

PP-R Water Pipe and Fittings PP-R / Aluminum Composite Pipe and Fittings



China Lesso Group Holdings Limited (Stock Name: China Lesso, Stock Code: 02128.HK) is a large industrial group of home furnishings and building materials in China. China Lesso's business portfolio spans plastic piping, building materials and home furnishings, environmental protection, supply-chain service platforms and the photovoltaic sector. It offers products such as pipes, photovoltaics, plumbing and sanitary ware, integral kitchen materials, integral doors and windows, aluminum formwork and smart scaffolds, water purifiers, water-proofing materials and sealants, fire-fighting equipment, valves, cables, lighting, hygiene materials, items for environmental protection, agricultural facilities, and oceanic aquaculture cages. Its sales revenue has reached RMB 32.058 billion in 2021.

With the rapid development of internationalization and globalization, China Lesso boasts more than 30 advanced production bases distributed in 18 provinces across China, and in some foreign countries. China Lesso remains committed to improving its strategic layout, broadening its sales network and expanding the market. This is how it provides products and services for customers in a timely and efficient way.

China Lesso has established its R&D center with more than 1,000 scientific researchers. The Group now possesses twenty-eight national high-tech enterprises, one national accredited enterprise technology center, two post-doctoral workstations, five China national accredited laboratories authorized by CNAS, one key enterprise laboratory of plastics molding and processing technology in Guangdong Province, and one union of Technical Innovation of Plastic Pipe Industry in Guangdong Province.

China Lesso owns over 2200 patents (some of them are pending). Some of Lesso's scientific achievements are included in National Torch Plan Projects, National Key New Product, Scientific Achievements Promotion Projects in National Construction Industry and Government Green Procurement List. The Group has been awarded many honorary titles and prizes, such as Champion Manufacturer, China Construction Independent Science Innovation Superior Enterprise, Intellectual Property Right Preponderant Enterprise, Industrialization Demonstration Base, Outstanding Patent Owner in China, Guangdong Provincial Government Quality Prize, and the First Prize of Scientific Technological Progress in Guangdong Province, and the First Prize of Scientific Technological Progress of China Light Industry Association.

As a domestic manufacturer of extensive home furnishings and building materials, China Lesso provides over 10,000 varieties of products with all specifications. Its products are being widely used in many areas, including home decoration, civil construction, municipal water supply, drainage, power supply and telecommunications, gas supply, fire-fighting, environmental protection, agriculture, oceanic aquaculture, and photovoltaic power generation.

True to its slogan of "Envisioning the Better, Building the Future", China Lesso will honor its promise of creating a healthy, enjoyable, and sustainable environment. The Group remains committed to improvements in urban construction to create better places to live. With concerted efforts from various sectors, Lesso will fully play its role in building green, livable, and efficient cities so that people could enjoy health and happiness anytime and anywhere in their city life.



LESSO Research Institute & Testing Center



LESSO College



Training Apartment



LESSO Headquarter

FEEL THE BETTER LIFE

Pipes, Building Materials and Home Furnishings,
Environmental Protection, Channels and Services



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Illustration of commercial mark included
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■ Product Overview

- ⊗ **Material:** Random Polypropylene
- ⊗ **Size:** full 16mm through 160mm availability
- ⊗ **Pressure Rating:** 1.25MPa, 1.6MPa, 2.0MPa, 2.5MPa
- ⊗ **Standard:** ISO 15874-2, EN ISO 15874-2, W270
BS EN ISO 15874-2, BS 6920, DIN 8077, DIN 8078,
GB/T 18742-2
- ⊗ **Colors:**
 - Light grey or white, pipe for cold water is marked with blue stripes, pipe for hot water is marked with red stripes
 - Other colors are also available upon request
- ⊗ **Form Supplied:**
 - 4 meters straight length (all size)
 - 50 or 100 meters coil length (d_n16~d_n32)
 - Other forms are also available upon request



■ Advantages

- ⊗ **High Temperature Resistance:** the maximum sustained working temperature is up to 70°C, the maximum transient temperature is up to 95°C.
- ⊗ **Heat Preservation:** low thermal conductivity which is only 1/1500 of brass pipe, and 1/250 of steel pipe.
- ⊗ **Non-toxic:** no heavy metal additives, would not be covered with dirt or contaminated by bacterium.
- ⊗ **Corrosion Resistance:** resist chemical matters and electron chemical corrosion.
- ⊗ **High Flow Capacity:** smooth interior walls and low friction result in low flow resistance and high volume.
- ⊗ **Excellent Flexibility:** can be supplied in coil.
- ⊗ **Low Installation Costs:** light weight and ease of installation can reduce installation costs
- ⊗ **Longevity:** more than 50 years under proper use
- ⊗ **Recycled and Environment-friendly**

■ Applications

- ⊗ Cold and hot water supply
- ⊗ Heating system including flooring heating, wall heating and radiant system
- ⊗ Central air conditioning system
- ⊗ Industrial liquids transportation

■ Physical Properties

Properties	Typical Value
Specific Gravity, g/cm ³ (20°C)	0.89 ~ 0.91
Tensile Strength, MPa	≥20
Modulus of Elasticity, N/mm ² (20°C)	800
Thermal Conductivity, w/(m·k) (20°C)	0.23 ~ 0.24
Coefficient of Linear Expansion, mm/(m·k)	0.14 ~ 0.16
Longitudinal Reversion, % (135°C, 2h)	≤2
Hydraulic Pressure Test	20°C, 1h, Hoop Stress is 16MPa
	95°C, 1000h, Hoop Stress is 3.5MPa
	110°C, 8760h, Hoop Stress is 1.90MPa

Note: The plastic fittings should be adopted threaded metal fittings with corrosion resistance when they are intended to connect with metal pipe and water transportation device.

Straight Pipe

S5 (PN 1.25) * Suitable for Cold Water Supply

SAP Number (white/4M)	SAP Number (gray/4M)	d _n (mm)	e _n (mm)
8010060129	8010060161	20	2.0
8010060134	8010060165	25	2.3
8010060138	8010060169	32	2.9
8010060141	8010060174	40	3.7
8010060145	8010060177	50	4.6
8010060149	8010060181	63	5.8
8010060405	8010060411	75	6.8
8010060408	8010060415	90	8.2
8010060122	8010060152	110	10.0
8010060876	8010060815	125	11.4
8010060124	8010060157	160	14.6

S4 (PN 1.6) * Suitable for Cold Water Supply

SAP Number (white/4M)	SAP Number (gray/4M)	d _n (mm)	e _n (mm)
8010060047	8010060078	16	1.9
8010060051	8010060082	20	2.3
8010060056	8010060087	25	2.8
8010060060	8010060092	32	3.6
8010060064	8010060095	40	4.5
8010060068	8010060102	50	5.6
8010060072	8010060105	63	7.1
8010060388	8010060394	75	8.4
8010060390	8010060400	90	10.1
8010060045	8010060075	110	12.3
8010060877	8010060816	125	14
8010060049	8010060079	160	17.9

S3.2 (PN 2.0) * Suitable for Cold or Hot Water Supply

SAP Number (white/4M)	SAP Number (gray/4M)	d _n (mm)	e _n (mm)
8010060304	8010060341	16	2.2
8010060310	8010060348	20	2.8
8010060317	8010060353	25	3.5
8010060322	8010060357	32	4.4
8010060326	8010060361	40	5.5
8010060330	8010060366	50	6.9
8010060334	8010060370	63	8.6
8010060435	8010060441	75	10.3
8010060438	8010060445	90	12.3
8010060301	8010060337	110	15.1
8010060878	8010060817	125	17.1
8010060307	8010060343	160	21.9

S2.5 (PN 2.5) * Suitable for Cold or Hot Water Supply

SAP Number (white/4M)	SAP Number (gray/4M)	d _n (mm)	e _n (mm)
8010060255	8010060273	20	3.4
8010060258	8010060276	25	4.2
8010060260	8010060280	32	5.4
8010060262	8010060283	40	6.7
8010060264	8010060285	50	8.3
8010060266	8010060291	63	10.5
8010060426	8010060430	75	12.5
8010060428	8010060432	90	15.0
8010060252	8010060268	110	18.3
8010060879	8010060818	125	20.8
8010060253	8010060271	160	26.6

Coil Pipe

S4 (PN 1.6) * Suitable for Cold Water Supply

d _n (mm)	SAP Number (white/50M)	SAP Number (gray/50M)	SAP Number (white/100M)	SAP Number (gray/100M)
16		8010060521	8010060720	8010060457
20	8010060722	8010060460	8010060452	8010060458
25	8010060723	8010060463	8010060454	8010060461
32		8010060465	8010060456	8010060464

S3.2 (PN 2.0) * Suitable for Cold or Hot Water Supply

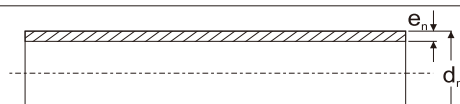
SAP Number (white/50M)	SAP Number (gray/50M)	SAP Number (white/100M)	SAP Number (gray/100M)
		8010060732	8010060488
8010060733	8010060490	8010060483	8010060489
	8010060494	8010060485	8010060491
	8010060497	8010060487	8010060496

S5 (PN 1.25) * Suitable for Cold Water Supply

d _n (mm)	SAP Number (white/50M)	SAP Number (gray/50M)	SAP Number (white/100M)	SAP Number (gray/100M)
20	8010061043	8010060571	8010060466	8010060470
25	8010060726	8010060473	8010060467	8010060471
32	8010061308	8010060475	8010060469	8010060474

S2.5 (PN 2.5) * Suitable for Cold or Hot Water Supply

SAP Number (white/50M)	SAP Number (gray/50M)	SAP Number (white/100M)	SAP Number (gray/100M)
	8010060480	8010060477	8010060479
	8010060730	8010060532	8010060481
	8010060731	8010061092	8010060482



S: Pipe Series
PN: Nominal Pressure (unit: MPa)

d_n: Nominal Outside Diameter
e_n: Nominal Wall Thickness

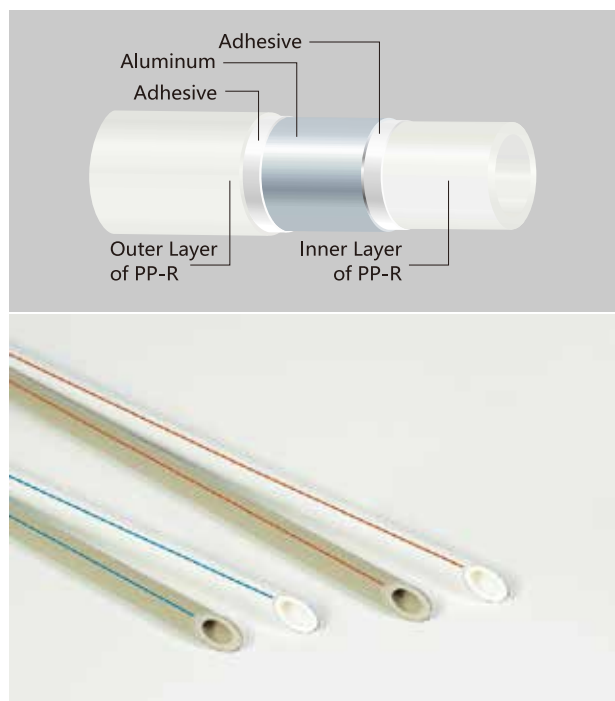
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■ Product Overview

- ⊗ **Material:** PP-R and Al
- ⊗ **Size:** full 20mm through 110mm availability
- ⊗ **Pressure Rating:** 1.6MPa, 2.0MPa, 2.5MPa
- ⊗ **Standard:** CJ/T 210-2005
- ⊗ **Colors:**
 - Light grey or white, pipe for cold water is marked with blue stripes, pipe for hot water is marked with red stripes.
 - Other colors are also available upon request.
- ⊗ **Form Supplied:**
 - 4 meters straight length (all size).
 - 50 or 100 meters coil length ($d_{n20} \sim d_{n32}$).
 - Other forms are also available upon request.



■ Applications

- ⊗ Cold or hot water supply
- ⊗ Heating system including flooring heating, wall heating and radiant system
- ⊗ Central air conditioning system
- ⊗ Industrial liquids transportation

■ Advantages

Apart from PPR pipe's advantages, its linear expansion coefficient is low, which makes it not curve when transporting hot water for long time.

■ Physical Properties

Item	Test Parameter					Index
	Temperature	Time(h)	Pressure of the Hydrostatic Pressure Test			
			S4	S3.2	S2.5	
Longitudinal Reversion, %	135 ± 2	e _n ≤8mm: 1 8mm< e _n ≤16mm: 2 e _n > 16mm: 4	—			≤2
Hydrostatic Pressure Test	20	1	4.00	5.00	6.40	No Failure
	95	22	1.05	1.31	1.68	
	95	165	0.95	1.19	1.52	
	95	1000	0.88	1.09	1.40	
Melt Flow Rate, MFR (230℃/2. 1kg) g/10min						Rate of change≤30% of the raw material

Note: Please check the standards for the other performances.

Dimension Data Sheet (Unit :mm)

Nominal Diameter Dn	Mean O.D.		Referential I.D.			Min. Length of Machining
	Min.	Max.	S4	S3.2	S2.5	
40	42	42.6	30.5	28.2	25.9	230
50	52	52.7	38.2	35.5	32.6	235
63	65.4	66.2	48.1	44.8	41	255
75	77.8	78.7	58.3	54.4	49.8	275
90	93.3	94.3	70	65.4	59.8	290
110	114	115.1	85.8	79.9	73.2	300

S4 (PN 1.6) * Suitable for Cold or Hot Water Supply

Cold Water Supply				Hot Water Supply				d _n (mm)	e _n (mm)	e _n ' (mm)
SAP Number (white/4M)	SAP Number (gray/4M)	SAP Number (white/100M)	SAP Number (gray/100M)	SAP Number (white/4M)	SAP Number (gray/4M)	SAP Number (white/100M)	SAP Number (gray/100M)			
8010080002	8010080010	8010080084	8010080087	8010080017	8010080024	8010080105	8010080108	20	3.2	2.3
8010080003	8010080011	8010080085	8010080088	8010080018	8010080025	8010080106	8010080109	25	3.9	2.8
8010080004	8010080012	8010080086	8010080091	8010080019	8010080026	8010080113	8010080111	32	4.6	3.6
8010080005	8010080013			8010080020	8010080027			40	5.6	4.5
8010080006	8010080014			8010080021	8010080028			50	6.7	5.6
8010080007	8010080015			8010080022	8010080029			63	8.4	7.1
8010080067	8010080069			8010080071	8010080073			75	9.6	8.4
8010080068	8010080070			8010080072	8010080074			90	11.5	10.1
								110	13.7	12.3

S3.2 (PN 2.0) * Suitable for Cold or Hot Water Supply

SAP Number (white/4M)	SAP Number (gray/4M)	SAP Number (white/100M)	SAP Number (gray/100M)	d _n (mm)	e _n (mm)	e _n ' (mm)
8010080048	8010080056	8010080098	8010080102	20	3.7	2.8
8010080049	8010080057	8010080099	8010080103	25	4.6	3.5
8010080050	8010080059	8010080101	8010080104	32	5.5	4.4
8010080051	8010080061			40	6.7	5.5
8010080052	8010080063			50	8.0	6.9
8010080053	8010080065			63	10.0	8.6
8010080079	8010080081			75	11.5	10.3
8010080080	8010080083			90	13.7	12.3
8010080047	8010080054			110	16.6	15.1

S2.5 (PN 2.5) * Suitable for Cold or Hot Water Supply

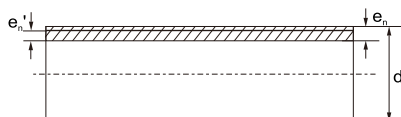
SAP Number (white/4M)	SAP Number (gray/4M)	SAP Number (white/100M)	SAP Number (gray/100M)	d _n (mm)	e _n (mm)	e _n ' (mm)
8010080035	8010080042	8010080092	8010080095	20	4.3	3.4
8010080036	8010080043	8010080093	8010080096	25	5.3	4.2
8010080037	8010080044	8010080094		32	6.4	5.4
8010080038	8010080045			40	7.8	6.7
8010080039	8010080046			50	9.4	8.3
8010080040	8010080204			63	11.8	10.5
8010080075	8010080077			75	13.8	12.5
8010080076	8010080078			90	16.4	15.0
8010080202	8010080041			110	19.8	18.3

S: Pipe Series

PN: Nominal Pressure (unit: MPa)

d_n: Nominal Outside Diameter

e_n: Nominal Wall Thickness

e_n': Minimum Inner Wall Thickness


Bicolor PP-R Water Pipe



■ Product Overview

Bi-color PP-R water pipe is produced based on GB/T18742.1, GB/T18742.2, GB/T18742.3, GB/T17219 and Ministry of Health. And the quality control according to ISO9001.

The inside layer of bi-color PP-R water pipe is opaque, thus it can reduce the breeding of bacteria and cannot effect the water quality. The color of outside layer can be custom-made.

■ Advantages

- ⊗ The color of outside layer can be custom-made.
- ⊗ Corrosion resistance, no-scale, healthy and non-toxic.
The use of bi-color pipe can prevent secondary pollution to water caused by the inner scale and corrosion of galvanized steel pipe. PP-R confirms to the non-toxic regulation of food hygiene, and more suited to convey drinking water.
- ⊗ The inner and outer surface of pipe is smooth, which ensures flow smoothly and reduces flow resistance.
- ⊗ Temperature resistance, low-thermal conductor. Bi-color pipe can bear hot water and high pressure, and its long-term working temperature is 70°C.

■ Applications

- ⊗ Cold and hot water supply, including central-heating system.
- ⊗ Heating systems in buildings, including floor, wall and radiant heating system.
- ⊗ Drinking water supply system.
- ⊗ Central (centralized) air-conditioning systems.
- ⊗ Industrial pipeline system of chemical medium transportation & drainage.

- ⊗ Heat preservation and energy saving. The heat conductivity coefficient of bi-color PP-R pipe is only 0.5% of galvanized steel pipe, and 0.1% of copper pipe. Its energy effect is excellent when used for thermal retardation.
- ⊗ Good corrosion resistance: No-scale, no corrosion.
- ⊗ The pipeline system is safe and reliable. It can work for more than 50 years under proper use.
- ⊗ Easy to install. PP-R pipes and fittings can be jointed by socket fusion and electro fusion.

Physical Properties

Item	Index		Test Methods
	Pipe	Fittings	
Density, g/ cm ³	0.89~0.91		GB/T 1033
Thermal Conductivity, w/ (m•k)(20°C)	0.23~0.24		GB/T 3399
Linear Expansion Coefficient, mm/(m•k)	0.14~0.16		GB/T 1036
Tensile Strength, MPa	≥20		GB/T 1040
Elasticity Modulus, N/mm ² (20°C)	800		GB/T 1040
Longitudinal Reversion,% (135±2°C, 2h)	≤2	—	GB/T 6671
Charpy Impact Test (15J, 0±2°C, 2h)	TIR<10	—	GB/T 18743
Melt Flow Rate, MFR (230°C, 2.16kg), g/10min	Rate of change≤30% of the raw material		GB/T 3682
Hydraulic Pressure Test	20°C, 1h, Hoop Stress is 16MPa	No Failure	GB/T 6111
	95°C, 1000h, Hoop Stress is 3.5MPa	No Failure	
	110°C, 8760h, Hoop Stress is 1.90MPa	No Failure	
Leaktightness Test	20°C, 1h, Test Stress is 2.4 times of normal pressure	TIR<10	—
Sanitary Properties	Comply with GB/T 17219		GB/T 17219

Bi-color PP-R water pipe

Dimension Data Sheet (Unit: mm)

S5 (1.25MPa)			
Nominal Diameter d _n (mm)	SAP Number (4M)	Outer Layer Thickness e1 (mm)	Total Thickness e2 (mm)
20	8010060820	0.7	2.0
25	8010060821	0.7	2.3
32	8010060822	0.9	2.9
40	8010060823	1.0	3.7
50	8010060824	1.2	4.6

S3.2 (2.0MPa)			
Nominal Diameter d _n (mm)	SAP Number (4M)	Outer Layer Thickness e1 (mm)	Total Thickness e2 (mm)
20	8010060830	0.7	2.8
25	8010060831	0.7	3.5
32	8010060832	0.9	4.4
40	8010060833	1.0	5.5
50	8010060834	1.2	6.9

S4 (1.6MPa)			
Nominal Diameter d _n (mm)	SAP Number (4M)	Outer Layer Thickness e1 (mm)	Total Thickness e2 (mm)
20	8010060825	0.7	2.3
25	8010060826	0.7	2.8
32	8010060827	0.9	3.6
40	8010060828	1.0	4.5
50	8010060829	1.2	5.6

S4(1.6MPa)			
Nominal Diameter d _n (mm)	SAP Number (4M)	Outer Layer Thickness e1 (mm)	Total Thickness e2 (mm)
20	8010060835	0.7	3.4
25	8010060836	0.7	4.2
32	8010060837	0.9	5.4
40	8010060838	1.0	6.7
50	8010060839	1.2	8.3

PP-R Water Pipe Fittings PP-R / Aluminum Composite Pipe Fittings



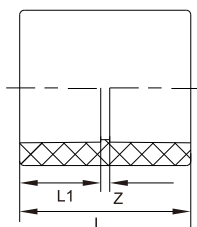
■ Features

- ⊗ **Material:** Random Polypropylene
- ⊗ **Size:** full 16mm through 160mm availability
- ⊗ **Pressure Rating:** 2.5MPa, or other nominal pressures available upon request
- ⊗ **Standard:** ISO 15874-3, EN ISO 15874-3, BS EN ISO 15874-3, BS 6920, DIN 16962, GB/T 18742-3, KTW
- ⊗ **Colors:** light gray, white or other colors available upon request
- ⊗ **Joint:** Joining pipe and socket joint fittings by socket fusion joint

■ Advantages

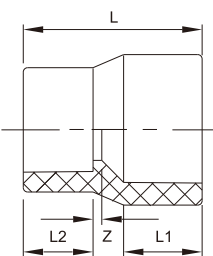
- ⊗ **High Temperature Resistance:** the maximum sustained working temperature is up to 70°C, the maximum transient temperature is up to 95°C
- ⊗ **Heat Preservation:** low thermal conductivity result in preserving heat
- ⊗ **Non-toxic:** no heavy metal additives, would not be covered with dirt or contaminated by bacterium
- ⊗ **Low Installation Costs:** light weight and ease of installation can reduce installation costs
- ⊗ **High Flow Capacity:** smooth interior walls result in low pressure loss and high volume
- ⊗ **Longevity:** more than 50 years under proper use

Coupling (Soc×Soc)



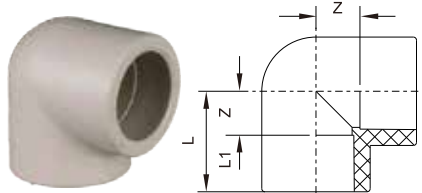
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS/CTN	Carton Size (mm×mm×mm)
8010070860	8010070871	16	1	15	31	1200	410x280x330
8010070862	8010070873	20	1.5	16	33.5	870	410x280x330
8010070863	8010070874	25	1.5	18	37.5	520	410x280x330
8010070864	8010070875	32	2	20	42	300	410x280x330
8010070865	8010070876	40	1.5	22.5	46.5	210	410x280x330
8010070866	8010070877	50	2	25.5	53	260	560x420x330
8010070867	8010070878	63	2	29.5	61	150	560x420x330
8010070868	8010070879	75	2	31.5	65	100	560x420x330
8010070869	8010070880	90	3.5	36.5	76.5	50	560x420x330
8010070859	8010070870	110	5	42	89	36	560x420x330
8010070861	8010070872	160	9	58.5	126	10	560x420x330

Reducer (Soc×Soc)



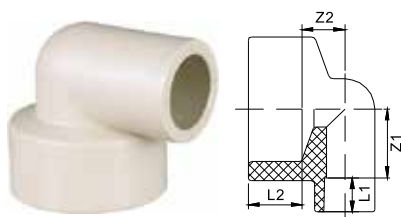
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L2	L	PCS/CTN	Carton Size (mm×mm×mm)
8010070759	8010070789	20×16	2	16	15	34.5	960	410x280x330
8010070760	8010070790	25×16	2	18	15	38.5	600	410x280x330
8010070761	8010070791	25×20	2	18	16	39.5	480	410x280x330
8010070762	8010070792	32×16	2	20	15	44	300	410x280x330
8010070763	8010070793	32×20	2	20	16	42.5	420	410x280x330
8010070764	8010070794	32×25	2	20	18	45	300	410x280x330
8010070765	8010070795	40×20	2.5	22.5	16	46	252	410x280x330
8010070766	8010070796	40×25	2	22.5	18	48.5	252	410x280x330
8010070767	8010070797	40×32	3	22.5	20	50.5	210	410x280x330
8010070768	8010070798	50×20	1.5	25.5	16	51.5	120	410x280x330
8010070769	8010070799	50×25	2	25.5	18	52.5	120	410x280x330
8010070770	8010070800	50×32	2.5	25.5	20	57	120	410x280x330
8010070771	8010070801	50×40	1.6	25.5	22.5	57.5	120	410x280x330
8010070772	8010070802	63×25	3	29.5	18	53	120	410x280x330
8010070773	8010070803	63×32	2	29.5	20	56	100	410x280x330
8010070774	8010070804	63×40	2	29.5	22.5	57.5	100	410x280x330
8010070775	8010070805	63×50	2	29.5	25.5	60	150	560x420x330
8010070776	8010070806	75×32	3	31.5	20	60.5	140	560x420x330
8010070777	8010070807	75×40	3	31.5	22.5	63	140	560x420x330
8010070778	8010070808	75×50	3	31.5	25.5	66	140	560x420x330
8010070779	8010070809	75×63	3	31.5	29.5	68	90	560x420x330
8010070780	8010070810	90×40	3	37.5	22.5	73	80	560x420x330
8010070781	8010070811	90×50	2	37.5	25.5	73	80	560x420x330
8010070782	8010070812	90×63	2.5	37.5	29.5	78	80	560x420x330
8010070783	8010070813	90×75	2.5	37.5	31.5	80.5	50	560x420x330
8010070754	8010070784	110×50	3	42	25.5	82.5	50	560x420x330
8010070755	8010070785	110×63	4	42	29.5	85	45	560x420x330
8010070756	8010070786	110×75	4	42	31.5	88	50	560x420x330
8010070757	8010070787	110×90	5.5	42	37.5	94.5	36	560x420x330
8010070758	8010070788	160×110	3	58.5	42	127	10	560x420x330

90°Elbow (Soc×Soc)



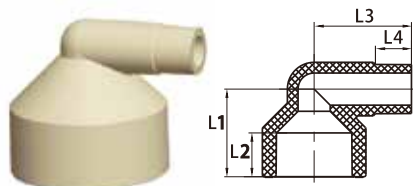
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070035	8010070046	16	8	15	23	1000	410x280x330
8010070037	8010070048	20	11	16	27	480	410x280x330
8010070038	8010070049	25	13.5	18	31.5	360	410x280x330
8010070039	8010070050	32	17.5	20	37.5	192	410x280x330
8010070040	8010070051	40	21	22.5	43.5	96	410x280x330
8010070041	8010070052	50	26.5	25.5	52	120	560x420x330
8010070042	8010070053	63	32.5	29.5	62	70	560x420x330
8010070043	8010070054	75	37.5	31.5	69	40	560x420x330
8010070044	8010070055	90	44.5	37.5	82	25	560x420x330
8010070034	8010070045	110	55	42	97	15	560x420x330
8010070036	8010070047	160	92.5	58.5	151	4	560x420x330

90°Reducing Elbow (Soc×Soc)



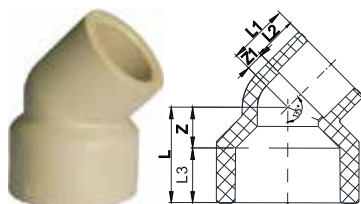
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L2	Z1	Z2	PCS /CTN	Carton Size (mm×mm×mm)
8010070193	8010070203	25×20	16	18	14	14	360	410x280x330
8010070194	8010070204	32×20	16	20	19	15	210	410x280x330
8010070195	8010070205	32×25	18	20	19	17	200	410x280x330
8010070196	8010070206	40×20	16	22.5	24	17.5	175	410x280x330
8010070197	8010070207	40×25	18	22.5	25	19.5	120	410x280x330
8010070198	8010070208	40×32	20	22.5	25	21.5	100	410x280x330
8010070199	8010070209	50×20	16	25	32	20	96	410x280x330
8010070200	8010070210	50×25	18	25.5	32	21.5	96	410x280x330
8010070201	8010070211	50×32	20	25.5	32	26.5	80	410x280x330
8010070202	8010070212	50×40	22.5	25.5	31.5	26.5	120	410x280x330
8010071172	8010071171	63×25	18	29.5	27	35.5	130	410x280x330
8010071723	8010071715	63×32	20	29.5	25	35.5	130	410x280x330
8010071724	8010071716	63×40	22.5	29.5	27.5	35.5	100	410x280x330
8010071254	8010071263	63×50	25.5	29.5	29.5	35.5	80	410x280x330

90°Reducing Elbow (Spig×Soc)



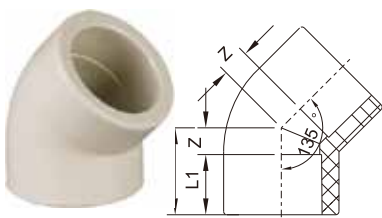
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L2	L3	L4	PCS /CTN	Carton Size (mm×mm×mm)
8010072689	8010072688	32×20	39	22	42	16.5		
8010072691	8010072690	32×25	39	20	44	18.5		
8010071848	8010071847	40×20	45	22.5	45	16.5		
8010071850	8010071849	40×25	45	22.5	50	18.5		
8010071852	8010071851	50×20	55	25.5	50	16.5		
8010072870	8010072869	50×32	57	25.5	58	20.5		
8010072866	8010072865	50×40	57	25.5	60	23		

45°Reducing Elbow (Soc×Soc)



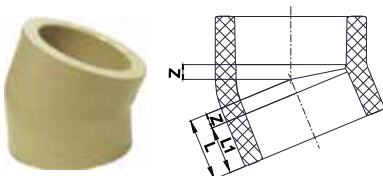
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	Z	Z1	PCS /CTN	Carton Size (mm×mm×mm)
8010071152	8010071151	25×20	28	22	16	18	10	6	400	410x280x330
8010071154	8010071153	32×20	33	22	16	20	13	6	280	410x280x330
8010071156	8010071155	32×25	32	25	18	20	12	7	280	410x280x330
8010071158	8010071157	40×20	40	22	16	22.5	17.5	6	180	410x280x330
8010071160	8010071159	40×25	38	25	18	22.5	15.5	7	168	410x280x330
8010071248	8010071257	40×32	37	28.5	20	22.5	14.5	8.5		
8010071249	8010071258	50×20	48.5	22	16	25.5	23	6		
8010071250	8010071259	50×25	46	25	18	25.5	20.5	7		
8010071162	8010071161	50×32	44.5	28.5	20	25.5	19	8.5	100	410x280x330
8010071164	8010071163	50×40	42.5	33	22.5	25.5	17	10.5	80	410x280x330
8010071251	8010071260	63×25	60	25	18	29.5	30.5	7		
8010071301	8010071294	63×32	55	28.5	20	29.5	25.5	8.5		
8010071252	8010071261	63×40	53	33	22.5	29.5	23.5	10.5		
8010071253	8010071262	63×50	50	38	25.5	29.5	20.5	12.5		

45°Elbow (Soc×Soc)



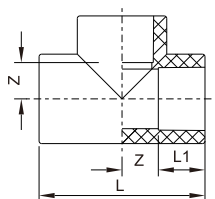
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070002	8010070013	16	4	15	19	1000	410x280x330
8010070004	8010070015	20	6.3	16	22.3	600	410x280x330
8010070005	8010070016	25	7	18	25	360	410x280x330
8010070006	8010070017	32	10	20	30	180	410x280x330
8010070007	8010070018	40	10.5	22.5	33	112	410x280x330
8010070008	8010070019	50	12	25.5	37.5	140	560x420x330
8010070009	8010070020	63	14	29.5	43.5	80	560x420x330
8010070010	8010070021	75	16.5	31.5	48	50	560x420x330
8010070011	8010070022	90	21.5	37.5	59	30	560x420x330
8010070001	8010070012	110	25.5	42	67.5	20	560x420x330
8010070003	8010070014	160	49.5	58.5	108	5	560x420x330

22.5°Elbow (Soc×Soc)



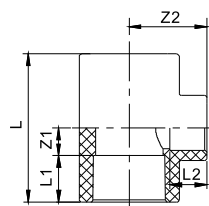
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010071174	8010071173	20	4	16	20		
8010071176	8010071175	25	4	18	22		
8010071178	8010071177	32	5.5	20	25.5		
8010071180	8010071179	40	6	22.5	28.5		
8010071182	8010071181	50	7.5	25.5	33	75	410x280x330
8010071255	8010071264	63	8.5	29.5	38	40	410x280x330
8010071302	8010071295	75	9.5	31.5	41	25	410x280x330
8010071303	8010071296	90	11.5	37.5	49		
8010071256	8010071265	110	14.5	42	56.5		
8010072548	8010072547	160	19.5	58.5	78		

Tee (Soc×Soc×Soc)



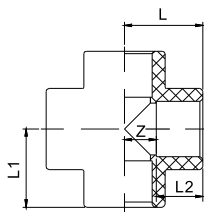
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070068	8010070079	16	8	15	46	640	410x280x330
8010070070	8010070081	20	10	16	54	360	410x280x330
8010070071	8010070082	25	14	18	64	240	410x280x330
8010070072	8010070083	32	17.8	20	75.5	140	410x280x330
8010070073	8010070084	40	21.5	22.5	88	90	410x280x330
8010070074	8010070085	50	26.5	25.5	104	100	560x420x330
8010070075	8010070086	63	32.5	29.5	124	60	560x420x330
8010070076	8010070087	75	37.8	31.5	138.5	30	560x420x330
8010070077	8010070088	90	45.5	37.5	166	20	560x420x330
8010070067	8010070078	110	55.5	42	195	12	560x420x330
8010070069	8010070080	160	91.5	58.5	300	4	560x420x330

Reducing Tee (Soc×Soc×Soc)



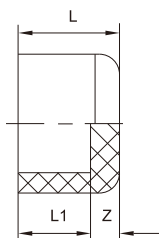
SAP Number (white)	SAP Number (gray)	Size (mm)	Z1	Z2	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070104	8010070135	20×16	8.8	25.5	16	15	49.5	360	410x280x330
8010070105	8010070136	20×25×20	13.5	29.5	16	18	59	250	410x280x330
8010070106	8010070137	25×16	8.5	27.5	18	15	53		
8010070107	8010070138	25×20	11.5	29.5	18	16	59	280	410x280x330
8010070108	8010070139	25×20×20	13	28.5	18	16	59	250	410x280x330
8010070109	8010070140	32×16	9	30.7	20	15	58	180	410x280x330
8010070110	8010070141	32×20	12	33.5	20	16	64	160	410x280x330
8010070111	8010070142	32×25	14	35	20	18	68	150	410x280x330
8010070112	8010070143	40×20	12	37.5	22.5	16	69	112	410x280x330
8010070113	8010070144	40×25	14.5	40.5	22.5	18	74	112	410x280x330
8010070114	8010070145	40×32	17.5	42	22.5	20	80	88	410x280x330
8010070115	8010070146	50×20	11.3	42.2	25.5	16	73.5	180	560x420x330
8010070116	8010070147	50×25	13.5	44	25.5	18	78	168	560x420x330
8010070117	8010070148	50×32	17.5	47.3	25.5	20	86	120	560x420x330
8010070118	8010070149	50×40	21.5	49.3	25.5	22.5	94	120	560x420x330
8010070119	8010070150	63×25	13.2	42.5	29.5	18	85.4	96	560x420x330
8010070120	8010070151	63×32	16.5	55.5	29.5	20	92	96	560x420x330
8010070121	8010070152	63×40	20.5	54	29.5	22.5	100	80	560x420x330
8010070122	8010070153	63×50	25.8	56.8	29.5	25.5	110.5	60	560x420x330
8010070123	8010070154	75×32	17	62	31.5	20	97	60	560x420x330
8010070124	8010070155	75×40	21	59.5	31.5	22.5	105	50	560x420x330
8010070125	8010070156	75×50	25.5	62.5	31.5	25.5	114	50	560x420x330
8010070126	8010070157	75×63	32	67.2	31.5	29.5	127	36	560x420x330
8010070127	8010070158	90×40	21.3	74	37.5	22.5	117.5	30	560x420x330
8010070128	8010070159	90×50	26	71.5	37.5	25.5	127	28	560x420x330
8010070129	8010070160	90×63	32.3	75	37.5	29.5	139.5	28	560x420x330
8010070130	8010070161	90×75	37.5	77.5	37.5	31.5	150	25	560x420x330
8010070100	8010070131	110×50	27.8	79.5	42	25.5	139.5	18	560x420x330
8010070101	8010070132	110×63	33.8	84	42	29.5	151.5	15	560x420x330
8010070102	8010070133	110×75	39	87.5	42	31.5	162	15	560x420x330
8010070103	8010070134	110×90	46	91.5	42	37.5	176	14	560x420x330
8010072264	8010072579	160×110	59	125	58.5	42	235		

Cross (Soc×Soc×Soc×Soc)



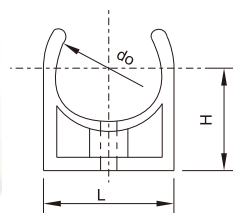
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	L2	PCS /CTN	Carton Size (mm×mm×mm)
8010070844	8010070849	20	11	27	27	16	300	410x280x330
8010070845	8010070850	25	14.8	32.8	32.8	18	192	410x280x330
8010070846	8010070851	32	17.8	37.8	37.8	20	105	410x280x330
8010070847	8010070852	40	22.3	44.8	44.8	22.5	63	410x280x330
8010070848	8010070853	50	27.5	53	53	25.5	60	560x420x330

Cap (Soc)



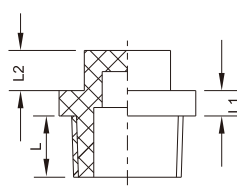
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070296	8010070307	16	3	15	18	1800	410x280x330
8010070298	8010070309	20	4.5	16	20.5	1290	410x280x330
8010070299	8010070310	25	4.5	18	22.5	900	410x280x330
8010070300	8010070311	32	6.5	20	26.5	420	410x280x330
8010070301	8010070312	40	8	22.5	30.5	306	410x280x330
8010070302	8010070313	50	9.5	25.5	35	180	410x280x330
8010070303	8010070314	63	12	29.5	41.5	180	560x420x330
8010070304	8010070315	75	13	31	44	140	560x420x330
8010070305	8010070316	90	15.5	35.5	51	80	560x420x330
8010070295	8010070306	110	18	42	60	40	560x420x330
8010070297	8010070308	160	48.5	58.5	107	14	560x420x330

Pipe Clamp



SAP Number (white)	SAP Number (gray)	Size (mm)	L	do	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070282	8010070285	20	27.5	19	22	1080	410x280x330
8010070283	8010070286	25	32	24.6	24.5	1050	410x280x330
8010070284	8010070287	32	39	31.5	28.5	840	410x280x330
8010070902	8010070288	40	47.5	38.5	32	480	410x280x330
8010071000	8010070289	50	57.5	48.5	37	360	410x280x330

Male Thread Plug (Mipt)



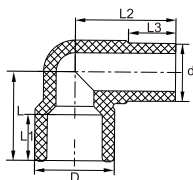
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	PCS /CTN	Carton Size (mm×mm×mm)
8010070477	8010070480	1/2"	12	5	9	1200	410x280x330
8010070478	8010070481	3/4"	14	6	9	900	410x280x330
8010070476	8010070479	1"	16.5	7	11	420	410x280x330

Rubber Gasket



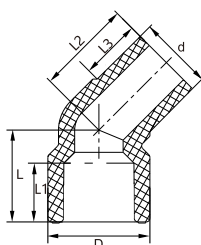
SAP Number	Size (mm)	PCS /CTN	Carton Size (mm×mm×mm)
8010070749	40		
8010070750	50		
8010070751	63		
8010070752	75		
8010070753	90		
8010070747	110		
8010070748	160		

90° Elbow (Soc × Spig)



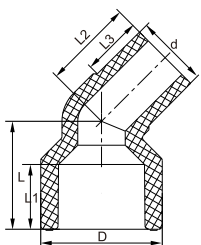
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
8010072697	8010072696	32	40	20	47	20.5	42.7	32.1		
8010072868	8010072867	50	55	25.5	65	26	66.6	50.1		

45° Elbow (Soc × Spig)



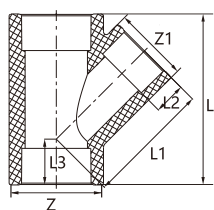
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
8010072693	8010072692	20	25	16	26	16.5	27.8	20.1		
8010072890	8010072889	25	30	18	28	18.5	33.8	25.1		
8010072695	8010072694	32	35	20	33	20.5	42.7	32.1		

45° Reducing Elbow (Soc × Spig)



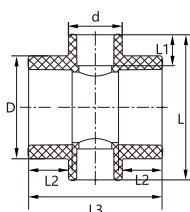
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
8010072576	8010072575	25×20	30	18	25	16.5	33.8	20.1		
8010072578	8010072577	32×20	35	20	27	16.5	42.7	20.1		
8010072585	8010072584	32×25	35	20	29	18.5	42.7	25.1		
8010072862	8010072861	40×20	45	22.5	26	16.5	53.2	20.1		
8010072864	8010072863	40×25	42	22.5	30	18.5	53.2	25.1		
8010072583	8010072582	50×20	55	25.5	27	16.5	66.6	20.1		
8010072581	8010072580	50×32	50	25.5	35	20.5	66.6	32.1		
8010072872	8010072871	75×63	67	31.5	50	30	98	63.1		

45° Reducing Wye (Soc×Soc×Soc)



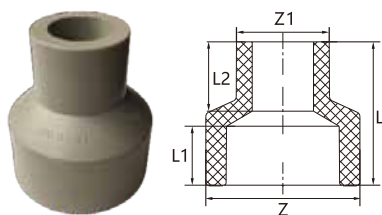
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	Z	Z1	PCS /CTN	Carton Size (mm×mm×mm)
8010072303	8010072302	50×40	120	88	22.5	32	66.6	53.2		

Reducing Cross (Soc×Soc×Soc×Soc)



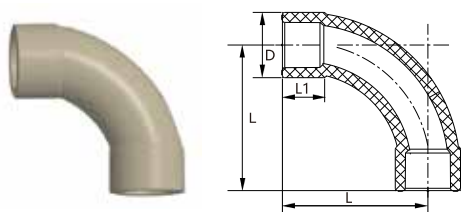
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
8010072874	8010072873	40×25	81	18	22.5	74	53.2	33.8		

Reducer (Soc×Spig)



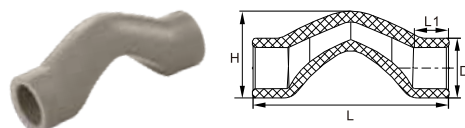
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	Z	Z1	PCS /CTN	Carton Size (mm×mm×mm)
8010072561	8010072560	25×20	42	18	22	33.8	20.1		
8010072544	8010072543	32×20	46	20	23.5	42.7	20.1		
8010072938	8010072937	40×20	50	22.5	25	53.2	20.1		
8010072940	8010072939	40×25	52	22.5	27	53.2	25.1		
8010072563	8010072562	40×32	58	22.5	26	53.2	32.1		
8010072546	8010072545	50×32	60	25.5	29	66.6	32.1		
8010072565	8010072564	50×40	62	25.5	30	66.6	40.1		

90°Long Sweep bend (Soc ×Soc)



SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	D	PCS /CTN	Carton Size (mm×mm×mm)
8010072948	8010072947	32	75	24.5	42.7		

Bending pipe II (Soc × Soc)



SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	D	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072907	8010072906	20	91	15.9	27.8	40.4	250	410x280x330
8010072909	8010072908	25	115	17.5	33.8	49.9	120	410x280x330
8010072911	8010072910	32	135	20.5	42.7	63.3	80	410x280x330

Bending Pipe (for Cold Water) (Spig×Spig)



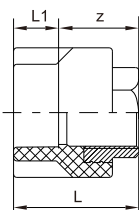
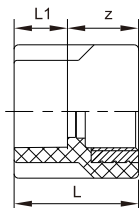
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070460	8010070463	20	300	47	320	560x420x330
8010070461	8010070464	25	300	51	250	560x420x330
8010070462	8010070465	32	300	67	150	560x420x330

Bending Pipe (for Hot Water) (Spig×Spig)



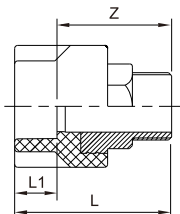
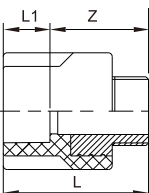
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070467	8010070470	20	300	47	320	560x420x330
8010070468	8010070471	25	300	51	250	560x420x330
8010070469	8010070472	32	300	67	150	560x420x330

**Female Thread Adapter
(Soc×Fipt with Metal Insert)**



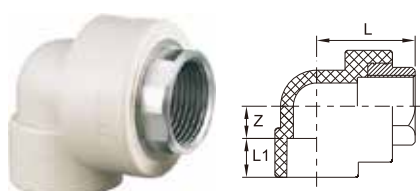
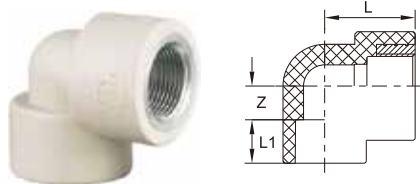
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070566	8010070573	16×1/2"	24	15	39	360	410x280x330
8010070567	8010070574	20×1/2"	26.5	16	42.5	288	410x280x330
8010070568	8010070575	20×3/4"	26	16	42	240	410x280x330
8010070569	8010070576	25×1/2"	26.5	18	44.5	300	410x280x330
8010070570	8010070577	25×3/4"	27	18	45	180	410x280x330
8010070571	8010070578	32×1/2"	31	20	51	180	410x280x330
8010070572	8010070579	32×3/4"	27.5	20	47.5	210	410x280x330
8010070587	8010070597	20×1/2"	34	16	50	300	410x280x330
8010070588	8010070598	20×3/4"	38.5	16	54.5	192	410x280x330
8010070589	8010070599	25×3/4"	39.5	18	57.5	180	410x280x330
8010070590	8010070600	32×1"	38	20	58	96	410x280x330
8010070591	8010070601	40×1"	37	22	59	84	410x280x330
8010070592	8010070602	40×1 1/4"	43	22.5	65.5	48	410x280x330
8010070594	8010070604	50×1 1/4"	41.5	25.5	67	48	410x280x330
8010070593	8010070603	50×1 1/2"	42.5	25.5	68	36	410x280x330
8010070595	8010070605	63×2"	46.5	29.5	76	36	410x280x330
8010070596	8010070606	75×2"	47	31.5	78.5	36	410x280x330

**Male Thread Adapter
(Soc×Mipt with Metal Insert)**



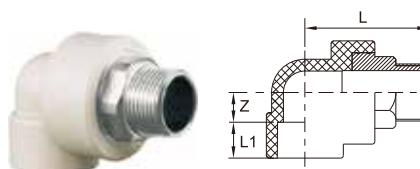
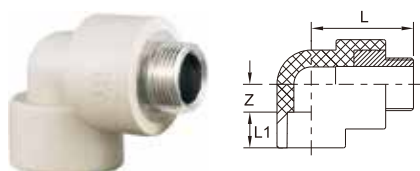
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070706	8010070713	16×1/2"	38	15	53	240	410x280x330
8010070707	8010070714	20×1/2"	38	16	54	240	410x280x330
8010070708	8010070715	20×3/4"	38	16	54	180	410x280x330
8010070709	8010070716	25×1/2"	38	18	56	210	410x280x330
8010070710	8010070717	25×3/4"	38.5	18	56.5	180	410x280x330
8010070711	8010070718	32×1/2"	45	20	65	180	410x280x330
8010070712	8010070719	32×3/4"	51.5	20	71.5	180	410x280x330
8010070727	8010070734	32×1"	57	20	77	72	410x280x330
8010070728	8010070735	40×1"	56	22	78	72	410x280x330
8010070729	8010070736	40×1 1/4"	64	22.5	86.5	48	410x280x330
8010070731	8010070738	50×1 1/4"	62.5	25.5	88	48	410x280x330
8010070730	8010070737	50×1 1/2"	63.5	25.5	89	36	410x280x330
8010070732	8010070739	63×2"	71.5	29.5	101	36	410x280x330
8010070733	8010070740	75×2"	75.5	31.5	107	24	410x280x330

**Female Thread Elbow
 (Soc×Fipt with Metal Insert)**



SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070527	8010070534	16×1/2"	11	35.5	15		
8010070528	8010070535	20×1/2"	11.5	37.5	16	240	410x280x330
8010070529	8010070536	20×3/4"	13.1	38.5	16	210	410x280x330
8010070530	8010070537	25×1/2"	12	40.5	18	210	410x280x330
8010070531	8010070538	25×3/4"	13	41	18	180	410x280x330
8010070532	8010070539	32×1/2"	15	42	20	180	410x280x330
8010070533	8010070540	32×3/4"	18	42	20	150	410x280x330
8010070548	8010070550	20×1/2"	13	44	16	240	410x280x330
8010070549	8010070551	32×1"	16.5	54.5	20	72	410x280x330
8010071116	8010070969	40×1 1/4"	28.5	65	22.5	36	410x280x330
8010070970	8010070971	50×1 1/2"	32	70	25.5	36	410x280x330
8010071117	8010071118	63×2"	38	82	29.5	18	410x280x330
8010072959	8010072958	75×2-1/2"	41	77.5	33.5		

**Male Thread Elbow
 (Soc×Mipt with Metal Insert)**



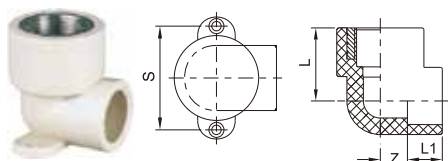
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070669	8010070676	16×1/2"	11	49.5	15	240	410x280x330
8010070670	8010070677	20×1/2"	11.5	49	16	240	410x280x330
8010070671	8010070678	20×3/4"	13.1	50	16	150	410x280x330
8010070672	8010070679	25×1/2"	12	52	18	210	410x280x330
8010070673	8010070680	25×3/4"	17	52.5	18	150	410x280x330
8010070674	8010070681	32×1/2"	15	56	20	150	410x280x330
8010070675	8010070682	32×3/4"	18	56	20	120	410x280x330
8010070690	8010070691	32×1"	21	73.5	20	72	410x280x330
8010070975	8010070972	40×1 1/4"	28.5	86	22.5	36	410x280x330
8010071129	8010071130	50×1 1/2"	32	91	25.5	24	410x280x330
8010070999	8010070977	63×2"	33.5	107	29.5	18	410x280x330
8010071004	8010071005	75×2 1/2"	41	124.5	31.5	6	410x280x330

Pipe Cover



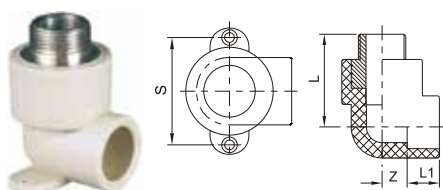
SAP Number (white)	SAP Number (gray)	Size (mm)	PCS /CTN	Carton Size (mm×mm×mm)
8010070261	8010070272	16		
8010070263	8010070274	20		
8010070264	8010070275	25		
8010070265	8010070276	32		
8010070266	8010070277	40		
8010070267	8010070278	50		
8010070268	8010070279	63		
8010070269	8010070280	75		
8010070270	8010070281	90		
8010070260	8010070271	110		
8010070262	8010070273	160		

**Female Thread Elbow with Seat
(Soc×Fipt with Metal Insert)**



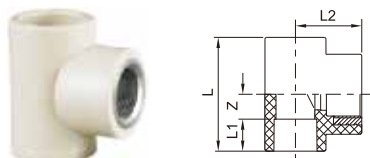
SAP Number (white)	SAP Number (gray)	Size (mm)	L	S	L1	Z	PCS /CTN	Carton Size (mm×mm×mm)
8010070554	8010070558	20×1/2"	38	49.5	16	11.5	168	410x280x330
8010070555	8010070559	20×3/4"	38.5	53.5	16	13.5	180	410x280x330
8010070556	8010070560	25×1/2"	39.5	49.5	18	12	180	410x280x330
8010070557	8010070561	25×3/4"	37.5	53.5	18	13	120	410x280x330

**Male Thread Elbow with Seat
(Soc×Mipt with Metal Insert)**

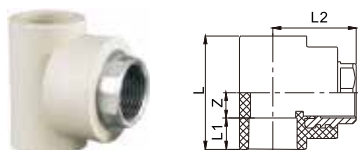


SAP Number (white)	SAP Number (gray)	Size (mm)	L	S	L1	Z	PCS /CTN	Carton Size (mm×mm×mm)
8010070694	8010070697	20×1/2"	47.5	49.5	16	11.5	180	410x280x330
8010070693	8010070698	20×3/4"	48	49.5	16	13.1	150	410x280x330
8010070695	8010070699	25×1/2"	50	49.5	18	12	180	410x280x330
8010070696	8010070700	25×3/4"	50.5	53.5	18	13	120	410x280x330

**Female Thread Tee
(Soc×Soc×Fipt with Metal Insert)**

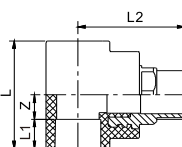
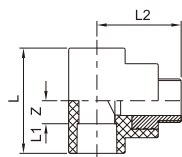


SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L2	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070503	8010070509	20×1/2"	11.5	38	16	55	192	410x280x330
8010070504	8010070510	20×3/4"	13.5	38.5	16	59	168	410x280x330
8010070505	8010070511	25×1/2"	12	41	18	60	150	410x280x330
8010070506	8010070512	25×3/4"	13.5	40.5	18	63	120	410x280x330
8010070507	8010070513	32×1/2"	11.8	41.5	20	63.5	120	410x280x330
8010070508	8010070514	32×3/4"	14.5	42	20	69	108	410x280x330



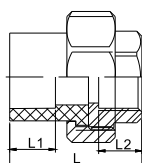
8010070521	8010070523	20×1/2"	13	44	16	58		
8010070522	8010070524	32×1"	16.5	53.5	20	73	60	410x280x330
8010071111	8010070968	40×1 1/4"	28.5	65	22.5	102	24	410x280x330
8010071112	8010071113	50×1 1/2"	32	70	25.5	115	18	410x280x330
8010073622	8010073621	63×2"	38	82	29.5	135	12	410x280x330
8010072956	8010072955	75×2 1/2"	46	96	31.5	155		

Male Thread Tee
(Soc×Soc×Mipt with Metal Insert)



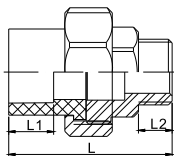
SAP Number (white)	SAP Number (gray)	Size (mm)	Z	L2	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070648	8010070654	20×½"	11.5	49.5	16	55	180	410x280x330
8010070649	8010070655	20×¾"	13.5	50	16	59	150	410x280x330
8010070650	8010070656	25×½"	12	52.5	18	60	150	410x280x330
8010070651	8010070657	25×¾"	13.5	52.5	18	63	120	410x280x330
8010070652	8010070658	32×½"	11.8	56	20	63.5	120	410x280x330
8010070653	8010070659	32×¾"	14.5	56	20	69	90	410x280x330
8010072878	8010072877	40×¾"	15	60	22.5	75		
8010071750	8010071743	25×1"	22	71.5	18	80		
8010070666	8010070667	32×1"	16.5	72.5	20	73	60	410x280x330
8010071809	8010071814	40×1"	21.5	79	22.5	88		
8010071121	8010071125	40×1 ¼"	28.5	86	22.5	102	24	410x280x330
8010071810	8010071815	50×1"	19.5	86	25.5	90	24	410x280x330
8010072896	8010072895	50×1 ¼"	27	90	25.5	105		
8010071122	8010071126	50×1 ½"	32	91	25.5	115	18	410x280x330
8010071123	8010071127	63×2"	33.5	107	29.5	126	12	410x280x330
8010071124	8010071128	75×2 ½"	41	124.5	31.5	145		

Female Thread Union
(Soc×Fipt with Metal)



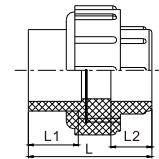
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070488	8010070493	20×½"	16	16	42	300	410x280x330
8010070490	8010070495	25×¾"	18	17	47	180	410x280x330
8010070489	8010070494	25×1"	18	18	56.5	180	410x280x330
8010070492	8010070497	32×¾"	20.5	15	56	120	410x280x330
8010070491	8010070496	32×1"	20.5	18	52	120	410x280x330
8010071930	8010071929	40×1 ¼"	22.5	25	51.5	36	410x280x330
8010071941	8010071939	50×1 ½"	25.5	23	52.5	48	410x280x330
8010071936	8010071934	63×2"	29.5	25	66.5	24	410x280x330

Male Thread Union
(Soc×Mipt with Metal)



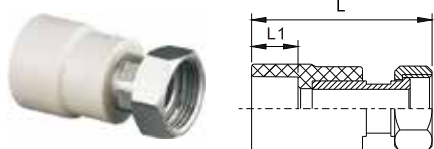
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070629	8010070634	20×½"	16	14	55	300	410x280x330
8010070631	8010070636	25×¾"	18	13.5	60	180	410x280x330
8010070630	8010070635	25×1"	18	19	45.5	180	410x280x330
8010070633	8010070638	32×¾"	20.5	15	42	120	410x280x330
8010070632	8010070637	32×1"	20.5	19	71	108	410x280x330
8010071928	8010071927	40×1 ¼"	22.5	19.5	66.5	36	410x280x330
8010071942	8010071940	50×1 ½"	25.5	21	72.5	36	410x280x330
8010071937	8010071935	63×2"	29.5	24	90.5	24	410x280x330

Union II (Soc×Soc)



SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070430	8010070433	20	16	16	45	240	410x280x330
8010070431	8010070434	25	18	17	48	200	410x280x330
8010070432	8010070435	32	20.5	18	58	108	410x280x330
8010072894	8010071284	40	19.3	22.5	70.8	60	410x280x330

Flexible Joint I
 (Soc×Fipt with Metal)



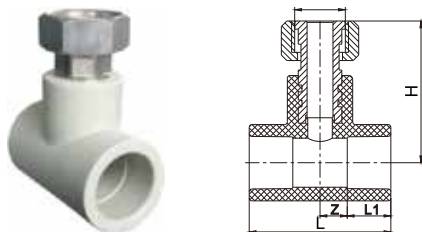
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070415	8010070420	20×½"	59	16	300	410x280x330
8010070416	8010070421	20×¾"	59.5	16	240	410x280x330
8010070417	8010070422	25×½"	61	18	240	410x280x330
8010070418	8010070423	25×¾"	62	18	240	410x280x330
8010071309	8010071304	32×½"	63	20		
8010071310	8010071305	32×¾"	64	20		
8010070419	8010070424	32×1"	68.5	20	150	410x280x330
8010071311	8010071306	40×¾"	66.5	22.5		
8010071744	8010071737	40×1"	71	22.5		
8010071745	8010071738	40×1 ¼"	76	22.5	72	410x280x330
8010071312	8010071307	50×1"	76.5	25.5		
8010071313	8010071308	50×1 ¼"	81.5	25.5	60	410x280x330
8010071799	8010071794	50×1 ½"	89.5	22.5		

Flexible Joint Elbow
 (Soc×Fipt with Metal)



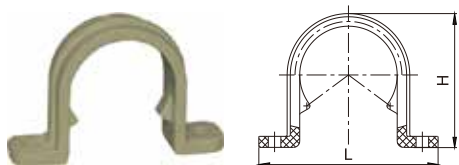
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070439	8010070440	20×½"	50	16	300	410x280x330
8010071189	8010071184	20×¾"	58.5	16	240	410x280x330
8010071188	8010071183	25×½"	50.5	18	240	410x280x330
8010071190	8010071185	25×¾"	54.5	18	210	410x280x330
8010071191	8010071186	32×½"	50.5	18	180	410x280x330
8010071192	8010071187	32×¾"	54	20	150	410x280x330
8010072860	8010072859	32×1"	61.5	20	90	410x280x330
8010071746	8010071739	40×¾"	53.5	22.5		
8010071807	8010071812	40×1"	61.5	22.5		
8010071808	8010071813	40×1 ¼"	71.5	22.5	60	410x280x330
8010071747	8010071740	50×1"	60.5	25.5		
8010071748	8010071741	50×1 ¼"	71.5	25.5		
8010071862	8010071861	50×1 ½"	86.5	25.5	36	410x280x330

Flexible Tee (Soc×Soc)



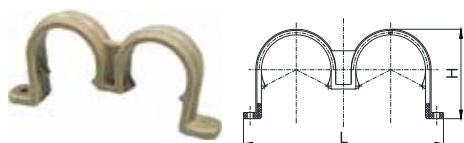
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L	Z	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070935	8010070936	20×½"	16	52	10	52	180	410x280x330
8010071103	8010071105	20×¾"	16	57	12.5	52.5		
8010070937	8010071106	25×½"	18	56	10	54	150	410x280x330
8010070938	8010070939	25×¾"	18	61	12.5	54.5	120	410x280x330
8010071854	8010071853	32×½"	20	60	10	57.1	120	410x280x330
8010071856	8010071855	32×¾"	20	66	13	58.6	96	410x280x330
8010071104	8010071002	32×1"	20.5	72	15.5	63	90	410x280x330
8010072942	8010072941	40×¾"	22.5	72	13.5	63		
8010071858	8010071857	40×1"	22.5	77	16	67.5	60	410x280x330
8010071860	8010071859	40×1 ¼"	22.5	83	22.5	74.5	48	410x280x330
8010072876	8010072875	50×1"	25.5	84	16.5	73		

U Clamp



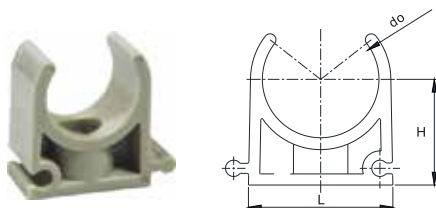
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072892	8010072891	20	44	28.5	2400	410x280x330
8010071720	8010071712	25	50.5	34.8		
8010071721	8010071713	32	57	42.5	1350	410x280x330
8010071722	8010071714	40	68	52.5		
8010071797	8010071792	50	78	64	720	410x280x330

Double U Clamp



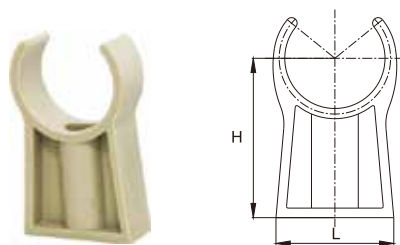
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071717	8010071709	20	72.5	28.5		
8010071718	8010071710	25	85	34.8		
8010071719	8010071711	32	100.5	42.5		
8010071166	8010071165	40	122	52.5		
8010071168	8010071167	50	147.5	64		
8010071170	8010071169	63	178	79.5		

Assembling Clamp



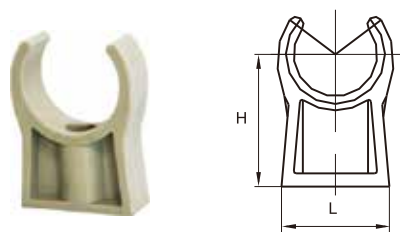
SAP Number (white)	SAP Number (gray)	Size (mm)	do	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071297	8010071290	16	15	21.5	15		
8010071298	8010071291	20	19	27.4	22	1200	410x280x330
8010071299	8010071292	25	24.6	32	24.5	960	410x280x330
8010071300	8010071293	32	31.5	39	28.5	750	410x280x330

Clamp (Tall-style)



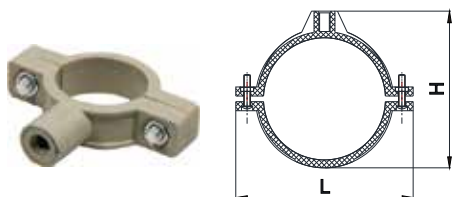
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071917	8010071911	20	24.5	40		
8010072085	8010072078	25	30.5	45	540	410x280x330
8010072086	8010072079	32	37	50		
8010071795	8010071790	40	46	60		
8010071796	8010071791	50	60	70		

Clamp (Moderate-style)



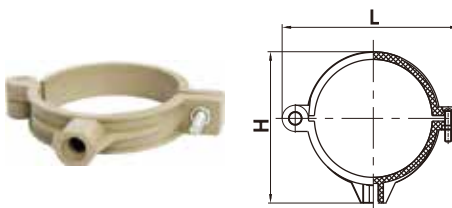
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071912	8010071906	20	24.5	30	1080	410x280x330
8010071913	8010071907	25	30.5	35	840	410x280x330
8010071914	8010071908	32	37	40		
8010071915	8010071909	40	46	45		
8010071916	8010071910	50	60	55		

Pipe Clamp I (without Screw)



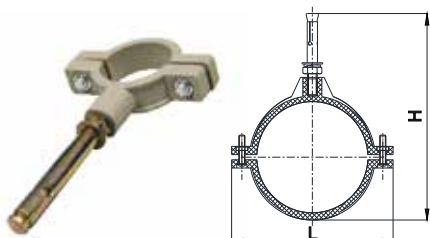
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071266	8010071275	20	49	42	720	410x280x330
8010071269	8010071278	25	54	47	720	410x280x330
8010071211	8010071193	32	64	54	480	410x280x330
8010071214	8010071194	40	72	62.5	360	410x280x330
8010071217	8010071195	50	87	73	240	410x280x330
8010071220	8010071196	63	106	87.5	144	410x280x330
8010071223	8010071197	75	118.5	101	120	410x280x330
8010071281	8010071198	90	132	115	120	410x280x330
8010071272	8010071281	110	157	138.5	70	410x280x330

Pipe Clamp IV (Without Screw)



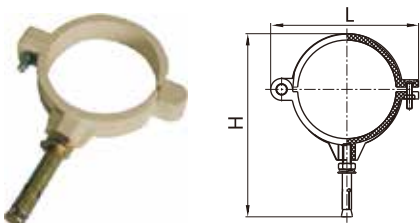
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071892	8010071877	40	72.5	62.5	300	410x280x330
8010071895	8010071880	50	88.5	73	216	410x280x330
8010071898	8010071883	63	105	87.5	120	410x280x330
8010071901	8010071886	75	117.5	101.5	96	410x280x330
8010071904	8010071889	110	162	138.5	60	410x280x330

Pipe Clamp I (Screw)



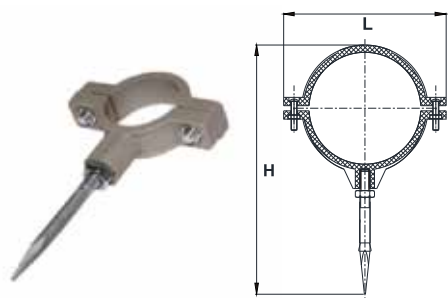
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071267	8010071276	20	49	96	480	410x280x330
8010071270	8010071279	25	54	101	450	410x280x330
8010071212	8010071199	32	64	108	360	410x280x330
8010071215	8010071200	40	72	116.5	300	410x280x330
8010071218	8010071201	50	87	127	144	410x280x330
8010071221	8010071202	63	106	140.5	90	410x280x330
8010071224	8010071203	75	118.5	154	60	410x280x330
8010071227	8010071204	90	132	178	90	410x280x330
8010071273	8010071282	110	157	200.5	60	410x280x330

Pipe Clamp IV (Screw)



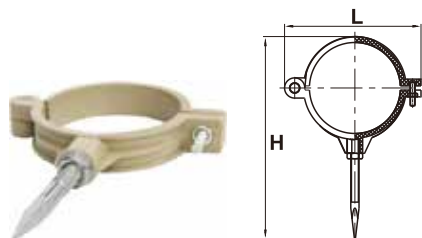
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071893	8010071878	40	72.5	116.5	240	410x280x330
8010071896	8010071881	50	88.5	127	126	410x280x330
8010071899	8010071884	63	105	140.5	84	410x280x330
8010071902	8010071887	75	117.5	154	72	410x280x330
8010071905	8010071890	110	162	200.5		

Pipe Clamp I (Tusk Screw)



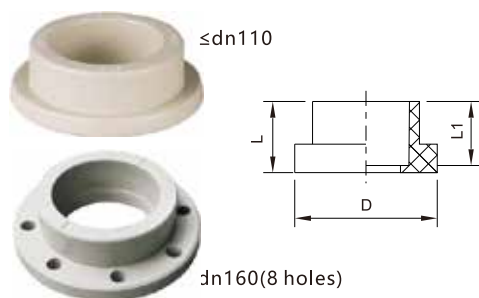
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071268	8010071277	20	49	96	480	410x280x330
8010071271	8010071280	25	54	101	450	410x280x330
8010071213	8010071205	32	64	108	360	410x280x330
8010071216	8010071206	40	72	116.5	300	410x280x330
8010071219	8010071207	50	87	137	144	410x280x330
8010071222	8010071208	63	106	150.5	90	410x280x330
8010071225	8010071209	75	118.5	164	60	410x280x330
8010071228	8010071210	90	132	218	85	410x280x330
8010071274	8010071283	110	157	240.5	50	410x280x330

Pipe Clamp IV (Tusk Screw)



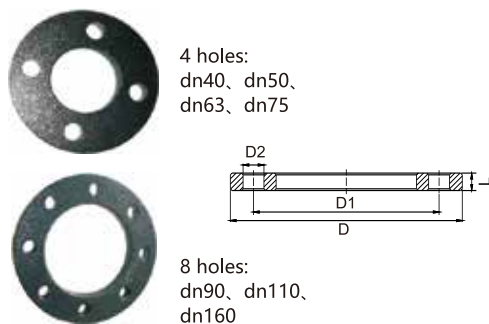
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071891	8010071876	40	72.5	116.5		
8010071894	8010071879	50	88.5	137		
8010071897	8010071882	63	105	150.5		
8010071900	8010071885	75	117.5	164		
8010071903	8010071888	110	162	240.5		

Stub Flange (Soc×Flange)



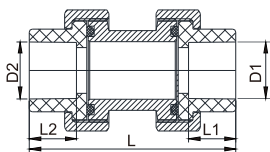
SAP Number (white)	SAP Number (gray)	Size (mm)	D	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070241	8010070248	40	72	26	22.5	160	410x280x330
8010070242	8010070249	50	85	29	25.5	90	410x280x330
8010070243	8010070250	63	106	34.5	29.5	60	410x280x330
8010070244	8010070251	75	129	37	31.5	50	410x280x330
8010070245	8010070252	90	144	40	34.5	30	410x280x330
8010070239	8010070246	110	164	50	42	20	410x280x330
8010070240	8010070247	160	285	85	57.5	10	560x420x330

Flange (Steel Tray)



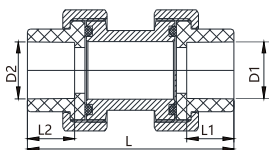
SAP Number	Size (mm)	D	D1	D2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070234	40	140	100	18	10		
8010070235	50	150	110	18	10		
8010070236	63	160	125	18	12		
8010070237	75	185	145	18	15		
8010070238	90	200	160	18	15		
8010070232	110	220	180	18	15		
8010070233	160	285	240	22	18		

PP-R/PE-RT Change Union (Soc×Soc)



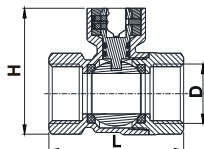
SAP Number	Size (mm)	L	L1	L2	D1	D2	PCS /CTN	Carton Size (mm×mm×mm)
8050040540	20	68.2	16	16	20	20		
8050040542	25	74	18	18	25	25		
8050040544	32	82	20	20	32	32		
8010071633	20	68.2	16	16	20	20		
8010071634	25	74	18	18	25	25		
8010071635	32	82	20	20	32	32		

PP-R/PE Change Union (Soc×Soc)



SAP Number	Size (mm)	L	L1	L2	D1	D2	PCS /CTN	Carton Size (mm×mm×mm)
8010041987	20	68.2	16	16	20	20		
8010041988	25	74	18	18	25	25		
8010041989	32	82	20	20	32	32		
8010071630	20	68.2	16	16	20	20		
8010071631	25	74	18	18	25	25		
8010071632	32	82	20	20	32	32		
8010071730	20	68.2	16	16	20	20		
8010071729	25	74	18	18	25	25		
8010071728	32	82	20	20	32	32		
8050040545	20	68.2	16	16	20	20		
8050040546	25	74	18	18	25	25		
8050040547	32	82	20	20	32	32		

Lock Ball Valve (Fipt with Metal×Fipt with Metal)



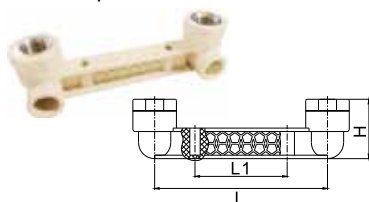
SAP Number	Size (mm)	D	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071141	20	3/4"	60	67.3		
8010071142	25	1"	60	67.3		

Lock Ball Valve Key



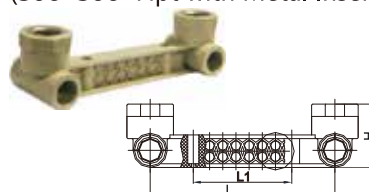
SAP Number	Model	PCS /CTN	Carton Size (mm×mm×mm)
8010071140	F		

Double Female Thread Elbow with Seat
(Soc×Fipt with Metal Insert)



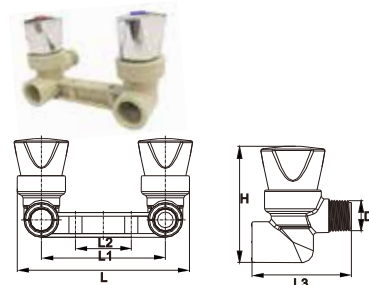
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070624	8010070626	20×1/2"	80	150	51.5	48	410x280x330
8010070625	8010070627	25×1/2"	80	150	56.9	48	410x280x330
8010071798	8010071793	25×3/4"	80	150	57.9	36	410x280x330
8010071864	8010071863	32×1/2"	80	150	63.4	36	410x280x330
8010071811	8010071816	32×3/4"	75	150	63.4	24	410x280x330

Double Female Tee With Seat
(Soc×Soc×Fipt with Metal Insert)



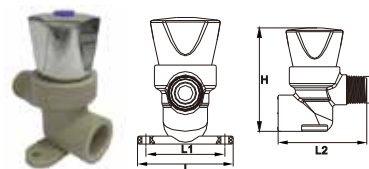
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070951	8010070623	20×1/2"	80	150	51.4	48	410x280x330
8010070952	8010070622	25×1/2"	80	150	56.9	36	410x280x330
8010071866	8010071865	32×1/2"	80	150	62.7	24	410x280x330
8010071749	8010071742	32×3/4"	75	150	63.4	24	410x280x330

Double Angle valve with Seat



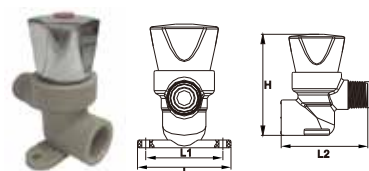
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	L3	H	D	PCS /CTN	Carton Size (mm×mm×mm)
8010072683	8010072682	20×1/2"	138.8	100	45	68	81.5	R1/2"		

Angle valve with seat
(Single Cooling)



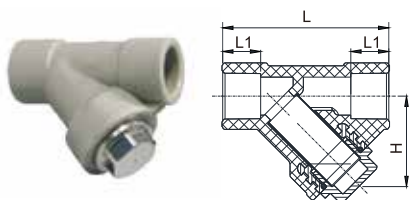
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	H	D	PCS /CTN	Carton Size (mm×mm×mm)
8010072935	8010072934	20×1/2"	60	49.5	68	81.5	R1/2"		

Angle valve with seat
(Single Heat)



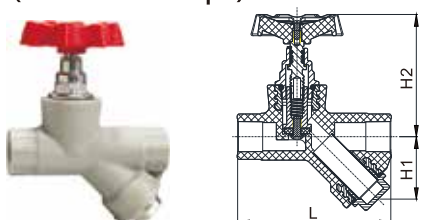
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	L2	H	D	PCS /CTN	Carton Size (mm×mm×mm)
8010072685	8010072684	20×1/2"	60	49.5	68	81.5	R1/2"		

Filter(Soc×Soc×Fipt)



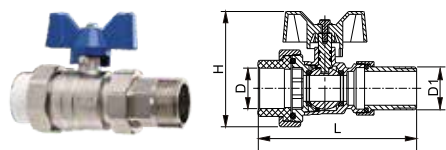
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071243	8010071241	20(2.0MPa)	16	70	38.1	144	410x280x330

Y-style Stop Valve (Soc×Soc×Fipt)



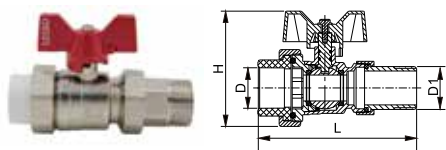
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H1	H2	PCS /CTN	Carton Size (mm×mm×mm)
8010071244	8010071242	20(1.6MPa)	98	39.9	78.1	48	410x280x330

Long Male Thread Ball Valve (blue butterfly handle)



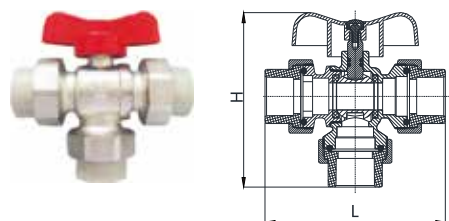
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010072289	8010072290	25×1"	120.5	82	25	1"		
8010072291	8010072292	32×1"	121.5	88.5	32	1"		

Long Male Thread Ball Valve (red butterfly handle)



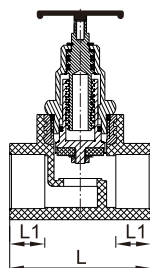
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010072293	8010072294	25×1"	120.5	82	25	1"		
8010072295	8010072296	32×1"	121.5	88.5	32	1"		

Tee Ball Valve (Soc×Soc×Soc)



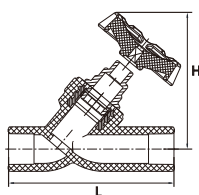
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070617	8010071120	25	113.3	109.5	36	410x280x330

Stop Valve (Soc×Soc)



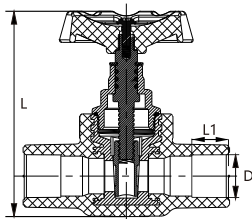
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070442	8010070448	20	64	16	72	410x280x330
8010070443	8010070449	25	74	18	60	410x280x330
8010070444	8010070450	32	82	20.5	36	410x280x330
8010070445	8010070451	40	85	22	36	410x280x330
8010070446	8010070452	50	115	25	30	410x280x330
8010070447	8010070453	63	121	29	20	410x280x330
8010072367	8010071924	75	129	31.5	12	410x280x330
8010072368	8010072034	90	184.5	37.5		
8010072933	8010072045	110	194	42	5	410x280x330

Fullbore stop valve



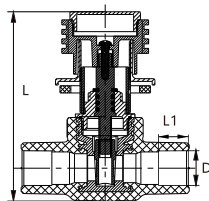
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072978	8010072977	20	104	86		
8010073006	8010073005	25	114	95		
8010073008	8010073007	32	130	107		

Concealed valve (Soc×Soc)



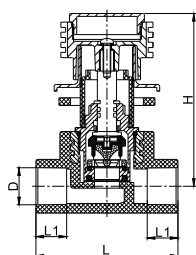
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	D	PCS /CTN	Carton Size (mm×mm×mm)
8010072886	8010072885	20	92.4	16.5	19.3		
8010072888	8010072887	25	92.4	18.5	24.2		

Luxury stype concealed valve (Soc×Soc)



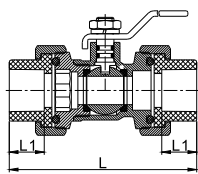
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	D	PCS /CTN	Carton Size (mm×mm×mm)
8010072882	8010072881	20	104.7	16.5	19.3	72	410x280x330
8010072884	8010072883	25	112	18.5	24.2	60	410x280x330

Concealed Valve (Soc×Soc)



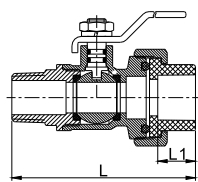
SAP Number (white)	SAP Number (gray)	Size (mm)	D	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070223	8010070224	20	20	16	74	90	72	410x280x330
8010070901	8010070918	25	24.2	18	80	91.5	60	410x280x330

**Ture Union Ball Valve
 (Soc×Soc)**



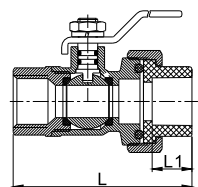
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070396	8010070402	20	16	85.8	96	410x280x330
8010070397	8010070403	25	18	93.8	72	410x280x330
8010070398	8010070404	32	20	103.2	36	410x280x330
8010070399	8010070933	40	22.5	120	24	410x280x330
8010070400	8010070405	50	25.5	133.5	12	410x280x330
8010070401	8010070934	63	29.5	152.5	6	410x280x330

**Male Thread Union Ball Valve
 (Soc×Mipt with Metal)**



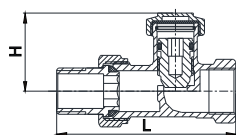
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070363	8010070366	20×1/2"	16	77.9	120	410x280x330
8010070364	8010070367	25×3/4"	18	83.9	96	410x280x330
8010070365	8010070368	32×1"	20	95.7	48	410x280x330
8010070906	8010070905	40×1 1/4"	22.5	111.5	30	410x280x330
8010070904	8010070903	50×1 1/2"	25.5	121	24	410x280x330
8010070927	8010070928	63×2"	29.5	138.3	12	410x280x330

**Female Thread Union Ball Valve
 (Soc×Fipt with Metal)**



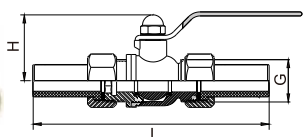
SAP Number (white)	SAP Number (gray)	Size (mm)	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070387	8010070390	20×1/2"	16	71.9	120	410x280x330
8010070388	8010070391	25×3/4"	18	75.4	72	410x280x330
8010070389	8010070392	32×1"	20	85.7	48	410x280x330
8010070910	8010070909	40×1 1/4"	22.5	103.5	24	410x280x330
8010070908	8010070907	50×1 1/2"	25.5	114	18	410x280x330
8010070931	8010070932	63×2"	29.5	128.3	12	410x280x330

**Straight Type Water Return Valve
 (Fipt with Metal×Mipt with Metal)**



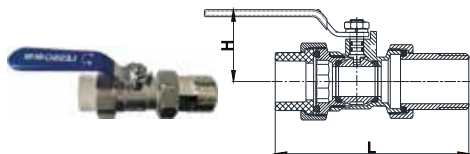
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071147	1/2"	80.5	25		
8010071148	3/4"	83.7	35.5		

Ball Valve (Spig×Spig)



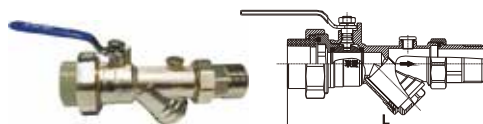
SAP Number (white)	SAP Number (gray)	Size (mm)	L	G	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070339	8010070342	20	142	3/4"	35	96	410x280x330
8010070340	8010070343	25	153	1"	37	72	410x280x330
8010070341	8010070344	32	172	1 1/4"	47.5	36	410x280x330

Long Male Thread Ball Valve (Soc×Mipt with Metal)



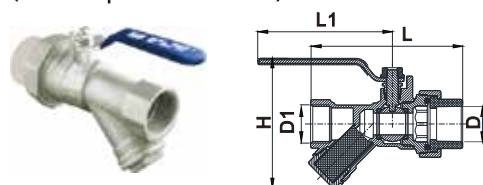
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071136	8010071138	25×1"	113.4	42		
8010071137	8010071139	32×1"	122	54.8		
8010072999	8010073000	40×1-1/4"	141.5	64.3		

Long Male Thread Ball Valve With Strainer (Soc×Mipt with Metal)



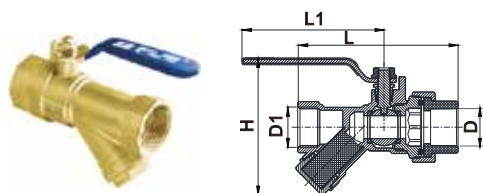
SAP Number (white)	SAP Number (gray)	Size (mm)	L	PCS /CTN	Carton Size (mm×mm×mm)
8010072161	8010072162	25×1"	169.5		
8010070978	8010070979	32×1"	171		
8010072997	8010072998	40×1-1/4"	205		

Nickel Plated Brass Ball Valve With Strainer 271 (Soc×Fipt with Metal)



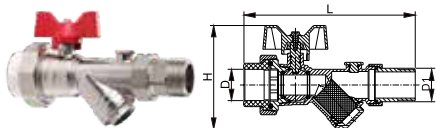
SAP Number (white)	SAP Number (gray)	Size (mm)	D	D1	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070980	8010070981	25×3/4"	25	3/4"	93	105	89.7		
8010070982	8010070983	32×1"	32	1"	93	128	99.2		

Brass Ball Valve With Strainer 261 (Soc×Fipt with Metal)



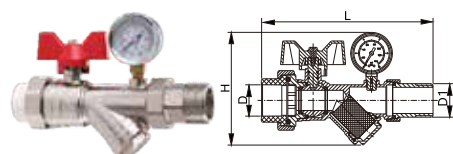
SAP Number (white)	SAP Number (gray)	Size (mm)	D	D1	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070984	8010070985	25×3/4"	25	3/4"	93	105	89.7		
8010070986	8010070987	32×1"	32	1"	93	128	99.2		

**Long Male Thread Ball Valve
With Strainer (butterfly handle)**



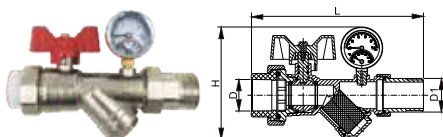
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010072277	8010072278	25×1"	169	103.2	25	1"		
8010072279	8010072280	32×1"	170	103.2	32	1"		

**Long Male Thread Ball Valve
With Strainer Meter
(butterfly handle)**



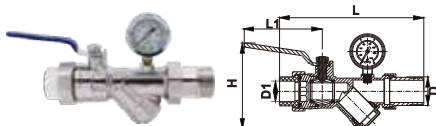
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010072281	8010072282	25×1"	169	111.7	25	1"		
8010072283	8010072284	32×1"	170	111.7	32	1"		

**Long Male Thread Ball Valve
With Strainer Temperature and
pressure integral meter
(butterfly handle) (Soc×Mipt with Metal)**



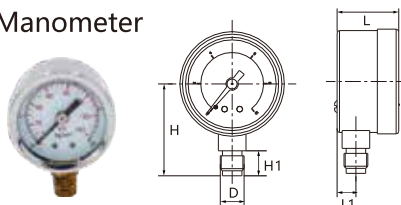
SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010072285	8010072286	25×1"	169	111.7	25	1"		
8010072287	8010072288	32×1"	170	111.7	32	1"		

**Long Male Thread Ball Valve
With Strainer
(Soc×Mipt with Meter)**



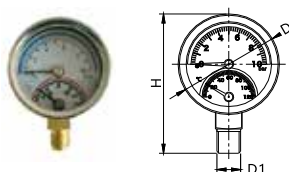
SAP Number (white)	SAP Number (gray)	Size (mm)	L	L1	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010072163	8010072164	25×1"	169.5	91.5	100.5	1"	25	36	410x280x330
8010072364	8010072363	32×1"	170.5	91.5	100.5	1"	32		

Manometer



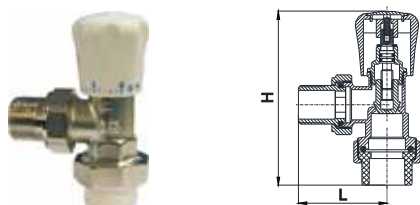
SAP Number	Size (mm)	L	L1	H	H1	D	PCS /CTN	Carton Size (mm×mm×mm)
8130054951	G1/8"	40	24.5	7.5	36.5	G1/8"	282	410x280x330

Temperature Gauge Manometer



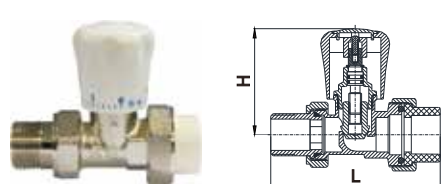
SAP Number	Size (mm)	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8130055612	G1/8"	52	42	G1/8"		

Manual Temperature Control Angle Valve
 (Soc×Mipt with Metal)



SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070618	8010071144	25×3/4"	60	118		
8010070619	8010071145	32×1"	75	132		

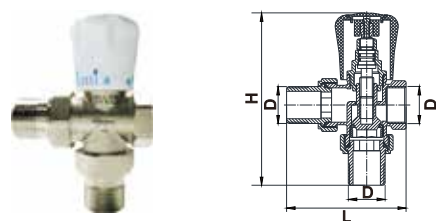
Manual Temperature Control Straight Valve
 (Soc×Mipt with Metal)



SAP Number (white)	SAP Number (gray)	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070620	8010071149	25×3/4"	105	66		
8010070621	8010071150	32×1"	130	77		

Manual Temperature Control Tee Ball Valve

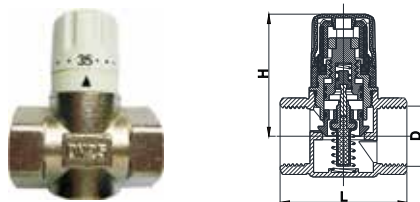
(Mipt with Metal×Mipt with Metal×Fipt with Metal)



SAP Number	Size (mm)	D	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071146	20	3/4"	85	123		

The User Control Water Temperature Control Valve

(Fipt with Metal×Fipt with Metal)



SAP Number	Size (mm)	D	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071143	25	1"	70	67.3		

Definitions of abbreviated configuration description follow

Soc: Socket

Spig: Spigot

Fipt: Female Iron Pipe Thread

Mipt: Male Iron Pipe Thread

■ Socket Fusion Joint for PP-R Pipelines

1. Cut the pipe rectangularly with pipe cutters. Take care that the pipe axis is free from burrs or cuttings debris and remove where necessary. Mark the welding depth at the end of the pipe according to the socket depth of fittings.
2. Clean the socket and the spigot with cleansing clothes.
3. After the welding machine reaches the necessary operating temperature, push the end of the pipe and fittings, without turning, up to the welding depth into the welding tool. Heat up the pipe's spigot and fittings' socket according to the following heating time.

The fusion is subject to the following data

Diameter (mm)	Welding Depth (mm)	Heating Time (s)	Welding Time (s)	Cooling Time (min)
16	14.5	5	4	3
20	15	5	4	3
25	17.5	7	4	3
32	19	8	6	4
40	21	12	6	4
50	23	18	6	5
63	25.1	24	8	6
75	33	30	8	8
90	36	40	8	8
110	38.9	50	10	10
160	48	80	20	15

Remark:

The heating time should comply with the requirement of products and be adjusted according to the working temperature. When the working temperature is below 5°C, the heating time should be extended by 50%.

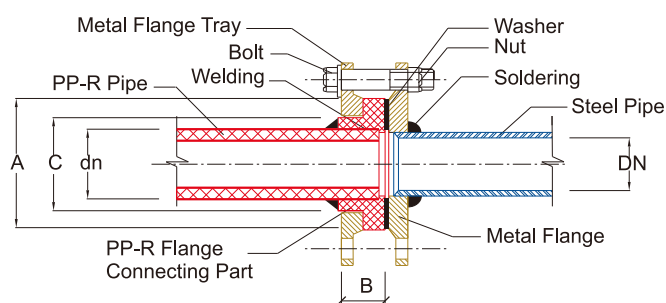
4. After the heating time, quickly remove the pipe and the fittings from the welding tools. Join them immediately without turning, until the marked welding depth is covered by the bead of PP-R from the fittings.
5. The joint elements have to be fixed during the specified assembly time. After the cooling period, the fused joint is ready for use.
6. Finish the welding.



■ Flange Joint PP-R Pipelines

1. Wrap the PP-R pipe with the metal flange tray in advance.
2. Connect the PP-R pipe and flange faucet by heating welding.
3. Wrap the flange faucet with the metal flange tray.
4. Keep the flange of PP-R pipe and flange of steel pipe vertical to the axes of pipes.
5. Add the washer between the two flanges, the washer should be heat resistant and meet the sanitary requirement.
6. Set up the brackets, connect the two flanges with the same size bolt in one direction. The bolt should be tighten without coaxial tension.

Flange Joint	Illustration						Unit: mm
dn	40	50	63	75	90	110	
C	27	30	34	38	42	50	
B	50	60	75	99.5	119.4	146.0	
A	78	87	100	122	140	166	



■ Layout of Pipe

1. Pipe should be installed in invisible manner, but avoiding the main wall.
2. Pipe can be installed in pipe well, hole or ceiling. When diameter of pipe is not more than 25mm, the pipe also could follow the grooved wall or cushion layer in the manner of butt-fusion connection. The laid node is showed in the picture 1, picture 2. The pipe used for heating should be protected by corrugated pipe sleeve which thickness is not less than 10mm.
3. If exposed to impact, freeze or sunshine, pipe should be protected reasonably.
4. When crossing the wall, girder, board or pole, pipe should be covered with sleeve pipe. If the crossed wall is underground wall, special moisture-resistant sleeve pipe is needed. Additional water-repellent measure should be taken into account when pipe crosses the floor layer or house wall.
5. Keep pipe far away from heating source. Vertical pipe is at least 400mm distant from water heater or cooker. If above requirement can't be fulfilled completely, heat-isolation measure should be taken with the distance not less than 200mm.
6. PP-R pipe must not be connected directly to water-heater where mental pipe with the length of at least 400mm should be used for transition.
7. Pipe should not cross extension slot or sedimentation slot. If pipe has to cross it, relevant measure should be taken against the extension or shearing distortion from pipe itself.
8. Mental pipe is used as supply and drainage pipe of tank and connection pipe from tank to valve.
9. The weight of valve should be fixed by additional support instead of pipe which is connected to valve.
10. Take UV protective or heat-isolation measurement when the pipe will be hanged in the air or exposed in the sun.
11. Lay the outdoor pipe connecting to house under the freeze-depth according to local climate. The depth of soil above the top of pipe should be not less than 300mm.

Fig. 1
Installation guidance for embedded pipe

Unit: mm

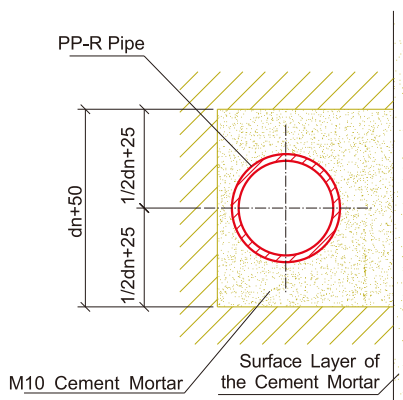
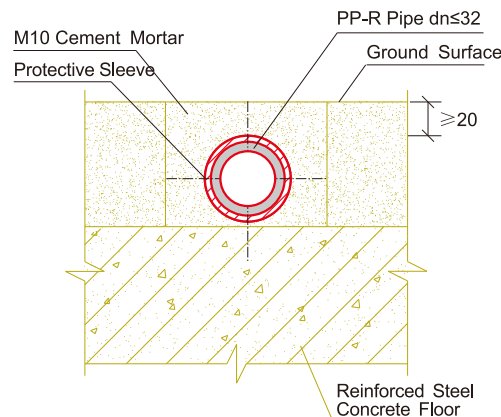


Fig. 2
Bury pipe in layer of backfilled groove

Unit: mm



■ Compensation for Pipe Distortion

Compensation measurement should be taken between the clamp fixing pipe so as to decrease and absorb the extension which leads to failure of fatigue in pipe for purpose of stable operation in pipe system. Usual measurement as follows

1. Bending leg is used as compensation for pipe system. It works following the theory of compensation from longitudinal expansion of bending leg. The method is also named after Bending Leg, showed as Fig.3. It is the simplest way than any other method and is prior to be chose.
2. The straight part of pipe system could be changed into ring or rectangle compensator which forms the second Bending Leg for compensation. Detail see Fig.4, Fig.5.
3. For heat-water pipe, it can be added with half-round mental support plate which can fix the pipe itself and absorb the expansion due to gap of different temperature. The method can reduce the extent of expansion effectively. As showed in Fig.6. The method works obviously and the Liansu' s relevant mental support plate is available now.
4. Except the method of Bending Leg, there is another method which replaces all the free clamp with fixed ones between designated fixed clamp. It results from the strategy of breaking up the whole into parts. Any kind of compensation measure depends on the design or field environment when we should make a choice .

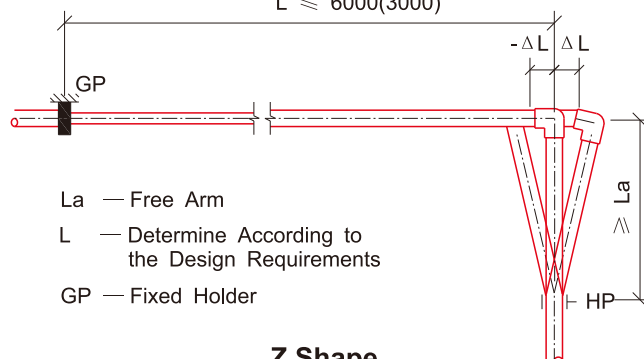
Fig.3
Sketch Map for Bending Leg in
Pipe System

Unit: mm

Note: The number in “ () ” is size for installation of heat-water pipe

L Shape

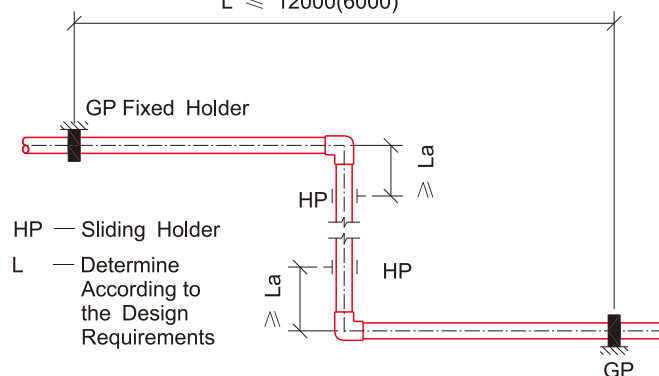
$L \leq 6000(3000)$



La — Free Arm
L — Determine According to the Design Requirements
GP — Fixed Holder

Z Shape

$L \leq 12000(6000)$



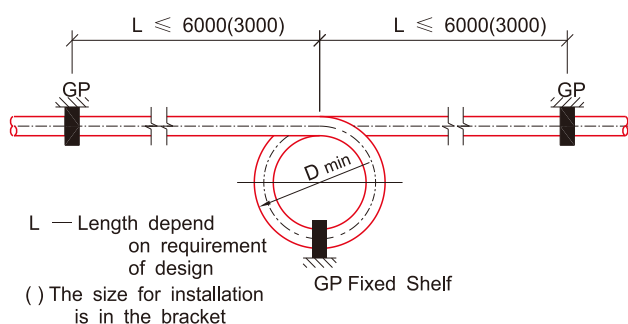
HP — Sliding Holder
L — Determine According to the Design Requirements

The Minimum Length of Bending Leg should Conform to the List Below.

Nominal Diameter: dn	20	25	32	40	50	63	75	90	110
Heating water pipe La	370	410	320	420	580	350	710	730	850
Cooling water pipe La	250	280	460	360	400	450	500	550	600

Fig.4
Installation of Ring-type Compensator

Unit: mm



Nominal Outside Diameter dn	20	25	32
Dmin	350	400	450

Fig.5
Installation of Rectangle-type Compensator

Unit: mm

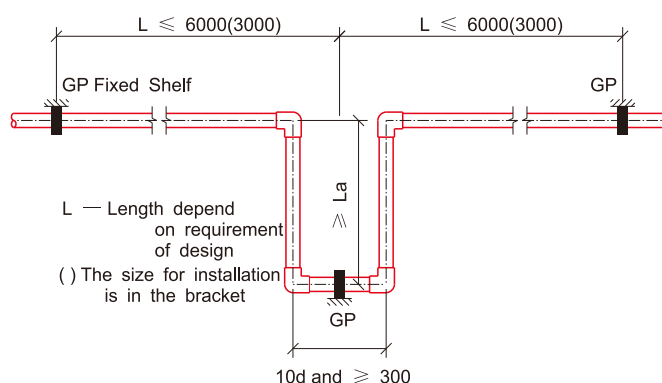
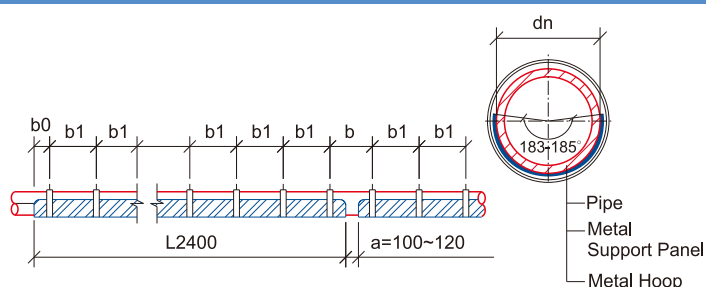


Fig 6 Metal Pipe Support and Installation

Nominal diameter dn	32	40	50	63	75	90	110
Distance of the supports b1	350	350	350	400	400	450	450
Thickness of the support panel	0.60	0.80	0.80	0.80	1.00	1.00	1.00



■ Pipe Construction

1. General Regulations

- 1.1** Check whether the appearance quality and size of the pipe and fittings comply with the requirements of design and construction before construction. Forbidden to use the pipe carried obvious scratch.
- 1.2** Review the S series of the pipe before construction, the mark on the pipe should face the outer side and place in the apparent location.
- 1.3** All of the machines used for solvent weld connection should be supplied by the manufacture, or the special welding machines have been verified by the authority parties.
- 1.4** Use special pipe cutter to cut the pipe, the fraction surface should be vertical with the center line of the pipe.
- 1.5** Seal up all of the open area immediately when discontinue the construction.
- 1.6** Pay attention to the low temperature brittleness of PP-R pipe when construct in winter.
- 1.7** The pipe system can be sealed and used after it passed the water pressure test and final acceptance.

2. Cross of the Pipe

- 2.1** The anti-leakage measurements should be well prepared before cross the pipe. The details of pipe crosses the floor show in figure 7 and figure 8. The crossing parts should be constructed with the clamps in the pipe system, take anti-leakage measurements, and fix the pipe well.
- 2.2** Pre-bury the steel waterproof sleeve when the pipe crosses the concrete wall in the basement. The construction details have been showed in figure 9.
- 3.3** Pre-bury the PVC-U sleeve when the pipe crosses brick wall or steel reinforced concrete wall. The construction details have been showed in figure 10.
- 3.4** Well prepare the anti-leakage measurements when the pipe crosses the roof surface for bearing persons or non-bearing persons. The construction details have been showed in figure 11 and 12.
- 3.5** Lay the pipe under the concrete floor and cross the floor when introduce the pipe in the house from outside. The construction details have been showed in figure 13.
- 3.6** When the water inlet, outlet and drain to empty pipe or other pipes cross the steel reinforced concrete pool (or water tank), the crossing pipe sections should be used coated steel-plastic composite pipe or stainless steel pipe with function of corrosion resistance from inner and outer side.
The construction details have been showed in figure 14.
- 3.7** Use corner type when introduce the pipe into the house, the length of the corner sections should be determined by the descendant length of the building, generally not less than 700mm.
- 3.8** When the pipe crosses multilayer of strips basic, then there should be gaps with height no less than 120-150mm on the pipe top. The construction details have been showed in figure 15.

Fig.8 Pipe Crosses Floor (II Type)

Unit: mm

The size for installation is in the bracket

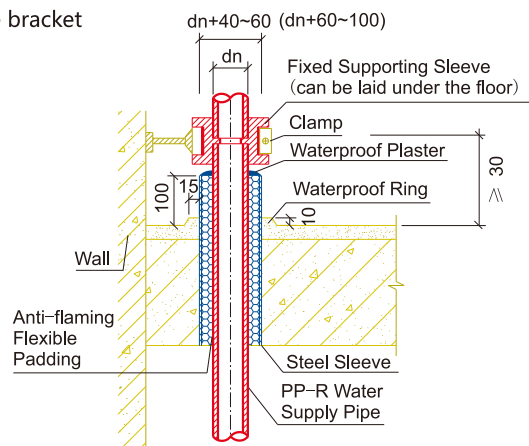


Fig.7 Pipe Crosses Floor (I Type)

Unit: mm

The size for installation is in the bracket

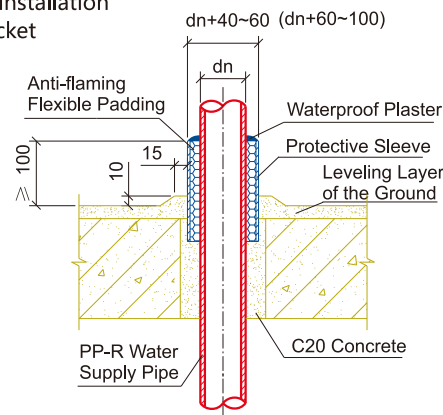


Fig.9 Pipe Crosses Concrete in the Basement

Unit: mm

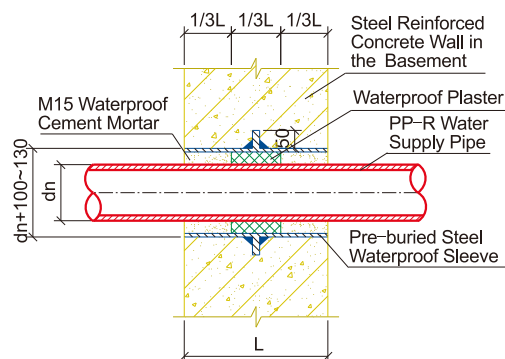


Fig.10 Unit: mm
Pipe Crosses Steel Reinforced Concrete and Brick Wall

() The sleeve used to wrap the heat isolation layer of the inner pipe

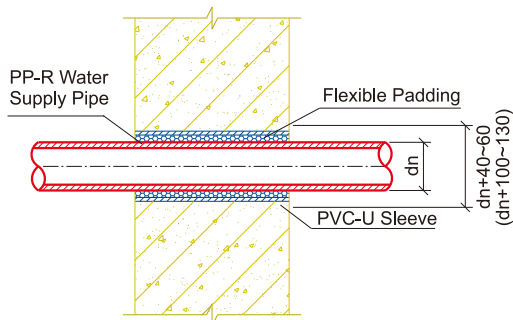


Fig.11 Unit: mm
Pipe crosses roof surface (bearing persons)

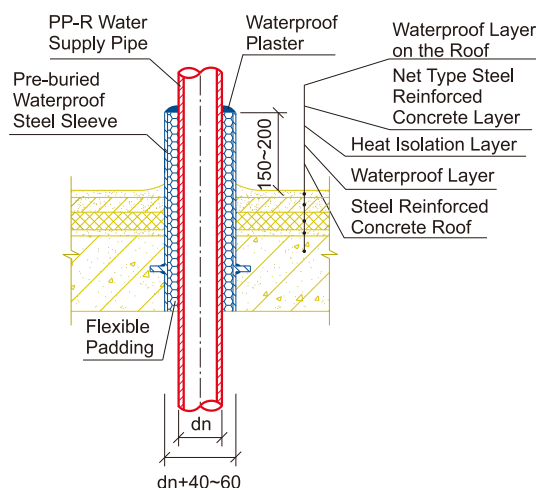


Fig.12 Unit: mm
Pipe crosses roof surface (non-bearing persons)

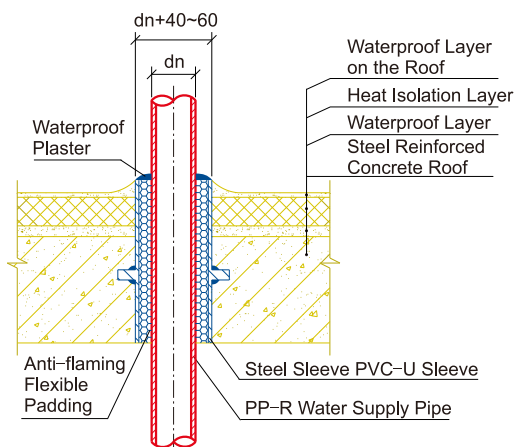


Fig.13 Pipe Crosses Ground Unit: mm

() The sleeve used to wrap the heat isolation layer of the inner pipe

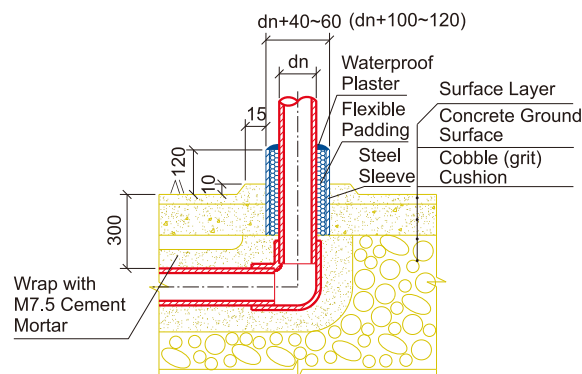


Fig.14 Unit: mm
Pipe Crosses Steel Reinforced Concrete Pool

(or water tank)

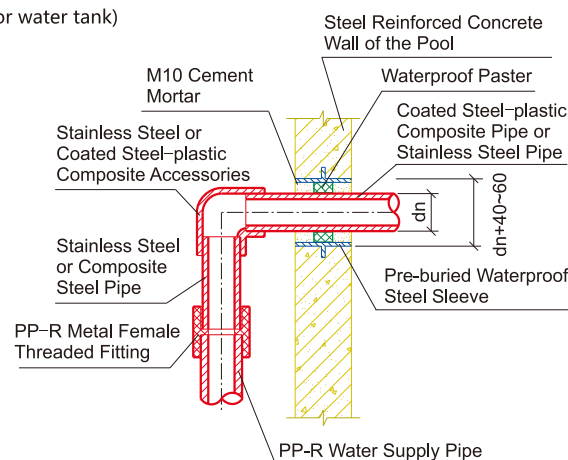
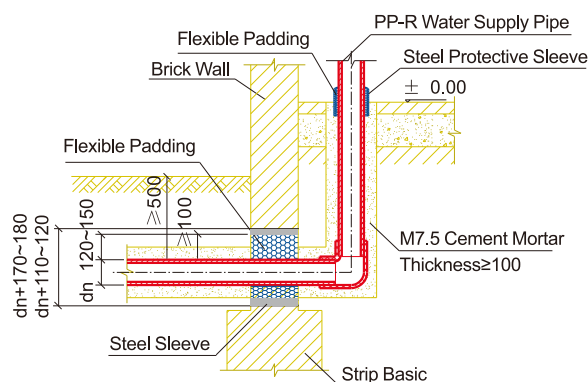


Fig.15 Unit: mm
Pre-buried Waterproof Steel Sleeve

() The sleeve used to wrap the heat isolation layer of the inner pipe



3. Installation of the Holder and Hanger

- 3.1** Set clamps, holders or hangers according to different diameters and requirements in the installation. The location of the clamps, holders or hangers should be precise, and the setting should be smooth. Though the clamp set close to the pipe, it should not damage the surface of the pipe.
- 3.2** In the vertical and horizontal pipe systems, the distance between the holders, hangers or clamps should comply with the requirements in the chart below. (mm)
- 3.3** When the pipe connects with metal accessories, the clamps, holders or hangers should be set on the metal accessories.
- 3.4** When use metal clamps, metal holders or metal hangers, the inner side of the hoops should be cylinder. And there should be gasket such as rubber gasket between the hoops and the pipe. The body of the fixed holders and hangers should bear enough stiffness. They should not deformed.
- 3.5** Set reliable fixing measurements on the parts of tee, elbow, end of the water distribution point, valve, and the parts where the pipe crosses wall (or floor). The bending leg for compensate the flexibility of the pipe should not be fixed.

Nominal Diameter dn		20	25	32	40	50	63	75	90	110
Cold Water Pipe	Horizontal Pipe	600	750	900	1000	1200	1400	1600	1600	1800
	Vertical Pipe	1000	1200	1500	1700	1800	2000	2000	2100	2500
Hot Water Pipe	Horizontal Pipe	500	600	700	800	900	1000	1100	1200	1500
	Vertical Pipe	900	1000	1200	1400	1600	1700	1700	1800	2000

Note: When the cold water pipe and hot water pipe share the same holders and hangers, the distance between the holders and hangers should be determined according to the requirements of hot water pipe. As regarding to the straight buried pipe, the distance between the clamps of cold water and hot water pipe can use 1.00~1.50m.

4. Anti-frozen, Heat Isolation and Heat Preservation of the Pipe

- 4.1** The pipe introduced into the house should be laid under the local frozen line. The thickness of the backfill earth above the pipe top should not less than 300mm.
- 4.2** The PP-R pipe should not be surface installed in outdoor. Or take effective shading measurements when unavoidable.
- 4.3** Take anti-frozen measurements when install the pipe in the area where may froze.
- 4.4** As regarding to the surface installation hot water pipe, the min. thickness of hear preservation layer has been showed in the chart below.
- 4.5** Set reliable fixing measurements on the parts of tee, elbow, end of the water distribution point, valve, and the parts where the pipe crosses wall (or floor). The bending leg for compensate the flexibility of the pipe should not be fixed.

Heat conduction coefficient of the heat preservation material w/m.°C	0.030	0.035
Nominal diameter of the pipe (mm)	Recommended min. thickness of the heat preservation layer	
20	6mm or 1/4"	10mm or 3/8"
25	6mm or 1/4"	10mm or 3/8"
32	10mm or 3/8"	13mm or 1/2"
40	10mm or 3/8"	13mm or 1/2"
50	10mm or 3/8"	13mm or 1/2"
63	13mm or 1/2"	20mm or 3/4"
75	20mm or 3/4"	20mm or 3/4"
90	20mm or 3/4"	25mm or 1"
110	20mm or 3/4"	32mm or 1 1/4"

5. Safety Construction

- 5.1** Check the electric power and the voltage when using the solvent weld or electro fusion machines. Comply with the safety operation regulations of the electric tools. Maintain the cleaning of the tools and pay attention to prevent damp.
- 5.2** There should be no flame in the construction site. Forbidden to store inflammable fluids in the construction site, and forbidden to bend the PP-R pipe by using flame.
- 5.3** Check if there's any objects block the pipe before connection. Seal up the pipe end when stop construction temporarily.
- 5.4** After seal the straight buried pipe, stick related marks on the wall or the ground surface where buried the pipe. Forbidden to knock or peg metal nail or other sharp objects above the pipe.

■ Annex

The relationship between pipe series S and nominal pressure PN

- 1.** When the total using (design) coefficient of the pipe is 1.25, then the relationship of the pipe series and the nominal pressure PN shows in the below chart:
- 2.** When the total using (design) coefficient of the pipe is 1.5, then the relationship of the pipe series and the nominal pressure PN shows in the below chart:

Chart1. Relationship between the pipe series S and nominal pressure PN (C=1.25)

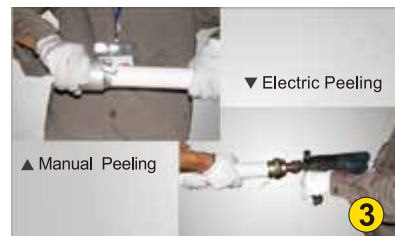
Pipe Series	S5	S4	S3.2	S2.5	S2
Nominal Pressure PN/MPa	1.25	1.6	2.0	2.5	3.2

Chart2. Relationship between the pipe series S and nominal pressure PN (C=1.5)

Pipe Series	S5	S4	S3.2	S2.5	S2
Nominal Pressure PN/MPa	1.0	1.25	1.6	2.0	2.5

■ Socket Fusion Joint for PP-R / Aluminum Composite Pipelines

1. Deburring the connecting end of the pipe, use scissors or saw to smoothing and squaring the pipe end. And turn on the solvent weld machine (the solvent weld machine should be operated according to the specification strictly).
2. Take out the corresponding peeling tool (generally use manual peeling tool for $\Phi 20$ - $\Phi 40$, use electric peeling tool for the diameter above).
3. Insert the pipe into the peeling tool. Before the peeling tool starts to spin, hold the pipe against the blade. Mark the inserting depth on the pipe (the specific depths are showed in the chart below)
4. Turn on the peeling tool, until peel to the mark line.
5. Take out the pipe from the peeling tool. Insert the fitting into the solvent weld machine first, until the heating depth reaches 50% of the specific depth, then insert the pipe into the machine, makes the pipe and fitting insert into the bottom of the machine at the same time. The solvent weld temperature should be $260 \pm 10^\circ\text{C}$.
6. Insert the pipe into the fitting quickly without rotation when reached the specific time. After the cooling period, the solvent weld joint is ready for use. (the specific heating and cooling time have been showed in the chart below)



Inserting Depth and Solvent Welding and Cooling Time

Diameter (mm)	Welding Depth (mm)	Heating Time (s)	Welding Time (s)	Cooling Time (min)
20	11.0	5	4	2
25	12.5	7	4	2
32	14.6	8	6	4
40	17.0	12	6	4
50	20.0	18	6	4
63	23.9	24	8	6
75	27.5	30	8	8
90	32.0	40	8	8
110	38.0	50	10	8

Note:

The environment temperature fits for this chart is 20°C . When the environment temperature in the construction site belows 20°C , then prolong the heating time.

■ Installation Guide

1. Concealed installation pipe

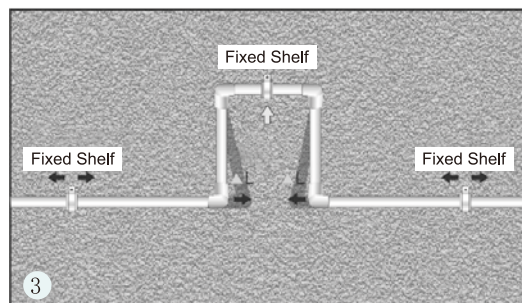
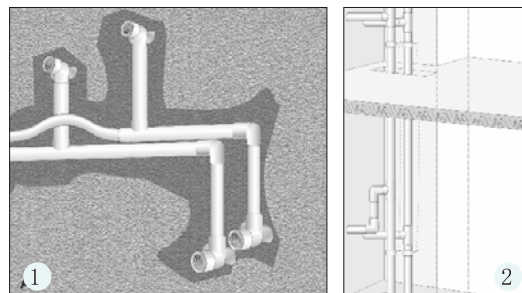
The pipe can prevent to expand when its buried in the wall, floor or the templet. The pressure and the tensile stress can be absorbed without damage every materials. When the pipe contains isolation materials (the material should fit for the standards), these isolation materials should allow for more expansion.

2. Install the pipe in the vertical well

The main vertical pipe can expand or shrink vertically between two floors if install fixed holders on both branch pipes near the main pipe. The distance between the two fixed holders should not exceed 3m. It can be used other methods to compensate the expansion, such as use the corner of branch pipe to compensate naturally.

3. Surface installation pipe

In some situation, use a kind of expand return circle ("U" return circle) to compensate the flexible length of the pipe. When install the fixed holders, pay attention to separate the pipe into each parts. Then the expansion power can be led to the needed direction.



■ Construction

1. General Regulations

1.1 Make the preparation before construction:

- 1) Prepare all of the drawings and the related technique papers, hand over them to the construction party, make sure the requirements of the construction are specific.
- 2) Prepare the construction program, pipe, fittings, cutting and peeling tools, special solvent weld machines and other needed conditions.
- 3) Train the construction workers about the PP-R aluminum-plastic composite pipe installation technique.
- 4) Temporary facilities such as construction site and the material storage area. Make sure that the electric power can fully supply the construction need.

1.2 Before system construction, the workers should know about the structure of the building, the design drawings, the construction program, the general performance of the PP-R aluminum-plastic composite pipe and fittings, the basic operation points. Forbidden to construct blindly.

1.3 When the temperature between the construction site and the material storage area has wide range, then put the pipe and fittings on the construction site for a certain while. Construct until the temperature of the pipe and fittings close to the construction site.

1.4 Check the appearance of the material and the joints carefully before system construction. Forbidden to use the pipe with obvious scratches, or pipe and fittings with oil or sundries.

1.5 Prevent the paints, asphalt or other chemical solvents to get touch with the pipe and fittings in construction.

1.6 For ensuring the unblocked and cleanness of the PP-R aluminum-plastic composite pipeline, seal up the pipe end immediately when finish the installation or discontinue the construction.

1.7 Review the pressure grade (S series) and the type of the pipe before construction. Different types of PP-R aluminum-plastic pipes should not be mix installed. The mark on the pipe should face outside.

1.8 Take anti-frozen measurements when construct in winter.

2. Layout of Pipe

- 2.1** The indoor horizontal pipe should be laid in the ground, the indoor vertical pipe should be laid in the preserved groove. The indoor surface installation pipe should be installed after whitewash the building. Check whether the reservation location for the groove is right before installation.
- 2.2** Reserve the holes and grooves for the PP-R aluminum-plastic composite pipe when it crosses wall, floor or concealed buried in the all. When there's no regulations about the dimension design, the following requirements should be executed:
 - 1)** The dimension of the reservation hole should be 50~100mm greater than the pipe outside diameter.
 - 2)** The width of the groove for the concealed bury-in-wall pipe should be $dn+40mm$, the depth should be $dn+20mm$. The surface of the groove should be smooth. And the pipe should be fixed. The groove in the wall should be backfill dense by using cement mortar after the pipe passed the water pressure test.
 - 3)** The vacancy above the pipe top should not less than 100mm.
- 2.3** The PP-R aluminum-plastic composite pipe should be laid according to the design drawings when supposed to concealed bury in the ground or the wall. Then mark the location and the direction of the pipe obviously. Forbidden to impact or peg the metal nail or other sharp objects on the pipe. If there were any changes in construction, there should be records on the drawings.
- 2.4** Set sleeve when the PP-R aluminum-plastic composite pipe crosses floor, the sleeve should at least 100mm higher than the ground surface. Take waterproof measurements at the same time, When the pipe crosses the outer wall of the basements or underground buildings or roof surface, there must set metal sleeve to protect the pipe, and use rigorous waterproof measurements.
- 2.5** Preset metal sleeve when the PP-R aluminum-plastic pipe crosses the wall.
- 2.6** There should be no deformation along the axis when install the PP-R pipe. Forbidden to adjust by force.
- 2.7** Keep a certain protective distance between the PP-R aluminum-plastic composite pipe and other metal pipe when lay them paralleled, the net distance should not less than 100mm. The PP-R aluminum-plastic composite pipe should be laid on the inner side of the metal pipe.
- 2.8** As regarding to the pipe buried in the floor, in the leveling layer or in the wall, make water pressure test on them or write down the final acceptance records of the concealed project before seal them up.
- 2.9** The horizontal PP-R aluminum-plastic composite pipe should has a water discharge gradient of 2‰~5‰.

3. Installation of Holder and Hanger

- 3.1** Set the right holder and hanger according to different pipe diameter and requirements when install the PP-R aluminum-plastic composite pipe. The location should be right, the setting should be smooth and fastness.
- 3.2** The touch between the clamp and the pipe should be close, but the clamp should not damage the pipe surface. Use teflon tape or rubber gasket as cushion between the metal clamp and the pipe. The clamp should be set on the metal pipe accessories when use the metal pipe accessories connect with PP-R pipe.
- 3.3** The distance between the holders should comply with the following requirement: please see the page below.
- 3.4** Set fixed holders on the valve, water meter, float ball valve or other accessories, but the weight of the holders should not fall on the pipe.
- 3.5** The min. dimension of the holder and hanger should be determined according to the pipe diameter.
- 3.6** As regarding to the holders and hangers on the surface installation pipe, construct according to the requirements when take anti-expansion measurements on them. Take reliable fixed measurements on the water distribution point, weight bearing point and pitch point of the branch pipe which crossed the wall.

As regarding to the layout of pipe compensate naturally, the max. eistance between the houlders should comply with the requirements in the chart below: The max. distance between the holders of pipe compensate naturally (m)

Nominal Diameter dn(mm)		20	25	32	40	50	63
Horizontal Pipe	Cold Water Pipe	0.8	0.9	1.0	1.1	1.3	1.4
	Hot Water Pipe	0.6	0.7	0.8	0.9	1.0	1.2

As regarding to the layout of pipe by using continuous fixing holders, the max. distance between the holders should comply with the requirements in the chart below:

The max. distance between the continuous fixing holders(m)

Nominal Diameter dn(mm)		20	25	32	40	50	63
Straight Pipe		0.7	0.8	0.9	1.0	1.1	1.2
Horizontal Pipe	Cold Water Pipe	0.7	0.8	0.9	1.0	1.2	1.4
	Cold & Hot Water Pipe	0.5	0.6	0.7	0.8	0.9	1.1

4. Anti-frozen, Heat Isolation, Heat Preservation, Anti-dew

- 4.1** The buried introduction pipe should be buried at least under 300mm below the local frozen line.
- 4.2** Prevent the PP-R aluminum-plastic composite pipe from being frozen when use it in the frozen area. Take hear preservation measurements when surface laid in outdoor, or indoor when maybe frozen.
- 4.3** The PP-R aluminum-plastic composite pipe can be surface laid directly.
- 4.4** Take heat preservation measurements on the surface laid hot water pipe. Wether use hear preservation measurements by the designers on the straight concealed buried pipe and non-straight concealed buried pipe through calculation.
- 4.5** Take anti-dew measurements when lay the PP-R aluminum-plastic composite pipe in the environment where may produce dew. The thickness of the heat isolation layer should be calculated according to the water temperature, environment temperature and fitness of the pipe.

5. Water Pressure Test

- 5.1** The test pressure of the cold water pipe should be 1.5 times of design pressure of the cold water pipe system, but not less than 0.9MPa.
- 5.2** The test pressure of the hot water pipe should be 2.0 times of design pressure of the hot water pipe system, but not less than 1.2MPa.
- 5.3** The water pressure test of the PP-R aluminum-plastic composite pipe should comply with the requirements below:
 - 1)** As regarding to the solvent weld pipe, the water pressure test should be proceeded after 24h when finished the joint.
 - 2)** The pipe should be fixed before water pressure test, the joints should be exposed.
 - 3)** Drain out the air in the pipe when full fill water into the pipe, then proceed water tightness test.
 - 4)** Slowly raise the pressure by using manual pump, the pressure raise time should not less than 10min. The pressure precision of the test equipment should not less than 0.01MPa..
 - 5)** Raise the pressure to the specific test pressure (allow for adding pressure to the test pressure twice in 30min). Keep the pressure for 1h, check if there' s any leakage, and the pressure descendant should not exceed 0.06MPa.
 - 6)** After passed the first pressure test, go on the second pressure test on the system. Raise the pressure to 1.15 times of the design working pressure, then keep the pressure for 2h. The pressure descendant should not exceed 0.03MPa. Check if there's any leakage. If there's no any leakage, then the system should be determined to pass the test.
- 5.4** As regarding to the pipe straight buried in the floor or the wall, the water pressure test should be proceeded before construct the surface layer and seal up. After the pipe pass the pressure test, then continue the construction. When there' s large scale project, the water pressure test can be proceeded section by section according to the construction schedule.
- 5.5** Take effective anti-frozen measurements when proceed water pressure test in winter in frigid area. Drain out the water immediately after the test.

■ PP-R Water Pipe's 8760 h Hydrostatic Pressure Test Report (Bodycote)

Bodycote Report

HYDROSTATIC PRESSURE TESTING
Hydrostatic pressure testing of the quality control points for a grey PP-R pipe grade from Shunde City Liansu Technology Industrial Co., Ltd.

Final report
Ulrika Andersson

Bodycote Polymer (formerly Studsvik Polymer)
Restricted distribution

BODYCOTE POLYMER AB (formerly Studsvik Polymer AB)
BODYCOTE/P-02/144
2002-08-28 P-7316

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HYDROSTATIC PRESSURE TESTING
Hydrostatic pressure testing of the quality control points for a grey PP-R pipe grade from Shunde City Liansu Technology Industrial Co., Ltd.

Final report
Abstract
A hydrostatic pressure-testing program has been initiated on a contract from Institute of Plastics Processing and Application of Light Industry. The aim of the work is to verify whether the grey PP-R pipe grade from Shunde City Liansu Technology Industrial Co., Ltd. should pass the quality control points stated in the ISO/DIS 15874-2.2 (pEN 12202-2:1999) document. The work was ordered on August 6, 2001.

A total of 13 pipes have been started at 20°C, 95°C and 110°C. The longest exposure time exceeds 8 760 h.

The pipe specimens at 20°C and 95°C were fitted with commercial brass fittings (Bredco). At 110°C the pipe specimen was fitted with PVDF fittings.

All started pipe specimens passed the quality control points given in the standard document ISO/DIS 15874-2.2 (pEN 12202-2:1999) Table 8 and Table 9.

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Swedish Board for Accreditation and Conformity Assessment (SWEAC) is one of the signatories to the Multilateral Agreement of the European cooperation for Accreditation (EA) for the mutual recognition of calibration certificates and test reports.

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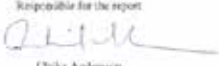
BODYCOTE POLYMER AB (formerly Studsvik Polymer AB)
BODYCOTE/P-02/144
2002-08-28

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1 Investigated pipe material	1
2 Experimental procedure	3
3 Results	3

Appendices

A	Investigated pipe material, Table A.1
B	Hydrostatic Pressure Testing, Tables B.1-B.3

Responsible for the report

Ulrika Andersson

Reviewed by

Daniel Johansson

Approved by

Janne Hansson

BODYCOTE POLYMER AB (formerly Studsvik Polymer AB)
BODYCOTE/P-02/144
2002-08-28

1 Investigated pipe material
The characteristics and code of the investigated pipe material are presented in Appendix A, Table A.1.

2 Experimental procedure
All tests have been performed at the Polymer laboratory at Bodycote Polymer AB (formerly Studsvik Polymer AB). The accuracy of temperature is better than ± 1°C. The testing was carried out with water-filled pipes. At 20°C and 95°C the external media was water and at 110°C the outer media being air. The accuracy for the temperature and the pressure¹ are better than ± 1°C and ± 0.1 bar, respectively. The measurements of the wall thickness² are accurate within ± 0.01 mm and the diameters³ within ± 0.1 mm. The water was deionized.

Two types of fittings have been used, commercial brass fittings (Bredco) at 20°C and 95°C. At 110°C have plastic fittings made of poly(vinylidene difluoride) (PVDF) been used. These fittings were manufactured by Bodycote Polymer AB.

The general testing conditions follow ISO 1167:1996.

3 Results
Pressure testing has been performed at 20°C, 95°C and 110°C. At 20°C and 95°C the external media was water and at 110°C the outer media was air. The results and observations obtained from the pressure testing are presented in Appendix B, Tables B.1 through B.3.

A total of 13 pipe specimens have been started. Of these have 12 pipes been terminated after they passed the required exposure times specified in the ISO/DIS 15874-2.2 (pEN 12202-2:1999) document. In order to evaluate the thermal stability, one pipe specimen was started at 110°C. This pipe specimen is still under test after an exposure time exceeding 8 760 h.

All pipe specimens have passed the quality control points given in the ISO/DIS 15874-2.2 (pEN 12202-2:1999) document table 8 and table 9.

¹ The reported uncertainty of measurement has been estimated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which has a normal distribution corresponding to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA Publication EA-402 and is documented in Bodycote Polymer AB.

² The reported uncertainty of measurement has been estimated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which has a normal distribution corresponding to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA Publication EA-402 and is documented in Bodycote Polymer AB.

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Approval Number: W10040
Test Report: W10121-01

14th February 2017

Guangdong Lianhe Technology Industrial Co. Ltd.
Lianhe Industrial Estate,
Longgang Town,
Baoan Road,
Foshan City,
Guangdong
China

Water Regulations Advisory Scheme Ltd.
Unit 15,
Wilford Road,
Free & Far Industrial Estate,
Cwmri,
RNP11 4TD

**WATER REGULATIONS ADVISORY SCHEME LTD. OFFERS:
NATURAL APPROVAL**

The material referred to in this letter is suitable for contact with drinking water for domestic purposes having met the requirements of BS6841-2:2014, article 20.4. Suitability of non-mutual products for use in contact with water intended for human consumption will depend on their effect on the quality of the water.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its manufacture or practice complies for any use.

MULTIPEX/PEX/PE-RTA - COMPONENTS **0308**

CLIPPEX/PEX/PE-RTA They contained extruded polyethylene pipe. For use with water up to 80°C.

APPROVAL NUMBER: 100540
APPROVAL HOLDER: GUANGDONG LIANHE TECHNOLOGY INDUSTRIAL CO. LTD

The Scheme reserves the right to revoke approval.
Approval W10040 is valid from 01 October 2014 until 31 October 2021.

An entry as above, will accordingly be included in the Water Fittings Directory on line under the section headed: 'Materials which have passed for tests of effect on water quality'.

The Director may be contacted at: approval@wra.southwater.org

Yours faithfully

Jason Farnell
Approved & Signed Manager
Water Regulations Advisory Scheme

Our Water Regulations Advisory Scheme (WRAS) is designed to improve the standards of products used in water supply. We are a not-for-profit organisation, registered in England. Registered Office: 15 Wilford Road, Cwmri, RNP11 4TD. Tel: 01493 770001. Fax: 01493 770002. Email: info@wra.southwater.org



FACTORY APPROVAL CERTIFICATE

Certificate No.: **FA-BSVNH-16/135-03**

Name of the factory: **Guangdong Lianuo Technology Industrial Co., Ltd.**
 Address of the factory: **Lianuo Industrial Estate, Longjiang Town, Shunde Zone, Foshan City, Guangdong, P. R. China**

Type(s) of product manufactured: **PP-R PIPES**
 Information of product certified: **Annex E to Certificate**
 Applying standards: **GB 18742.2003 & GB 18742.2008**

After examination of the following documents:

- Quality System Certificate n° **18D0011-2011-0070918Q37733RSL**
- Factory Audit Report n° **FR-BSVNH-16/135-03**

The undersigned, Inspector of Bureau Veritas, certifies that the above factory meets the applicable requirements of BV procedure GM S1 310 for the production of the following types of pipes listed in Annex E to Certificate

This certificate is valid from **Sep. 19th, 2018**
 For a period of three years, ending **Sep. 18th, 2021**

This approval is only valid provided that every semi-annual audit (in annex) is done and found satisfactory by Bureau Veritas, and whenever significant changes are made to the audited facility, its production rate and its quality system. These conditions will be assessed during semi-annual audits.

This approval is an integral and indispensable part of the voluntary certification process of pipes by Bureau Veritas as defined in BV procedure GM S1 210

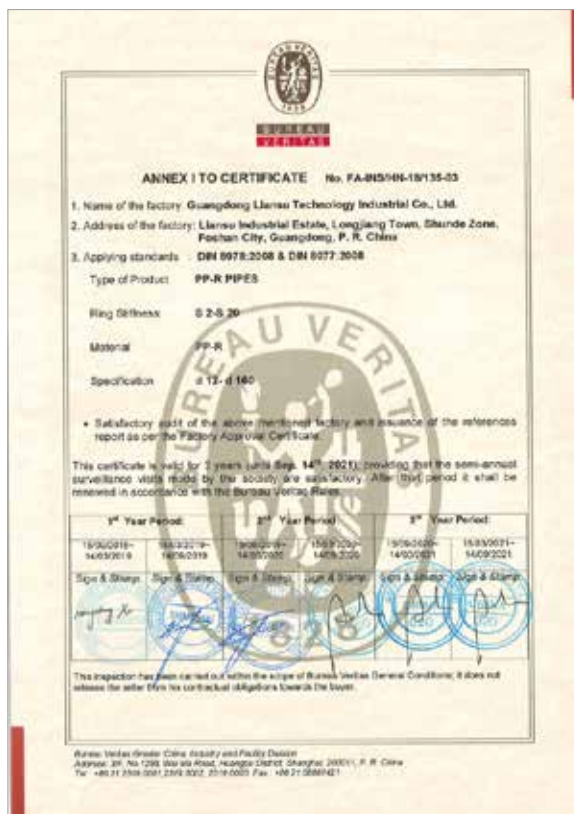
Made at: **Shanghai**

Name & signature:

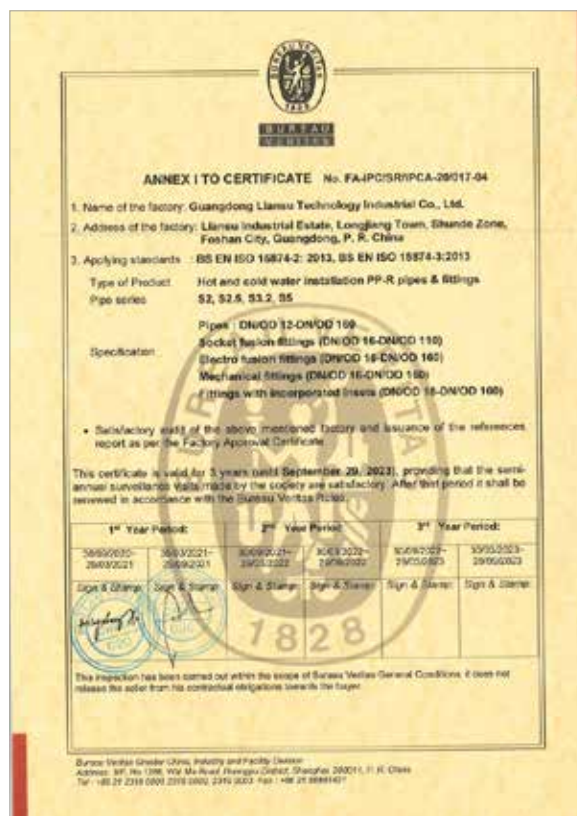
Mingsheng Ku

On: **Sep. 16th, 2018** BV China INS Department Product Manager

Bureau Veritas (Shanghai) Industry and Facility Division
 Address: 3F, No. 528, Yue Ma Road, Hongqiao District, Shanghai 200011, P. R. China
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■ BV Certification for PP-R Water Pipe and Fittings Comply with ISO 15874, EN ISO 15874, BS EN ISO 15874.



■ BV Certification for PP-R Water Pipe and Fittings Comply with DIN 16962



■ GOST license for PP-R Water Pipes

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ	
	СЕРТИФИКАТ СООТВЕТСТВИЯ
№ РОСС RU С-АН.001.18.001.001 Срок действия с 15.08.2012	ИД: 15.05.0022 № 1288053
ОРГАН ПО СЕРТИФИКАЦИИ (ин. № RU.RU.11.001) Федеральное государственное учреждение "ВНИИ" Место нахождения: 330004, Ростов, Сельскохозяйственная, 69а, ул. Курган 1-а, дом 67, этаж 3, квартирный корпус 302004, Ростов, Сельскохозяйственная, 69а, ул. Курган 1-а, дом 67, этаж 3, корпус 1 "Г" 330047-0000, телефонная линия: 8000000000, факс: 8000000000	
ПРОДУКЦИЯ Витаминная добавка к пище, обогащенная витамином С, в форме порошка	код ОКПД 2007: 281201
СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ нормативный документ: ГОСТ Р 51073-2008	код ТН ВЭД Еurasia: 281201
ПОТРЕБИТЕЛЬ GUANGDONG LINGYU TECHNOLOGY INDUSTRIAL CO., LTD Место нахождения: LINGYU INDUSTRIAL ZONE, Lingyue District, Foshan City, Guangdong Province, China, 528119	
СЕРТИФИКАТ ВЫДАН GUANGDONG LINGYU TECHNOLOGY INDUSTRIAL CO., LTD Место нахождения: LINGYU INDUSTRIAL ZONE, Lingyue District, Foshan City, Guangdong Province, China, 528119	
НА ОСНОВАНИИ Проведения испытаний на соответствие требованиям к 15.08.2012 г.г. выданным ПОСТАВЩИТЕЛЕМ АНОНИМНОМУ ОБЪЕКТУ С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ «МЕТАЛЛОЛС» аттестата аккредитации РОСС RU.11587.10.0001	
ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Срок действия: 1	
	Руководитель органа  Эксперт 
Сертификат не принимается для обязательной сертификации	

[illegible]

■ GOST license for PP-R Water Pipe Fittings

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р	
ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ	
	СЕРТИФИКАТ СООТВЕТСТВИЯ
№ РОСС RU С-СТА.АКЦИ.ВНД.01.19 Срок действия: с 15.08.2019 до 15.08.2022 № 1288055.	
ОРГАН ПО СЕРТИФИКАЦИИ по ТУ ВЛ.ВУ.114801 Общество с ограниченной ответственностью "ВЛАМ". Место нахождения: 352056, Россия, Ставропольская область, Орджоникидский район, п. д. 1 км, д. 5. Филиальный адрес: 352056, Россия, Ставропольская область, Орджоникидский район, п. д. 1 км, д. 5. Телефон: +7 (86574) 97030. Электронная почта: info@vlav.ru. Адресат сертификата: ТУ ВЛ.ВУ.114801 (ТУ ВЛ.ВУ.114801)	
ПРОДУКЦИЯ Безопасный автомобильный гидродинамический регулятор тормозов на базе ПК № 3J28877-312892, 1C3BAC Сертификат выдан:	
СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ НОРМАТИВНЫХ ДОКУМЕНТОВ Нормативный документ(ы) соответствия:	
ПОЛУЧЕНИЕ QUANQONG LINGU TECHNOLOGY INDUSTRIAL CO., LTD. Место нахождения: Liaozi Industrial estate, Lingquing town, Shunde District, Foshan City, Guangdong Province, China, 528310	
СЕРТИФИКАТ ВЫДАН QUANQONG LINGU TECHNOLOGY INDUSTRIAL CO., LTD. Место нахождения: Liaozi Industrial estate, Lingquing town, Shunde District, Foshan City, Guangdong Province, China, 528310	
НА ОСНОВАНИИ Поступила информация от ПЦНП/ГОСТ/РИ/ВНД/01/19 от 15.08.2019 года, выданная ИСПЫТАТЕЛЬНЫМ ЗАКАЗЧИКОМ ОБЩЕСТВОМ С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ «ВЛАМ/ВЛ.ВУ.114801», аттестат аккредитации РОСС RU.01.007.AT.00001	
ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ Ссылка на сертификат: _____	
	_____ Руководитель органа _____ Подпись _____ Секретарь
Сертификат не принимается при обязательной сертификации	

СИСТЕМА СЕРТИФИКАЦИИ ГОСТ Р ФЕДЕРАЛЬНОЕ АГЕНТСТВО ПО ТЕХНИЧЕСКОМУ РЕГУЛИРОВАНИЮ И МЕТРОЛОГИИ		
ПРИЛОЖЕНИЕ		
К сертификату соответствия № РОСС RU.СХ.АК2.В.0001.04		
Перечень объектов производства, на которых распространяется действие сертификата соответствия		
код ОК 045 10000	Данное приложение к сертификату распространяется на следующие объекты:	Географическое наименование, на которое распространяется действие сертификата соответствия
код ТН ВЭД России		
220602	PVC-U Drainage Pipe Fittings (Coupling): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	Наименование документа-основания
39140000	PVC-U Drainage Pipe Fittings (Reduction): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40. PVC-U Drainage Pipe Fittings (Elbow): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40. PVC-U Drainage Pipe Fittings (Long Coupling): DN10.	
	PVC-U Drainage Pipe Fittings (Elbow): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	
	PVC-U Drainage Pipe Fittings (Reduction): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	
	PVC-U Drainage Pipe Fittings (Elbow): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	
	PVC-U Drainage Pipe Fittings (Long Coupling): DN10.	
	PVC-U Drainage Pipe Fittings (Reduction): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	
	PVC-U Drainage Pipe Fittings (Elbow): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	
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	PVC-U Drainage Pipe Fittings (Elbow): DN2, DN4, DN6, DN8, DN10, DN12, DN16, DN20, DN25, DN32, DN40.	

■ SIRIM Certificate for PP-R Water Pipes

SIRIM QAS INTERNATIONAL SDN. BHD.
SIRIM QAS International Sdn. Bhd. is a subsidiary of SIRIM Berhad, a public listed company under the Securities Commission of Malaysia.

File No: **PS-400008** Date: **04/09/2021**
 License No: **PC027445**

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.
 LIANGJI INDUSTRIAL CO., LTD.
 LONGJIANG TOWN, SHANGHAI ZONE
 SHANGHAI, CHINA

App: **148** Status: **OPEN** Tel No: **006-75724330148**
 Fax No: **006-75724330302**

Dear Sir/Madam,

Product Certification License

Product: **POLYPROPYLENE (PP-R) PIPE FOR HOT AND COLD WATER INSTALLATIONS**
 Standard: **BS 13876-1: 2013**

This report is to be used as evidence for certification purposes of products under the SIRIM Product Certification License scheme, and is not to be used for any other purpose. The certificate report is for your safe keeping.

The company license number:

Official Name: **IRAN REZEEZ S.M. COMPANY**
 Contact No: **003-1444335**
 Email: **iranrezees@yandex.ru**

Thank you.

This is a computer generated document. No signature is required.

SIRIM QAS INTERNATIONAL SDN. BHD.
SIRIM QAS International Sdn. Bhd. is a subsidiary of SIRIM Berhad, a public listed company under the Securities Commission of Malaysia.

File No: **PS-400008** License No: **PC027445**

LESEN PENSIHLAN BARANGAN
Product Certification License

SIRIM QAS International Sdn. Bhd. mengesahkan lesen pensihlan
 kepada Syarikat (Sdn. Bhd.) berikut:

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.
LIANGJI INDUSTRIAL CO., LTD.
LONGJIANG TOWN, SHANGHAI ZONE
SHANGHAI, CHINA

Lesen pensihlan ini mengesahkan bahawa Syarikat tersebut telah mematuhi syarat-syarat lesen pensihlan ini.

POLYPROPYLENE (PP-R) PIPE FOR HOT AND COLD WATER INSTALLATIONS

Perincian produk yang disenaraikan dalam jadual berikut:

syarat-syarat lesen pensihlan
 ini mengesahkan:

BS 13876-1: 2013

(Signature)
Nur Fathimah binti Muhammad
 Ketua Pegawai Eksekutif
 Chief Executive Officer
 (SIRIM QAS International Sdn. Bhd.)

Small text at the bottom regarding the license and its validity.

SIRIM QAS INTERNATIONAL SDN. BHD.
SIRIM QAS International Sdn. Bhd. is a subsidiary of SIRIM Berhad, a public listed company under the Securities Commission of Malaysia.

File No: **PS-400008** License No: **PC027445**

SCHEDULE

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.

Table with 2 columns: Item No., Description. It lists various pipe sizes and standards.

Table with 2 columns: Item No., Description. It lists various pipe sizes and standards.

Table with 2 columns: Item No., Description. It lists various pipe sizes and standards.

Small text at the bottom regarding the license and its validity.

■ SIRIM Certificate for PP-R Water Pipe Fittings

SIRIM QAS INTERNATIONAL SDN. BHD.
SIRIM QAS International Sdn. Bhd. is a subsidiary of SIRIM Berhad, a public listed company under the Securities Commission of Malaysia.

File No: **PS-400008** Date: **04/09/2021**
 License No: **PC027445**

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.
 LIANGJI INDUSTRIAL CO., LTD.
 LONGJIANG TOWN, SHANGHAI ZONE
 SHANGHAI, CHINA

App: **148** Status: **OPEN** Tel No: **006-75724330148**
 Fax No: **006-75724330302**

Dear Sir/Madam,

Product Certification License

Product: **POLYPROPYLENE (PP-R) PIPE FITTINGS FOR HOT AND COLD WATER INSTALLATIONS**
 Standard: **BS 13876-1: 2013**

This report is to be used as evidence for certification purposes of products under the SIRIM Product Certification License scheme, and is not to be used for any other purpose. The certificate report is for your safe keeping.

The company license number:

Official Name: **IRAN REZEEZ S.M. COMPANY**
 Contact No: **003-1444335**
 Email: **iranrezees@yandex.ru**

Thank you.

This is a computer generated document. No signature is required.

SIRIM QAS INTERNATIONAL SDN. BHD.
SIRIM QAS International Sdn. Bhd. is a subsidiary of SIRIM Berhad, a public listed company under the Securities Commission of Malaysia.

File No: **PS-400008** License No: **PC027445**

LESEN PENSIHLAN BARANGAN
Product Certification License

SIRIM QAS International Sdn. Bhd. mengesahkan lesen pensihlan
 kepada Syarikat (Sdn. Bhd.) berikut:

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.
LIANGJI INDUSTRIAL CO., LTD.
LONGJIANG TOWN, SHANGHAI ZONE
SHANGHAI, CHINA

Lesen pensihlan ini mengesahkan bahawa Syarikat tersebut telah mematuhi syarat-syarat lesen pensihlan ini.

POLYPROPYLENE (PP-R) PIPE FITTINGS FOR HOT AND COLD WATER INSTALLATIONS

Perincian produk yang disenaraikan dalam jadual berikut:

syarat-syarat lesen pensihlan
 ini mengesahkan:

BS 13876-1: 2013

(Signature)
Nur Fathimah binti Muhammad
 Ketua Pegawai Eksekutif
 Chief Executive Officer
 (SIRIM QAS International Sdn. Bhd.)

Small text at the bottom regarding the license and its validity.

SIRIM QAS INTERNATIONAL SDN. BHD.
SIRIM QAS International Sdn. Bhd. is a subsidiary of SIRIM Berhad, a public listed company under the Securities Commission of Malaysia.

File No: **PS-400008** License No: **PC027445**

SCHEDULE

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.

Table with 2 columns: Item No., Description. It lists various pipe fittings and standards.

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File No: **PS-400008** License No: **PC027445**

SCHEDULE

QUANGDONG LIANGJI TECHNOLOGY INDUSTRIAL CO., LTD.

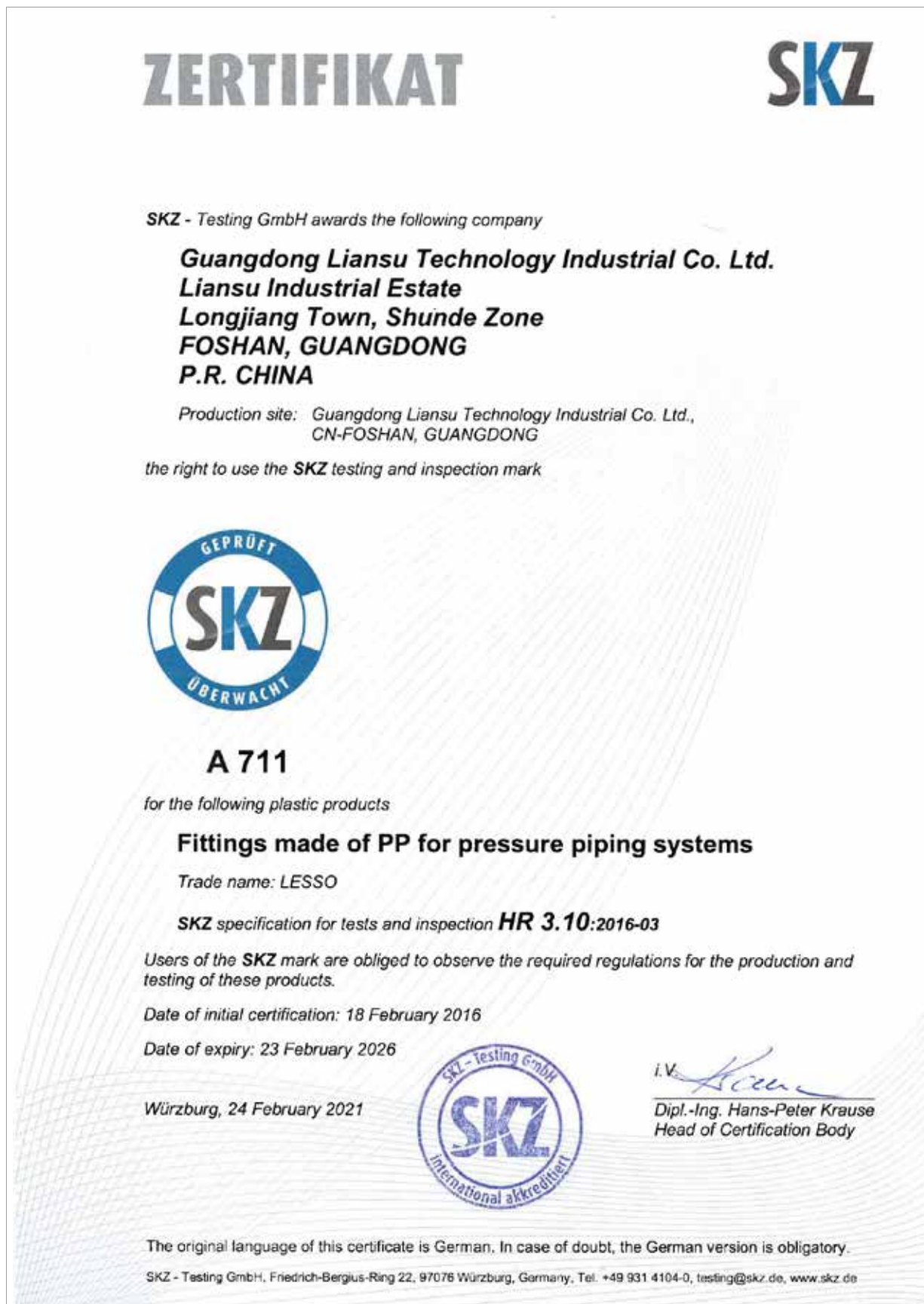
Table with 2 columns: Item No., Description. It lists various pipe fittings and standards.

Table with 2 columns: Item No., Description. It lists various pipe fittings and standards.

Table with 2 columns: Item No., Description. It lists various pipe fittings and standards.

Small text at the bottom regarding the license and its validity.

■ SKZ Certificate for PP-R Water Pipe Fittings





Telf: (01) 292-1431

Of. Administrativa: Av. Oscar R. Benavides N° 358 Block 19 - Dpt.: 202- Lima

Tienda Comercial: Av. Argentina N°327 Centro Comercial La Bellota W1-6 -Lima

Cel: 981 455 524 / 960 988 710 / 995 699 417 / 919 299 096

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