-320034	Ø 32x3/4"	31.5	18	70	40
DIM-400100	Ø 40x1"	39.4	20.5	86	25

Corner Cross PN 25 / Крестовина угловая PN 25

قطعة توزيع زاوية

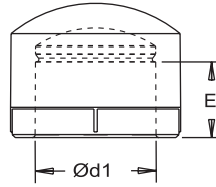
CODE	SIZE	Ød ₁	Ød ₂	E ₁	E ₂	L ₁	L ₂	QTY
KIS-322000	Ø 32x20	31.5	19.5	18	14.5	62	57	80
KIS-322500	Ø 32x25	31.5	24.5	18	16	62	57	80
KIS-402000	Ø 40x20	39.4	19.5	20.5	14.5	66	60	60
KIS-402500	Ø 40x25	39.4	24.5	20.5	16	66	60	60



Stopend PN 25 / Заглушка PN 25

سدة تلحيم

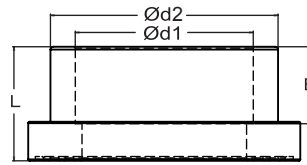
CODE	SIZE	Ød ₁	E	QUANTITY
KPB-200000	Ø 20	19.5	14.5	900
KPB-250000	Ø 25	24.5	16	500
KPB-320000	Ø 32	31.5	18	250
KPB-400000	Ø 40	39.4	20.5	150
KPB-500000	Ø 50	49.4	23.5	80
KPB-630000	Ø 63	62.5	27.5	50
KPB-750000	Ø 75	74.2	31	25
KPB-900000	Ø 90	89.2	35.5	18
KPB-110000	Ø 110	109	41.5	9
KPB-125000	Ø 125	123.9	46.5	6



Flange Adaptor / Адаптор к фланцу

محول شفة

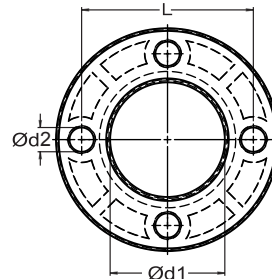
CODE	SIZE	Ød ₁	Ød ₂	E	L	QUANTITY
FLA-500000	Ø 50	49.4	65	23.5	32	80
FLA-630000	Ø 63	62.5	80	27.5	40	50
FLA-750000	Ø 75	74.2	95	31	40	40
FLA-900000	Ø 90	89.2	111	35.5	42	25
FLA-110000	Ø 110	109	132	41.5	49	12



Flange / Фланец

شفة

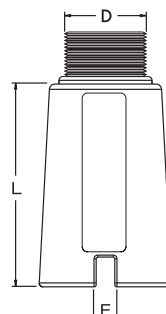
CODE	SIZE	Ød ₁	Ød ₂	L	QUANTITY
FLN-500000	Ø 50	66	17	109	30
FLN-630000	Ø 63	81	17	121	30
FLN-750000	Ø 75	97	17	144	16
FLN-900000	Ø 90	113	17	160	16
FLN-110000	Ø 110	133	17	180	12



End Plug - Long PN 25 / Заглушка с резьбой PN 25 (Длинная)

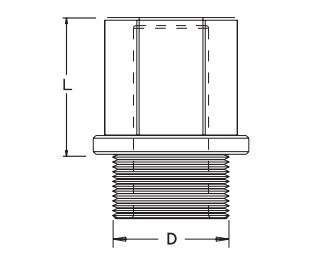
سدة بسن ذكر طويل

CODE	SIZE	D	L	E	QUANTITY
UKT-200012	Ø 20x1/2"	21	56	5	750



End Plug PN 25 / Заглушка с резьбой PN 25

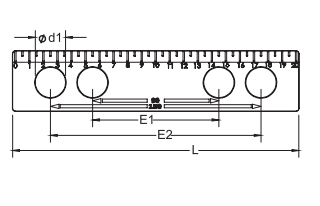
سدة بسن نكر قصير



CODE	SIZE	D	L	QUANTITY
KTP-200012	Ø 20x1/2"	20	25	2500
KTP-250034	Ø 25x3/4"	25	15	2500

Ruler / Линейка

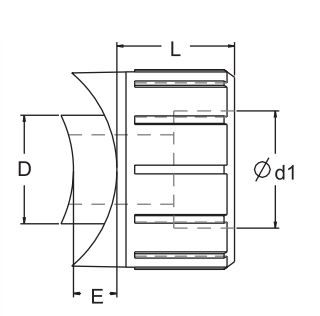
مسطرة



CODE	SIZE	Ød1	E1	E2	L	QUANTITY
CTV-000000	1/2"	20.5	90	150	200	400

Branch PN 25 / Переходник

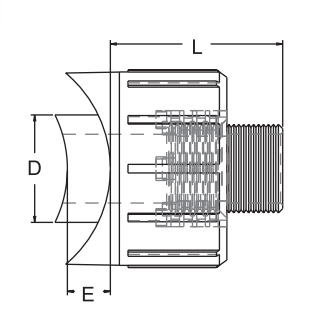
وصل تلحيم الطرفين على الانبوب



CODE	SIZE	Ød1	D	L	E	QUANTITY
KBP-200000	Ø 20	19.5	20.3	22	14.5	300
KBP-250000	Ø 25	24.5	25.3	25	16	200
KBP-320000	Ø 32	31.5	32.3	30	18	100

Male Branch PN 25 / Переходник с HP

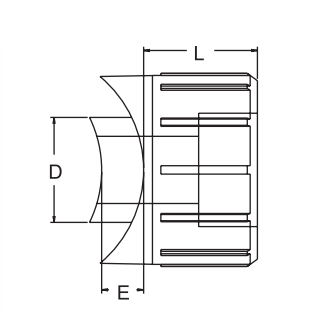
وصلة تلحيم ذكر مع الانبوب



CODE	SIZE	D	L	E	QUANTITY
EKB-200012	Ø 20x1/2"	20.3	40	14.5	150
EKB-250034	Ø 25x3/4"	25.3	42	16	100
EKB-320100	Ø 32x1	32.3	44	18	50

Female Branch PN 25 / Переходник с BP

وصلة تلحيم انثى مع الانبوب

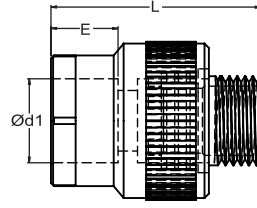


CODE	SIZE	D	L	E	QUANTITY
DKB-200012	Ø 20x1/2"	20.3	22	14.5	150
DKB-250034	Ø 25x3/4"	25.3	25	16	100
DKB-320100	Ø 32x1	32.3	30	18	50

Male Nipple Rounded PN 25 / Муфта комбинированная НР (круглая)

وصلة بسن ذكر دائري الشكل

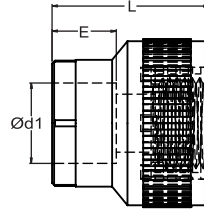
CODE	SIZE	Ød ₁	E	L	QUANTITY
EDN-200012	Ø 20x1/2"	19.5	14.5	48	150
EDN-250012	Ø 25x1/2"	24.5	16	56	100



Female Nipple Rounded PN 25 / Муфта комбинированная ВР (круглая)

وصلة بسن انثى دائري الشكل

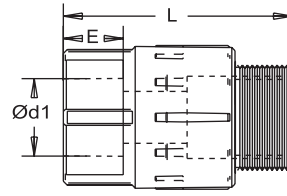
CODE	SIZE	Ød ₁	E	L	QUANTITY
DDN-200012	Ø 20x1/2"	19.5	14.5	38	125
DDN-250012	Ø 25x1/2"	24.5	16	43	100



Male Nipple PN 25 / Муфта комбинированная НР PN 25

وصلة بسن ذكر

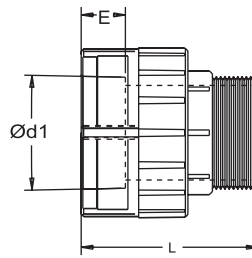
CODE	SIZE	Ød ₁	L	E	QUANTITY
ENP-200012	Ø 20x1/2"	19.5	55	14.5	150
ENP-200034	Ø 20x3/4"	19.5	55	14.5	100
ENP-250012	Ø 25x1/2"	24.5	57	16	100
ENP-250034	Ø 25x3/4"	24.5	57	16	100
ENP-250100	Ø 25x1"	24.5	57	16	50
ENP-320012	Ø 32x1/2"	31.5	60	18	50
ENP-320034	Ø 32x3/4"	31.5	60	18	50
ENP-320100	Ø 32x1"	31.5	60	18	50



Male Nipple Hexagonal PN 25 / Муфта комбинированная НР под ключ PN 25

وصلة بسن ذكر (سداسية الشكل)

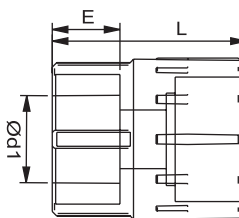
CODE	SIZE	Ød ₁	L	E	QUANTITY
AEN-320100	Ø 32x1"	31.5	59	18	50
AEN-400100	Ø 40x1"	39.4	75	20.5	20
AEN-400114	Ø 40x1 1/4"	39.4	80	20.5	20
AEN-500112	Ø 50x1 1/2"	49.4	90	23.5	12
AEN-630200	Ø 63x2"	62.5	95	27.5	10
AEN-750212	Ø 75x2 1/2"	74.2	105	31	6
AEN-900300	Ø 90x3"	89.2	120	35.5	4
AEN-110400	Ø 110x4"	109	140	41.5	2
AEN-125500	Ø 125x5"	123.9	130	46.5	2



Female Nipple PN 25 / Муфта комбинированная ВР PN 25

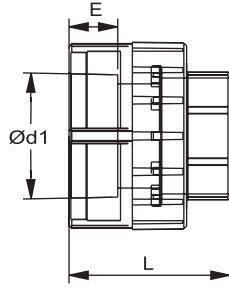
وصلة بسن انثى

CODE	SIZE	Ød ₁	L	E	QUANTITY
DNP-200012	Ø 20x1/2"	19.5	40	14.5	125
DNP-200034	Ø 20x3/4"	19.5	40	14.5	100
DNP-250012	Ø 25x1/2"	24.5	42	16	100
DNP-250034	Ø 25x3/4"	24.5	42	16	100
DNP-250100	Ø 25x1"	24.5	42	16	50
DNP-320012	Ø 32x1/2"	31.5	44	18	50
DNP-320034	Ø 32x3/4"	31.5	44	18	50
DNP-320100	Ø 32x1"	31.5	44	18	50



Female Nipple Hexagonal PN 25 / Муфта комбинированная ВР под ключ PN 25

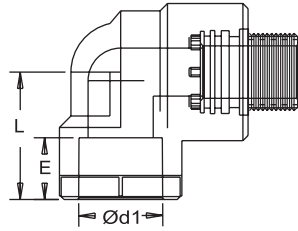
وصلة بسن انثى سداسية الشكل



CODE	SIZE	Ød ₁	L	E	QUANTITY
ADN-320100	Ø 32x1"	31.5	55	18	40
ADN-400100	Ø 40x1"	39.4	60	20.5	20
ADN-400114	Ø 40x1 1/4"	39.4	65	20.5	20
ADN-500112	Ø 50x1 1/2"	49.4	70	23.5	15
ADN-630200	Ø 63x2"	62.5	75	27.5	10
ADN-750212	Ø 75x2 1/2"	74.2	80	31	8
ADN-900300	Ø 90x3"	89.2	105	35.5	6
ADN-110400	Ø 110x4"	109	110	41.5	2
ADN-125500	Ø 125x5"	123.9	130	46.5	2

Male Elbow PN 25 / Угольник комбинированный НР PN 25

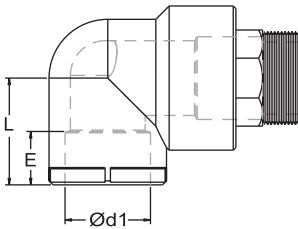
كوع بسن ذكر



CODE	SIZE	Ød ₁	L	E	QUANTITY
EDR-200012	Ø 20x1/2"	19.5	35	14.5	100
EDR-200034	Ø 20x3/4"	19.5	35	14.5	75
EDR-250012	Ø 25x1/2"	24.5	40	16	75
EDR-250034	Ø 25x3/4"	24.5	40	16	75
EDR-320012	Ø 32x1/2"	31.5	45	18	30
EDR-320034	Ø 32x3/4"	31.5	45	18	30
EDR-320100	Ø 32x1"	31.5	45	18	30

Male Elbow Hexagonal PN 25 / Угольник комбинированный НР под ключ PN 25

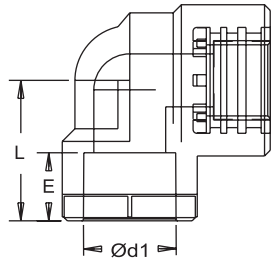
كوع بسن ذكر (سداسي الشكل)



CODE	SIZE	Ød ₁	L	E	QUANTITY
AED-320100	Ø 32x1"	31.5	38.5	18	30
AED-400114	Ø 40x1 1/4"	39.4	48.5	20.5	20

Female Elbow PN 25 / Угольник комбинированный ВР PN 25

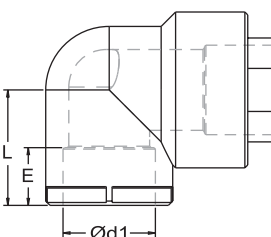
كوع بسن انثى



CODE	SIZE	Ød ₁	L	E	QUANTITY
DDR-200012	Ø 20x1/2"	19.5	35	14.5	100
DDR-200034	Ø 20x3/4"	19.5	35	14.5	80
DDR-250012	Ø 25x1/2"	24.5	40	16	100
DDR-250034	Ø 25x3/4"	24.5	40	16	80
DDR-320012	Ø 32x1/2"	31.5	45	18	30
DDR-320034	Ø 32x3/4"	31.5	45	18	30
DDR-320100	Ø 32x1"	31.5	45	18	30

Female Elbow Hexagonal PN 25 / Угольник комбинированный ВР под ключ PN 25

كوع بسن انثى (سداسي الشكل)

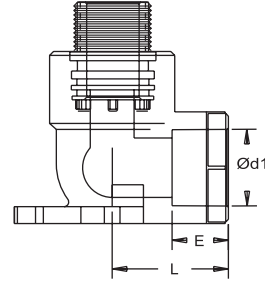


CODE	SIZE	Ød ₁	L	E	QUANTITY
ADD-320100	Ø 32x1"	31.5	38.5	18	30
ADD-400114	Ø 40x1 1/4"	39.4	48.5	20.5	20

Male Battery Triple Connection PN 25 / Уголок для смесителя НР PN 25 Особый

كوع نهاية خط (ذكر)

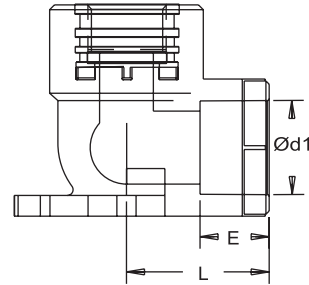
CODE	SIZE	Ød ₁	L	E	QUANTITY
3EB-200012	Ø 20x1/2"	19.5	30	14.5	60
3EB-250012	Ø 25x1/2"	24.5	33	16	50



Female Battery Triple Connection PN 25 / Уголок для смесителя ВР PN 25 Особый

كوع نهاية خط (أنثى)

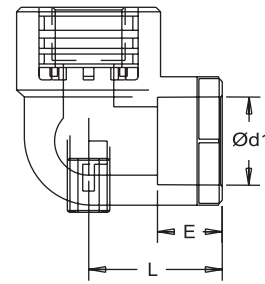
CODE	SIZE	Ød ₁	L	E	QUANTITY
3DB-200012	Ø 20x1/2"	19.5	30	14.5	75
3DB-250012	Ø 25x1/2"	24.5	33	16	60



Female Battery PN 25 / Уголок для смесителя ВР PN 25

كوع نهاية خط (أنثى)

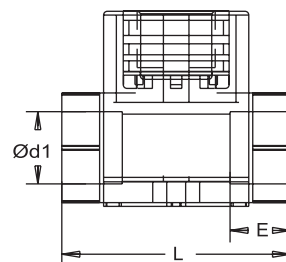
CODE	SIZE	Ød ₁	L	E	QUANTITY
2DB-250034	Ø 25x3/4"	24.5	40	16	60



Battery Bypass PN 25 / Байпасный уголок для смесителя ВР PN 25

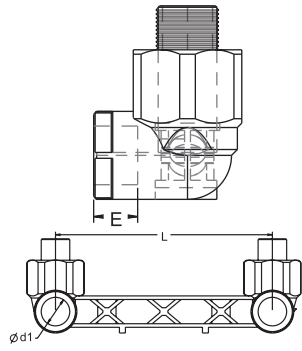
كوع نهاية خط أنثى (مزدوج)

CODE	SIZE	Ød ₁	L	E	QUANTITY
GBT-200012	Ø 20x1/2"	19.5	60	14.5	50



Male Double Battery Connection PN 25 / Планка для смесителя HP PN 25

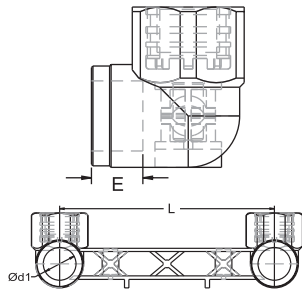
قاعدة خلاط مع كوع



CODE	SIZE	Ød ₁	L	E	QUANTITY
ECB-200012	Ø 20x1/2"	19.5	150	14.5	20
ECB-200034	Ø 20x3/4"	19.5	150	14.5	20
ECB-250012	Ø 25x1/2"	24.5	150	16	20
ECB-250034	Ø 25x3/4"	24.5	150	16	20

Female Double Battery Connection PN 25 / Планка для смесителя BP PN 2

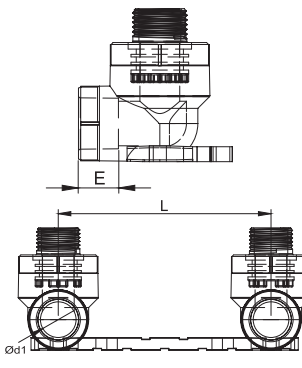
قاعدة خلاط مع كوع



CODE	SIZE	Ød ₁	L	E	QUANTITY
CBT-200012	Ø 20x1/2"	19.5	150	14.5	25
CBT-250012	Ø 25x1/2"	24.5	150	16	20

Male Double Battery Connection-Slab PN 25 / Планка для смесителя HP (плоский)

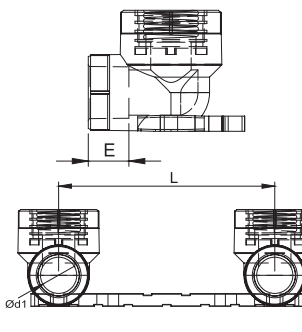
قاعدة خلاط سن خارجي



CODE	SIZE	Ød ₁	L	E	QUANTITY
EBU-200012	Ø 20x1/2"	19.5	150	14.5	20
EBU-200034	Ø 20x3/4"	19.5	150	14.5	20
EBU-250012	Ø 25x1/2"	24.5	150	16	20
EBU-250034	Ø 25x3/4"	24.5	150	16	20

Female Double Battery Connection-Slab PN 25 / Планка для смесителя BP (плоский)

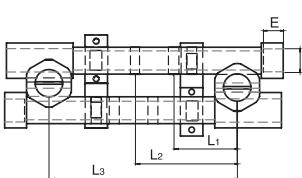
قاعدة خلاط سن داخلي



CODE	SIZE	Ød ₁	L	E	QUANTITY
DBU-200012	Ø 20x1/2"	19.5	150	14.5	25
DBU-200034	Ø 20x3/4"	19.5	150	14.5	25
DBU-250012	Ø 25x1/2"	24.5	150	16	20
DBU-250034	Ø 25x3/4"	24.5	150	16	20

Adjustable Battery PN 25 / Комплект универсальный настенный PN 25

قاعدة خلاط متحرك

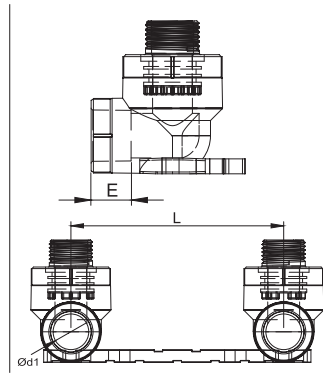


CODE	SIZE	Ød ₁	L ₁	L ₂	L ₃	E	QUANTITY
ABT-200012	Ø 20x1/2"	19.5	105	135	150	14.5	15
ABT-250012	Ø 25x1/2"	24.5	105	135	150	16	10

Male Bidet Battery - Dual PN 25 / Планка для сместителя HP Bidet (двойной)

قاعدة خلاط للطهارة WC سن خارجي 10 سم

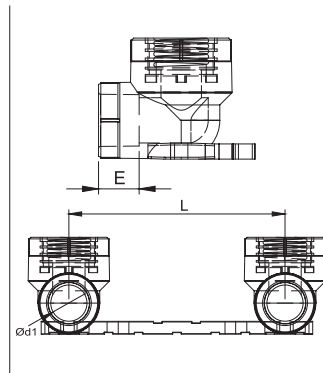
CODE	SIZE	Ød ₁	L	E	QUANTITY
EBK-200012	Ø 20x1/2"	19.5	100	14.5	30
EBK-200034	Ø 20x3/4"	19.5	100	14.5	30
EBK-250012	Ø 25x1/2"	24.5	100	16	25
EBK-250034	Ø 25x3/4"	24.5	100	16	25



Female Bidet Battery - Dual PN 25 / Планка для сместителя BP Bidet (двойной)

قاعدة خلاط للطهارة WC سن داخلي 10 سم

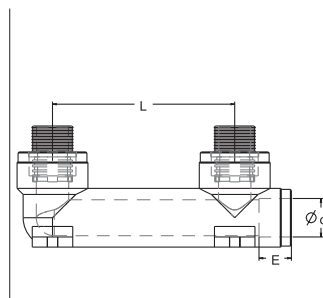
CODE	SIZE	Ød ₁	L	E	QUANTITY
DBK-200012	Ø 20x1/2"	19.5	100	14.5	30
DBK-250012	Ø 25x1/2"	24.5	100	16	25
DBK-250034	Ø 25x3/4"	24.5	100	16	25



Male Bidet Battery PN 25 / Планка для сместителя HP Bidet

قاعدة خلاط للطهارة WC سن خارجي

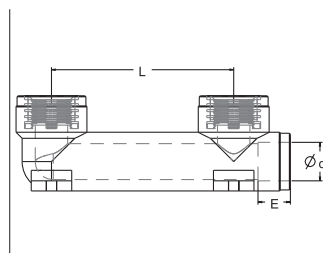
CODE	SIZE	Ød ₁	L	E	QUANTITY
ETB-200012	Ø 20x1/2"	19.5	90	14.5	30
ETB-250012	Ø 25x1/2"	24.5	90	16	25

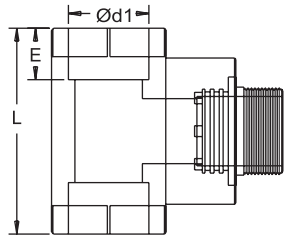


Female Bidet Battery PN 25 / Планка для сместителя BP Bidet

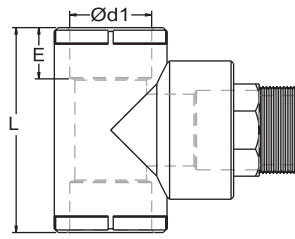
قاعدة خلاط للطهارة WC سن داخلي

CODE	SIZE	Ød ₁	L	E	QUANTITY
DTB-200012	Ø 20x1/2"	19.5	90	14.5	35
DTB-250012	Ø 25x1/2"	24.5	90	16	25

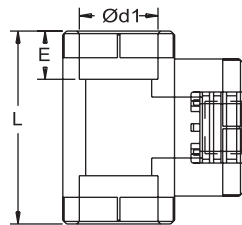




CODE	SIZE	Ød ₁	L	E	QUANTITY
ETE-200012	Ø 20x1/2"	19.5	52	14.5	100
ETE-200034	Ø 20x3/4"	19.5	52	14.5	75
ETE-250012	Ø 25x1/2"	24.5	59	16	75
ETE-250034	Ø 25x3/4"	24.5	59	16	50
ETE-320012	Ø 32x1/2"	31.5	70	18	30
ETE-320034	Ø 32x3/4"	31.5	44	18	30
ETE-320100	Ø 32x1"	31.5	44	18	30
ETE-400012	Ø 40x1/2"	39.4	77	20.5	20
ETE-400034	Ø 40x3/4"	39.4	77	20.5	20
ETE-400100	Ø 40x1"	39.4	82	20.5	20
ETE-500012	Ø 50x1/2"	49.4	87	23.5	15
ETE-500034	Ø 50x3/4"	49.4	87	23.5	15
ETE-500100	Ø 50x1"	49.4	102	23.5	15
ETE-630012	Ø 63x1/2"	62.5	120	27.5	12
ETE-630034	Ø 63x3/4"	62.5	120	27.5	12
ETE-630100	Ø 63x1"	62.5	120	27.5	12



CODE	SIZE	Ød ₁	L	E	QUANTITY
EAT-320100	Ø 32x1"	31.5	70	18	30
EAT-400114	Ø 40x1 1/4"	39.4	97.5	20.5	15

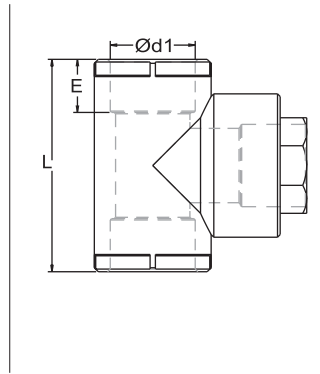


CODE	SIZE	Ød ₁	L	E	QUANTITY
DTE-200012	Ø 20x1/2"	19.5	60	14.5	100
DTE-200034	Ø 20x3/4"	19.5	60	14.5	75
DTE-250012	Ø 25x1/2"	24.5	52	16	75
DTE-250034	Ø 25x3/4"	24.5	66	16	50
DTE-320012	Ø 32x1/2"	31.5	80	18	30
DTE-320034	Ø 32x3/4"	31.5	80	18	30
DTE-320100	Ø 32x1"	31.5	80	18	30
DTE-400012	Ø 40x1/2"	39.4	77	20.5	20
DTE-400034	Ø 40x3/4"	39.4	77	20.5	20
DTE-400100	Ø 40x1"	39.4	82	20.5	20
DTE-500012	Ø 50x1/2"	49.4	87	23.5	15
DTE-500034	Ø 50x3/4"	49.4	87	23.5	15
DTE-500100	Ø 50x1"	49.4	102	23.5	15
DTE-630012	Ø 63x1/2"	62.5	120	27.5	12
DTE-630034	Ø 63x3/4"	62.5	120	27.5	12
DTE-630100	Ø 63x1"	62.5	120	27.5	12

Female Tee Hexagonal PN 25 / Тройник комбинированный ВР под ключ PN 25

تي بسن أنثى (سداسي)

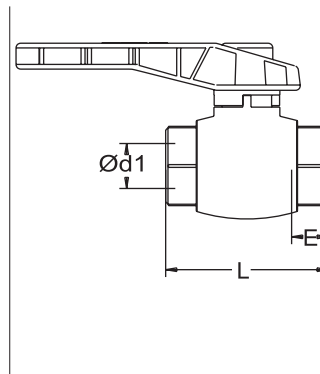
CODE	SIZE	Ød ₁	L	E	QUANTITY
DAT-320100	Ø 32x1"	31.5	80	18	30
DAT-400114	Ø 40x1 1/4"	39.4	97.5	20.5	20



Plastic Ball Valve PN 25 / Шаровый кран PN 25

محبس بلاستيك

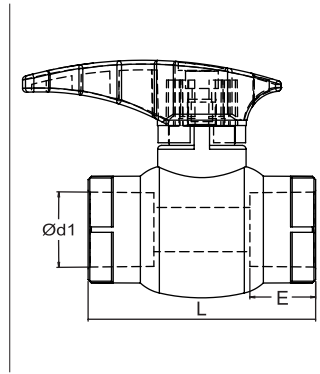
CODE	SIZE	Ød ₁	L	E	QUANTITY
KSV-200012	Ø 20	19.5	66	14.5	60
KSV-250034	Ø 25	24.5	73	16	40
KSV-320100	Ø 32	31.5	88	18	20
KSV-400114	Ø 40	39.4	105	20.5	12
KSV-500112	Ø 50	49.4	125	23.5	8
KSV-630200	Ø 63	62.5	150	27.5	4
KSV-750212	Ø 75	74.2	165	31	4



Plastic Ball Valve (Economic) PN 25 / Шаровый кран мини PN 25

محبس بلاستيك

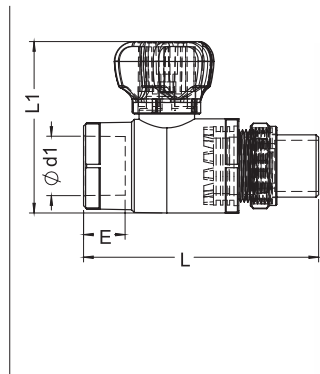
CODE	SIZE	Ød ₁	L	E	QUANTITY
KVE-200000	Ø 20	19.5	59	14.5	100
KVE-250000	Ø 25	24.5	64	16	70
KVE-320000	Ø 32	31.5	75	18	40



Radiator Valve Straight PN 25 / Вентиль для радиатора прямой PN 25

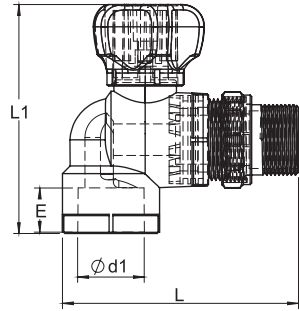
محبس بلاستيك بسن (ذكر)

CODE	SIZE	Ød ₁	L ₁	L	E	QUANTITY
KRN-200012	Ø 20x1/2"	19.5	67	89	14.5	50
KRN-250012	Ø 25x1/2"	24.5	67	89	16	50
KRN-250034	Ø 25x3/4"	24.5	72	94	16	40



Radiator Valve Elbow PN 25 / Вентиль для радиатора угловой PN 25

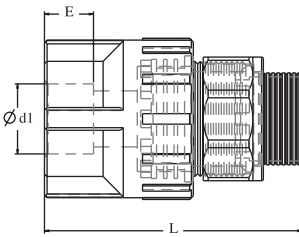
محبس بلاستيك بسن (ذكر)



CODE	SIZE	Ød ₁	L ₁	L	E	QUANTITY
KRD-200012	Ø 20x1/2"	19.5	83	87.5	14.5	50
KRD-250012	Ø 25x1/2"	24.5	83	87.5	16	50
KRD-250034	Ø 25x3/4"	24.5	90.5	91	16	40

Radiator Adaptor PN 25 / Муфта комбинированная разъемная для радиатора

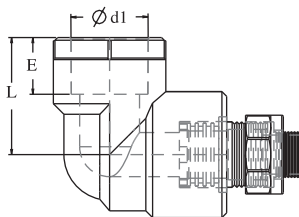
وصلة تحويل



CODE	SIZE	Ød ₁	L	E	QUANTITY
ORN-200012	Ø 20x1/2"	19.5	55	14.5	60
ORN-200034	Ø 20x3/4"	19.5	57	14.5	50
ORN-250012	Ø 25x1/2"	24.5	57	16	60
ORN-250034	Ø 25x3/4"	24.5	57	16	50

Radiator Elbow Adaptor PN 25 / Угольник комбинированный разъемный для радиатора

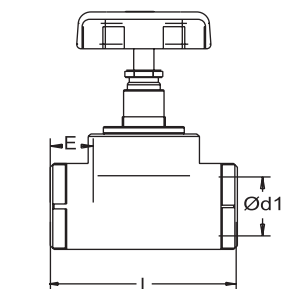
كوع تحويل



CODE	SIZE	Ød ₁	L	E	QUANTITY
ORD-200012	Ø 20x1/2"	19.5	30	14.5	60
ORD-200034	Ø 20x3/4"	19.5	35	14.5	50
ORD-250012	Ø 25x1/2"	24.5	40	18	60
ORD-250034	Ø 25x3/4"	24.5	40	18	50

Butterfly Valve PN 25 / Проходной вентиль PN 25

محبس بلاستيك

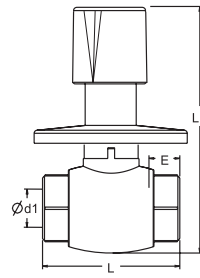


CODE	SIZE	Ød ₁	L	E	QUANTITY
KBV-200012	Ø 20	19.5	73	14.5	40
KBV-250034	Ø 25	24.5	73	16	30
KBV-320100	Ø 32	31.5	86	18	20
KBV-400114	Ø 40	39.4	93	20.5	15

Chrome Plated Ball Valve PN 25 / Шаровой кран с хромированной головкой (длинный)

محبس كروم

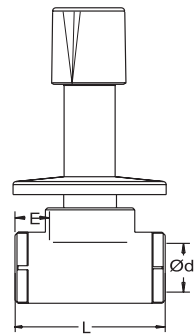
CODE	SIZE	Ød ₁	L	L ₁	E	QUANTITY
KKV-200012	Ø 20	19.5	68	140	14.5	25
KKV-250034	Ø 25	24.5	75	140	16	20
KKV-320100	Ø 32	31.5	87	140	18	15



Chrome Plated Valve PN 25 / Вентиль с хромированной головкой PN 25

محبس كروم

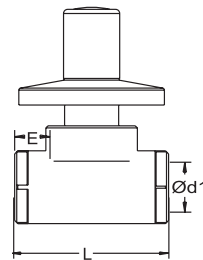
CODE	SIZE	Ød ₁	L	E	QUANTITY
KVZ-200012	Ø 20	19.5	73	14.5	25
KVZ-250034	Ø 25	24.5	73	16	20
KVZ-320100	Ø 32	31.5	86	18	15
KVZ-400114	Ø 40	39.4	93	20.5	10



Chrome Plated Valve Encastre PN 25 / Вентиль хромированный без головки PN 25

محبس كروم

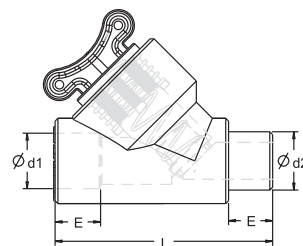
CODE	SIZE	Ød ₁	L	E	QUANTITY
KAV-200012	Ø 20	19.5	73	14.5	30
KAV-250034	Ø 25	24.5	73	16	25
KAV-320100	Ø 32	31.5	86	18	25
KAV-400114	Ø 40	39.4	93	20.5	20



Non Return Valve Male PN 25 / Клапан обратный внутр.-наруж. PN 25

صمام مصفي

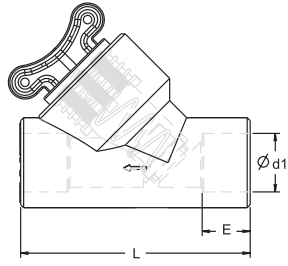
CODE	SIZE	Ød ₁	Ød ₂	L	E	QUANTITY
VEF-200012	Ø 20x1/2"	19.5	20.3	67	14.5	75
VEF-250034	Ø 25x3/4"	24.5	25.3	71	16	50
VEF-320100	Ø 32x1"	31.5	32.3	100	18	25



Non Return Valve Female PN 25 / Клапан обратный внутр.-внутр. PN 25

صمام مصفي

PATENTED

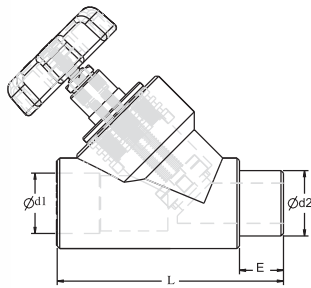


CODE	SIZE	Ød ₁	L	E	QUANTITY
VDF-200012	Ø 20x1/2"	19.5	67	14.5	75
VDF-250034	Ø 25x3/4"	24.5	71	16	50
VDF-320100	Ø 32x1"	31.5	100	18	25

Valve Male PN 25 / Вентиль внутр.-наруж. PN 25

محبس تحويل

PATENTED

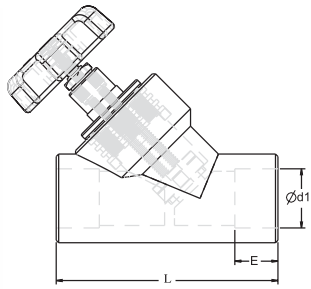


CODE	SIZE	Ød ₁	Ød ₂	L	E	QUANTITY
DDV-200012	Ø 20x1/2"	19.5	20.3	78	14.5	30
DDV-250034	Ø 25x3/4"	24.5	25.3	88	16	30
DDV-320100	Ø 32x1"	31.5	32.3	106	18	15

Valve Female PN 25 / Вентиль внутр.-внутр. PN 25

محبس تحويل

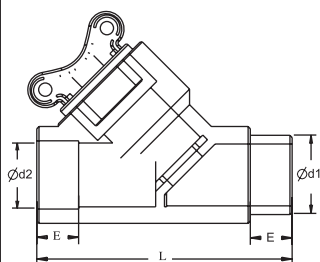
PATENTED



CODE	SIZE	Ød ₁	L	E	QUANTITY
IDV-200012	Ø 20x1/2"	19.5	78	14.5	30
IDV-250034	Ø 25x3/4"	24.5	88	16	30
IDV-320100	Ø 32x1"	31.5	106	18	15

Male Filter PN 25 / Фильтр внутр./наруж. PN 25

صمام مائل مصفي

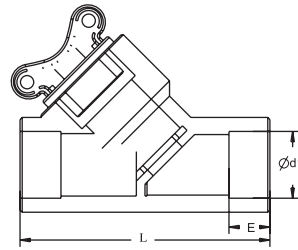


CODE	SIZE	Ød ₁	Ød ₂	L	E	QUANTITY
EFT-200012	Ø 20	20.3	19.5	78	14.5	75
EFT-250034	Ø 25	25.3	24.5	88	16	50
EFT-320100	Ø 32	32.3	31.5	106	18	25

Female Filter PN 25 / Фильтр внутр./внутр. PN 25

صمام مائل مصفي

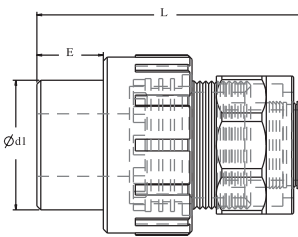
CODE	SIZE	Ød ₁	L	E	QUANTITY
DFT-200012	Ø 20	19.5	78	14.5	75
DFT-250034	Ø 25	24.5	88	16	50
DFT-320100	Ø 32	31.1	106	18	25



PEX Tail Adapter / Муфта комбинированная НР для трубы РЕ-Х

تحويل

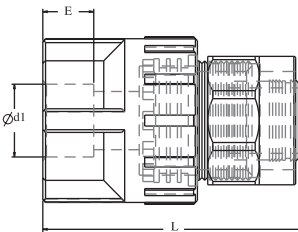
CODE	SIZE	Ød ₁	L	E	QUANTITY
PNK-201216	Ø 20x1/2x16	20.3	61	14.5	140



PEX Female Adapter / Муфта комбинированная ВР для трубы РЕ-Х

تحويل

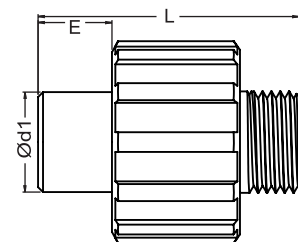
CODE	SIZE	Ød ₁	L	E	QUANTITY
DPN-201216	Ø 20x1/2x16	19.5	61	14.5	140



Tailed Male Nipple / Муфта комбинированная НР для бойлера

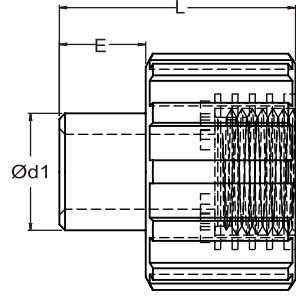
محول ذكر

CODE	SIZE	Ød ₁	L	E	QUANTITY
ENK-200012	Ø 20x1/2"	20.3	52	14.5	125
ENK-200034	Ø 20x3/4"	20.3	54	14.5	100
ENK-250012	Ø 25x1/2"	25.3	52	16	125
ENK-250034	Ø 25x3/4"	25.3	54	16	75



Tailed Female Nipple / Муфта комбинированная ВР для бойлера

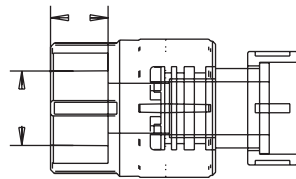
محول انثى



CODE	SIZE	Ød ₁	L	E	QUANTITY
DNK-200012	Ø 20x1/2"	20.3	41	14.5	150
DNK-200034	Ø 20x3/4"	20.3	41	14.5	150
DNK-250012	Ø 25x1/2"	25.3	41	16	150
DNK-250034	Ø 25x3/4"	25.3	41	16	150

Nipple with Nut PN 25 / Муфта с накидной гайкой PN 25

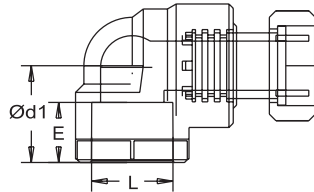
وصل رأس متحرك



CODE	SIZE	Ød ₁	E	QUANTITY
HNP-200012	Ø 20x1/2"	19.5	14.5	175
HNP-200034	Ø 20x3/4"	19.5	14.5	125
HNP-250012	Ø 25x1/2"	24.5	16	125
HNP-250034	Ø 25x3/4"	24.5	16	125
HNP-250100	Ø 25x1"	24.5	16	80
HNP-320034	Ø 32x3/4"	31.5	18	75
HNP-320100	Ø 32x1"	31.5	18	60
HNP-320114	Ø 32x1" 1/4"	31.5	18	50

Elbow with Nut PN 25 / Угольник с накидной гайкой PN 25

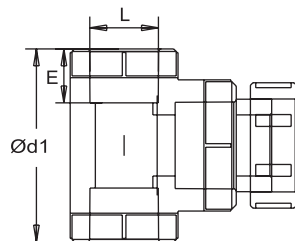
كوع رأس متحرك



CODE	SIZE	Ød ₁	L	E	QUANTITY
HDR-200012	Ø 20x1/2"	19.5	30	14.5	120
HDR-200034	Ø 20x3/4"	19.5	30	14.5	80
HDR-250034	Ø 25x3/4"	24.5	32	16	80
HDR-250100	Ø 25x1"	24.5	32	16	70
HDR-320034	Ø 32x3/4"	31.5	38	18	50
HDR-320100	Ø 32x1"	31.5	38	18	50
HDR-320114	Ø 32x1" 1/4"	31.5	38	18	40

Tee with Nut PN 25 / Тройник с накидной гайкой PN 25

تي رأس متحرك

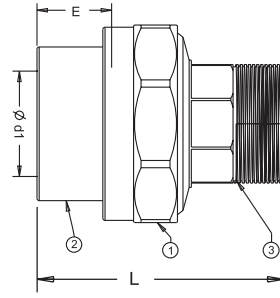


CODE	SIZE	Ød ₁	L	E	QUANTITY
HTE-200012	Ø 20x1/2"	19.5	30	14.5	125
HTE-200034	Ø 20x3/4"	19.5	30	14.5	80
HTE-250034	Ø 25x3/4"	24.5	32	16	80
HTE-250100	Ø 25x1"	24.5	32	16	60
HTE-320100	Ø 32x1"	31.5	38	18	30
HTE-320114	Ø 32x1" 1/4"	31.5	38	18	30

Transition Union Male PN 25 / Муфта комбинированная разъемная HP PN 25

شد وصل ذكّر (سداسي)

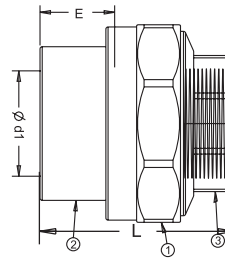
CODE	SIZE	Ød ₁	L	E	QUANTITY
MOE-200012	Ø 20x1/2"	19.5	60	14.5	175
MOE-200034	Ø 20x3/4"	19.5	60	14.5	150
MOE-200100	Ø 20x1"	19.5	47	14.5	160
MOE-250012	Ø 25x1/2"	24.5	65	16	120
MOE-250034	Ø 25x3/4"	24.5	65	16	100
MOE-250100	Ø 25x1"	24.5	65	16	100
MOE-320012	Ø 32x1/2"	31.5	67	18	80
MOE-320034	Ø 32x3/4"	31.5	67	18	80
MOE-320100	Ø 32x1"	31.5	67	18	75
MOE-320114	Ø 32x1 1/4"	31.5	69	18	60
MOE-400114	Ø 40x1 1/4"	39.4	69	20.5	40
MOE-500112	Ø 50x1 1/2"	49.4	73	23.5	25
MOE-630200	Ø 63x2"	62.5	75	27.5	16



Transition Union Female PN 25 / Муфта комбинированная разъемная BP PN 25

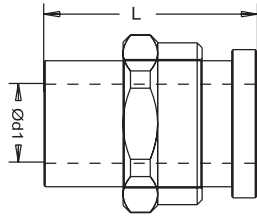
شد وصل أنثى (سداسي)

CODE	SIZE	Ød ₁	L	E	QUANTITY
MOD-200012	Ø 20x1/2"	19.5	50	14.5	200
MOD-200034	Ø 20x3/4"	19.5	50	14.5	175
MOD-200100	Ø 20x1"	19.5	39	14.5	175
MOD-250012	Ø 25x1/2"	24.5	55	16	125
MOD-250034	Ø 25x3/4"	24.5	55	16	125
MOD-250100	Ø 25x1"	24.5	55	16	100
MOD-320012	Ø 32x1/2"	31.5	57	18	90
MOD-320034	Ø 32x3/4"	31.5	57	18	80
MOD-320100	Ø 32x1"	31.5	57	18	80
MOD-320114	Ø 32x1 1/4"	31.5	59	18	70
MOD-400114	Ø 40x1 1/4"	39.4	60	20.5	50
MOD-500112	Ø 50x1 1/2"	49.4	62	23.5	25
MOD-630200	Ø 63x2"	62.5	65	27.5	16



Transition Nipple Male PN 25 / Штуцер с накидной гайкой HP PN 25

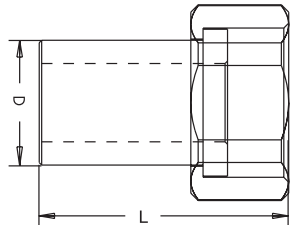
شد وصل ذكر



CODE	SIZE	Ød ₁	L	QUANTITY
ONE-200034	Ø 20x3/4"	20.3	38	200
ONE-250100	Ø 25x1"	25.3	43	150

Transition Nipple Female PN 25 / Штуцер с накидной гайкой BP PN 25

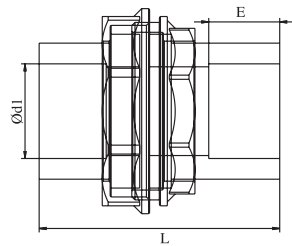
شد وصل أنثى



CODE	SIZE	Ød ₁	L	QUANTITY
OND-200034	Ø 20x3/4"	20.3	38	200
OND-250100	Ø 25x1"	25.3	43	150

Transition Union Two-Side Welwed PN 25 / Муфта соединительная для сварки PN 25 Металлическая

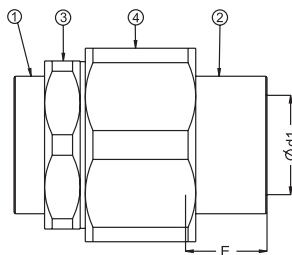
وصل لحام طرفين



CODE	SIZE	Ød ₁	E	L	QUANTITY
MCR-200000	Ø 20	19.5	14.5	56	100
MCR-250000	Ø 25	24.5	16	59	75
MCR-320000	Ø 32	31.5	18	60	50
MCR-400000	Ø 40	39.4	20.5	58	30
MCR-500000	Ø 50	49.4	23.5	58	25
MCR-630000	Ø 63	62.5	27.5	71	10

Union PN 25 / Муфта соединительная для сварки PN 25

وصل لحام طرفين

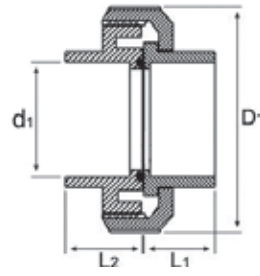


CODE	SIZE	Ød ₁	E	QUANTITY
CKR-200000	Ø 20	19.5	14.5	100
CKR-250000	Ø 25	24.5	16	60
CKR-320000	Ø 32	31.5	18	50

Union PN 25 / Муфта соединительная для сварки PN 25

وصل لحام طرفين

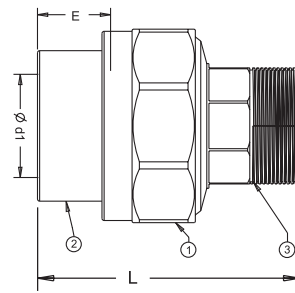
CODE	SIZE	Ød ₁	L ₁	L ₂	D ₁	QUANTITY
PKR-400000	Ø 40	39.4	29	39	82	40
PKR-500000	Ø 50	49.4	34	45	92	30
PKR-630000	Ø 63	62.5	41	55	112	16
PKR-750000	Ø 75	74.9	47	53	130	10
PKR-900000	Ø 90	89.9	56	61	181	6
PKR-110000	Ø 110	110	65	71	210	3



Plastic Transition Union Male PN 25 / Пластиковая разъемная муфта HP PN 25

محول ذكر بلاستيك

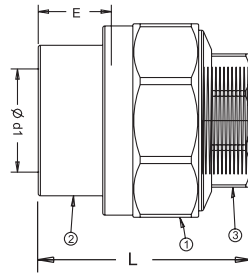
CODE	SIZE	Ød ₁	E	L	QUANTITY
POE-200012	Ø 20x1/2"	19.5	14.5	60	100
POE-250034	Ø 25x3/4"	24.5	16	65	70
POE-320100	Ø 32x1"	31.5	18	67	50



Plastic Transition Union Female PN 25 / Пластиковая разъемная муфта BP PN 25

محول انثى بلاستيك

CODE	SIZE	Ød ₁	E	L	QUANTITY
POD-200012	Ø 20x1/2"	19.5	14.5	50	100
POD-250034	Ø 25x3/4"	24.5	16	55	80
POD-320100	Ø 32x1"	31.5	18	57	60



Boiler Set PN 25 / Комплект для бойлеров PN 25

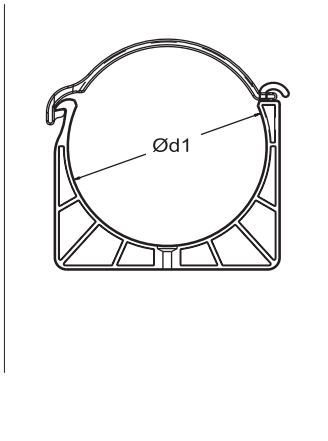
مجموعة خزان الماء

CODE	BOX CONTENTS	QUANTITY
KHN-080000	With Screwed Nipple (8 Pcs)	8
KHN-100000	With Screwed Nipple (10 Pcs)	8
KHD-080000	With Screwed Elbow (8 Pcs)	8
KHD-100000	With Screwed Elbow (10 Pcs)	8
KEN-080000	With Mail Nipple (8 Pcs)	8
KEN-100000	With Mail Nipple (10 Pcs)	8
KED-080000	With Mail Elbow (8 Pcs)	8
KED-100000	With Mail Elbow (10 Pcs)	8



PP-R Waste Water Clamp / Браслет для сливных труб

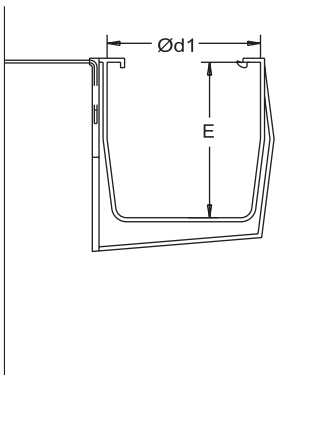
مربط بلاستيك



CODE	SIZE	Ød ₁	QUANTITY
ATK-050000	Ø 50	50	250
ATK-063000	Ø 63	63	100
ATK-075000	Ø 75	75	100
ATK-110000	Ø 110	110	130
ATK-125000	Ø 125	125	100
ATK-160000	Ø 160	160	60
ATK-200000	Ø 200	200	40

PP-R Rain Gutter Clamp / Опора ПВХ для канала

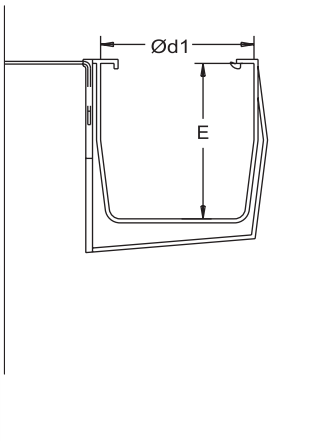
مربط بلاستيك



CODE	SIZE	Ød ₁	E	QUANTITY
PDK-150000	150	150	150	75

PP-R Rain Gutter Clamp with Metallic Support / Опора ПВХ для канала

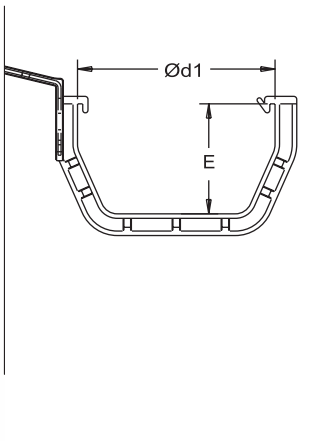
مربط بلاستيك



CODE	SIZE	Ød ₁	E	QUANTITY
MDK-150000	150	150	150	75

PP-R Special Rain Gutter Clamp / Опора ПВХ для канала

مربط بلاستيك

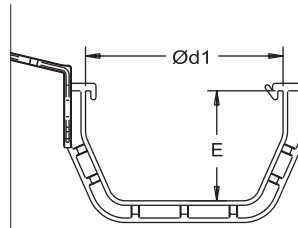


CODE	SIZE	Ød ₁	E	QUANTITY
PDK-125000	125	125	75	100

PP-R Special Rain Gutter Clamp with Metallic Support / Опора ПВХ для канала

مربط بلاستيك

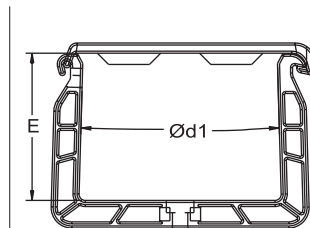
CODE	SIZE	Ød ₁	E	QUANTITY
MDK-125000	125	125	75	100



PP-R Special Waste Water Clamp / Особый Браслет для сливных труб

مربط بلاستيك

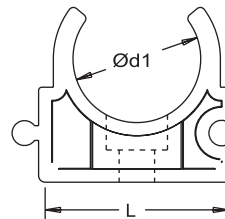
CODE	SIZE	Ød ₁	E	QUANTITY
PIK-100000	100	100	75	100



Single Clamp / Опора

حاملة الانبوب

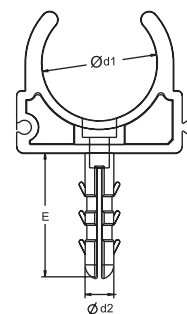
CODE	SIZE	Ød ₁	L	QUANTITY
TKP-200000	Ø 20	20	32	3000
TKP-220000	Ø 22 Foiled Pipe	22	36	2500
TKP-250000	Ø 25	25	39	2500
TKP-270000	Ø 27 Foiled Pipe	27	41	2500
TKP-320000	Ø 32	32	46	1800
TKP-340000	Ø 34 Foiled Pipe	34	48	1500
TKP-400000	Ø 40	40	54	1000



Single Fixing Clamp / Опора с дюбелем

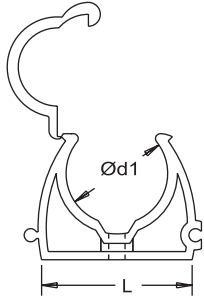
حاملة الانبوب

CODE	SIZE	Ød ₁	Ød ₂	E	QUANTITY
DTK-200000	Ø 20	20	8	28	2000
DTK-250000	Ø 25	25	8	28	1500
DTK-320000	Ø 32	32	8	28	1000



Clamp with Cover / Опора с креплением

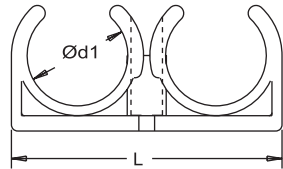
حاملة الانبوب المغلقة الثتاية



CODE	SIZE	Ød ₁	L	QUANTITY
KPK-160000	Ø 16	16	28	2500
KPK-200000	Ø 20	20	32	2000
KPK-220000	Ø 22 Foiled Pipe	22	34	2000
KPK-250000	Ø 25	25	37	2000
KPK-270000	Ø 27 Foiled Pipe	27	39	1500
KPK-320000	Ø 32	32	44	1000
KPK-400000	Ø 40	40	52	750
KPK-500000	Ø 50	50	62	500

Double Clamp / Опора двойная

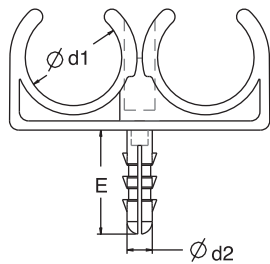
حاملة الانبوب الثتاية



CODE	SIZE	Ød ₁	L	QUANTITY
CKP-202200	Ø 20-22	20-22	60	1800
CKP-252700	Ø 25-27	25-27	65	1400
CKP-323400	Ø 32-34	32-34	72	750

Double Fixing Clamp / Двойная опора с дюбелем

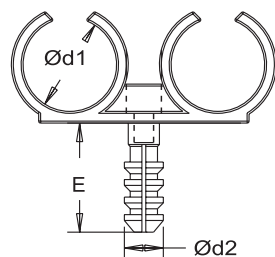
حاملة الانبوب الثتاية



CODE	SIZE	Ød ₁	Ød ₂	E	QUANTITY
CDK-200000	Ø 20	20	8	28	2000
CDK-250000	Ø 25	25	8	28	1500
CDK-320000	Ø 32	32	8	28	750

Double Croshet with Plug / Опора двойная с креплением

اداة تثبيت الانابيب بالارض

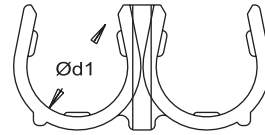


CODE	SIZE	Ød ₁	Ød ₂	E	QUANTITY
DCK-250000	Ø 25	25	8	28	1000

Double Croshet / Двойной выход

ماسكة انابيب اللولبي

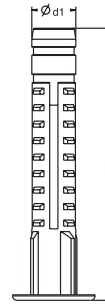
CODE	SIZE	Ød ₁	QUANTITY
CTK-250000	Ø 25	22	2500



Fixing / Пластиковый дюбель

سدة من بلاستيك

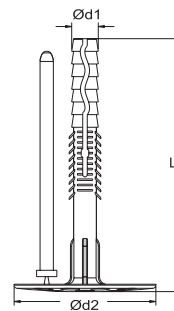
CODE	SIZE	Ød ₁	L	QUANTITY
PDB-060000	M6	6	30	30000
PDB-080000	M8	8	45	10000
PDB-100000	M10	10	60	5000



Isolation Plug / Дюбель для изоляции (страфор)

سدة و مسمار من بلاستيك

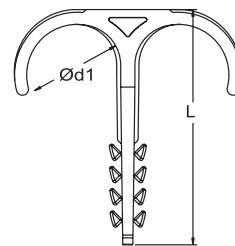
CODE	SIZE	Ød ₁	Ød ₂	L	QUANTITY
STD-100000	Ø 10	10	55	100	600



Double Pipe Fixture / Крюк пластмассовый для фиксации труб двойной

مشة حابس الانابيب

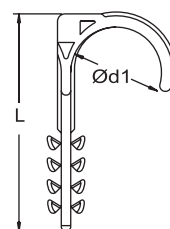
CODE	SIZE	Ød ₁	L	QUANTITY
CYT-250000	Ø 25	22	56	4000



Single Pipe Fixture / Крюк пластмассовый для фиксации труб одинарный

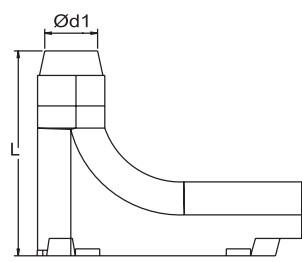
اداة التثبيت الانبوب

CODE	SIZE	Ød ₁	L	QUANTITY
TYT-250000	Ø 25	22	56	8000



Corner Conduit / Угловая подводка

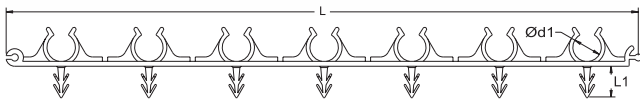
تقويم الجانِب



CODE	Ød ₁	L	QUANTITY
KDZ-180000	18	90	200

Pipe Holder with Clips / Профиля с крепителями (кппсы)

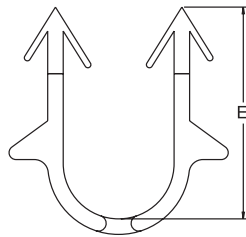
حابس الأنابيب



CODE	Ød ₁	L ₁	L	QUANTITY
KPL-160000	16	17.5	360	350

Pipe Bracket / Крепитель для труб

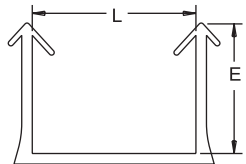
ماسكة الأنبوب



CODE	SIZE	E	QUANTITY
BRT-200000	20	37	8000

Holder Bracket / Крепитель для профиля

حابس الأنابيب اللولبي



CODE	SIZE	L	E	QUANTITY
LMT-240000	24	24	24	8000

Transition for Gas Pipes / Муфта переходная для газовой Трубы (Межстенная)

أنبوب إنتقالي (لنقل الأنابيب الغاز من الجدار)



CODE	SIZE	QUANTITY
BGS-000034	Ø 25x3/4"	175
BGS-000100	Ø 32x1"	140

Transition for PEX Pipes / Переходник для трубы ПЕХ

تحويله للأنابيب بكس

CODE	COLOR	QUANTITY
BGP-160000	White	120
BGP-160000	Chrome	75



End Cup for PEX Pipes / Заглушка для Трубы PEX-b

طاية أنابيب باكس

CODE	QUANTITY
BTP-161700	5000



Ventilation Grills / Решетка для вентиляционного прохода

منفذ للغاز

CODE	QUANTITY
DMZ-000000	100



PEX-b Pipes / Труба PEX-b

انبوب البكس

CODE	SIZE	QUANTITY
PBR-160000	Ø 16x2	160



Kada / Манжета эксцентрическая

أوفسيت مقعد

CODE	SIZE	QUANTITY
EKK-110000	Ø 110	



Joint Gasket / PVC-U Манжета

جوان

CODE	SIZE	QUANTITY
ADC-050000	Ø 50	



Metal Plug / Metallicheskiy shpetsel

مسمار معدني



CODE	SIZE	QUANTITY
CKD-060000	M6	100
CKD-080000	M8	100
CKD-100000	M10	100
CKD-120000	M12	100

Special Metal Plug / Osobyi metallicheskiy shpetsel

مسمار معدني



CODE	SIZE	QUANTITY
CMD-080000	M8	100
CMD-100000	M10	100
CMD-120000	M12	100

Metal Plug Straight / Osobyi metallicheskiy shpetsel

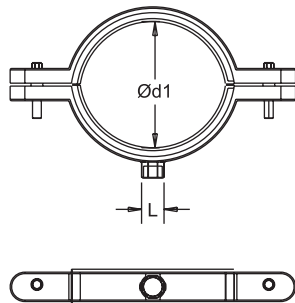
مسمار معدني



CODE	SIZE	QUANTITY
GMD-060000	M6	100
GMD-080000	M8	100
GMD-100000	M10	100
GMD-120000	M12	100

Metal Clamp + Triphon / Хомуты с гайкой для труб

مسكة من الكروم بدون انبوب



CODE	SIZE	ROD	Ød ₁	QUANTITY
STK-000038	3/8"	8 Rod	3/8	300
STK-000012	1/2"	8 Rod	1/2	300
STK-000034	3/4"	8 Rod	3/4	250
STK-000100	1"	8 Rod	1	200
STK-000114	1 1/4"	8 Rod	1 1/4	150
STK-000112	1 1/2"	8 Rod	1 1/2	125
STK-000200	2"	8 Rod	2	100
STK-000212	2 1/2"	10 Rod	2 1/2	60
STK-000300	3"	10 Rod	3	50
STK-000312	3 1/2"	10 Rod	3 1/2	50
STK-000400	4"	10 Rod	4	50
STK-000412	4 1/2"	10 Rod	4 1/2	50
STK-000500	5"	10 Rod	5	30
STK-000512	5 1/2"	10 Rod	5 1/2	30
STK-000600	6"	10 Rod	6	30
STK-000800	8"	12 Rod	8	30
STK-001000	10"	12 Rod	10	10

Pipe Cutter / ножницы для труб

مقص الأنبوب

CODE

DBM-001242	GM 0012-42
DBM-002863	GM 0028-63
DBM-002775	GM 0027-75



Welding Kit / Комплект сварочного аппарата

مكينة لحام الانابيب

CODE

KMS-000500	GM 0005
KMS-0008A0	GM 0008
KMS-002100	GM 0021



Single Welding Machine / Отдельный сварочный аппарат

مكينة لحام الانبوب

CODE

LKM-0009A0	GM 0009A
SKM-000900	GM 0009
PKM-0009B0	GM 0009B



Test Pressure Pump / Тест Насос (0-60 Bar)

مضخة التجربة نيت

CODE

TSP-003000	GM 0030
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CODE	SIZE
BTA-202500	Ø 20x25
BTA-324000	Ø 32x40
BTA-506300	Ø 50x63



CODE	SIZE
BKP-200000	Ø 20
BKP-250000	Ø 25
BKP-320000	Ø 32
BKP-400000	Ø 40
BKP-500000	Ø 50
BKP-630000	Ø 63
BKP-750000	Ø 75
BKP-900000	Ø 90
BKP-110000	Ø 110
BKP-125000	Ø 125



CODE
BKA-000000



CODE	SIZE
BKP-632000	Ø 63/20
BKP-632500	Ø 63/25
BKP-633200	Ø 63/32
BKP-752000	Ø 75/20
BKP-752500	Ø 75/25
BKP-753200	Ø 75/32
BKP-902000	Ø 90/20
BKP-902500	Ø 90/25
BKP-903200	Ø 90/32
BKP-110200	Ø 110/20
BKP-110250	Ø 110/25
BKP-110320	Ø 110/32

Transport & Storage



Store the pipe and fittings sheltered from sun and rain.
Do not expose the UV radiation for a long time.



Do not store at temperatures below 0°C.
Impacts can form cracks on pipes.



Protect the impact of hard and sharp objects.



Although it is quite durable please do not throw of during loading and unloading.



Please move carefully and stacked.

النقل والتخزين

خزن الأنابيب وملحقاتها بعيداً عن أشعة الشمس والمطر.
لا تعرضها للأشعة فوق البنفسجية لفترة طويلة.



لا تخزن في درجة حرارة أقل من 0 درجة مئوية.
التأثيرات: قد تسبب تشقق في الأنابيب



الأجسام الحادة والصلبه قد تسبب التلف



الرجاء عدم رمي خلال التحميل والتفريغ.



الرجاء نقل بعناية وترتيب



Транспорт и хранение



Хранить трубы и фитинги, защищенном от солнца и дождя месте. Не подвергайте в течение длительного времени УФ-излучению.



Не храните при температуре ниже 0°C.
Есть вероятность образования трещины на трубах.



Защищать от воздействия твердых и острых предметов.



Не бросать во время погрузки и разгрузки.



Передвигайте и складывайте осторожно.

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