

LESSO



PP-R Water Pipe and Fittings (Green)





CHINA LESSO GROUP HOLDINGS LIMITED

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 30.767 billion in 2022.

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



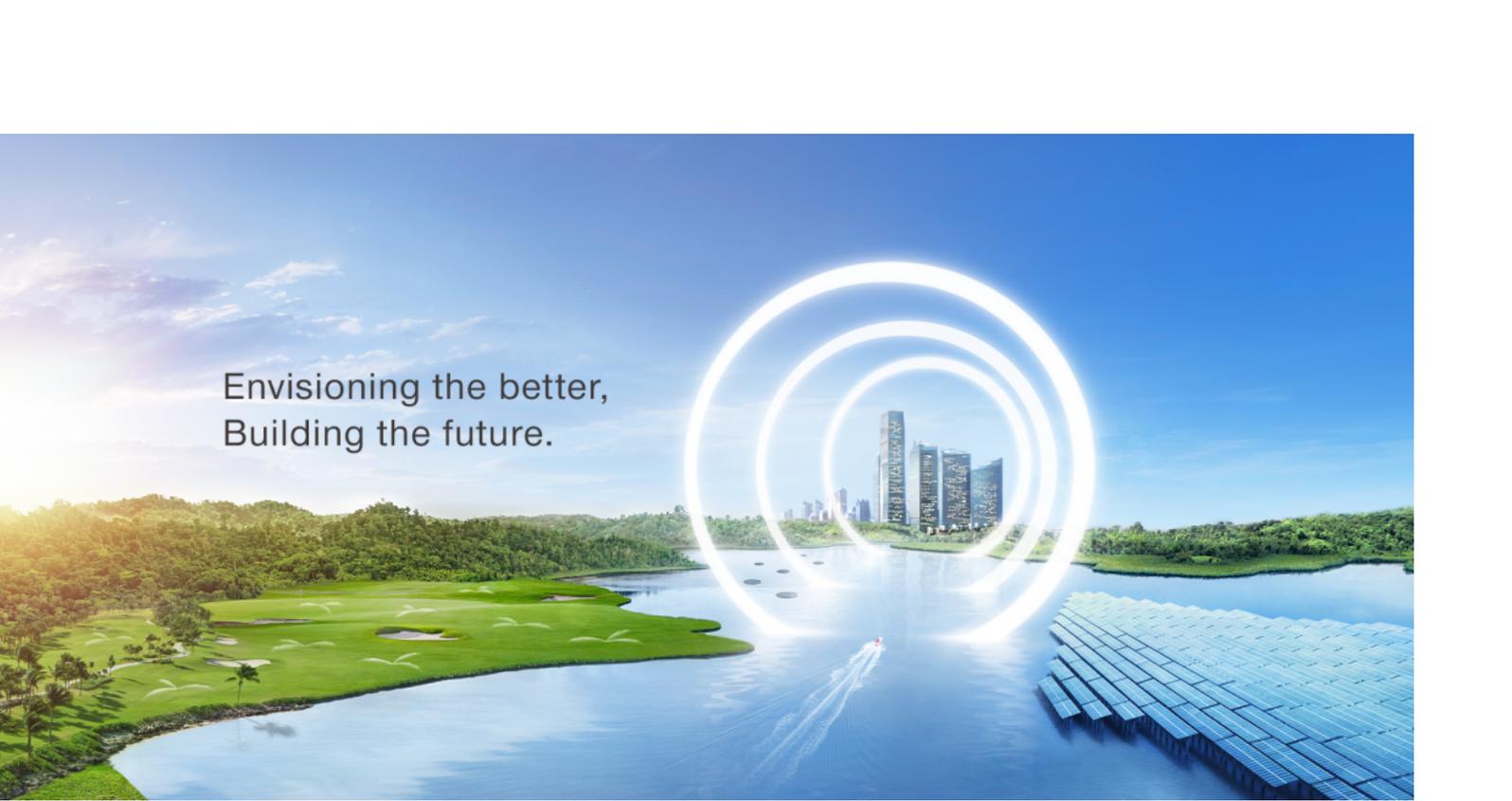
LESSO College



Training Apartment

LESSO Headquarter





Envisioning the better,
Building the future.

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Illustration of commercial mark included
in pipes's and fittings' publicity materials:

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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:** GB/T 18742-2, EN ISO 15874-2, BS EN ISO 15874-2, DIN8077, DIN8078, NSF/ANSI/CAN 61, NSF/ANSI N372
- ⊗ **Colors:**
 - Green, 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 ($d_n16 \sim d_n32$)
 - 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

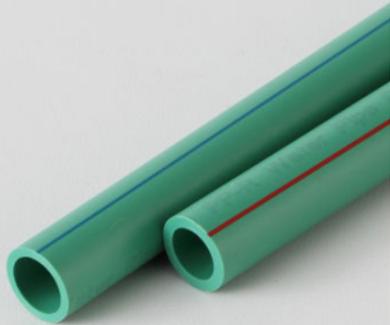
- ⊗ Cold and hot water supply
- ⊗ Heating system including flooring heating, wall heating and radiant system
- ⊗ Central air conditioning system
- ⊗ Industrial liquids transportation

■ 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	No Failure
	95°C, 1000h, Hoop Stress is 3.5MPa	No Failure
	110°C, 8760h, Hoop Stress is 1.90MPa	No Failure

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



S 5 (PN 1.25)

* Suitable for Cold Water Supply

SAP No. (5.8M)	d _n (mm)	e _n (mm)
8010060185	20	2.0
8010060186	25	2.3
8010060187	32	2.9
8010060188	40	3.7
8010060189	50	4.6
8010060190	63	5.8
8010060419	75	6.8
8010061528	90	8.2
8010061527	110	10.0
	125	11.4
8010061526	160	14.6

S 4 (PN 1.6)

* Suitable for Cold Water Supply

SAP No. (5.8M)	d _n (mm)	e _n (mm)
8010060109	16	1.9
8010060111	20	2.3
8010060113	25	2.8
8010060115	32	3.6
8010060117	40	4.5
8010060119	50	5.6
8010060121	63	7.1
8010061148	75	8.4
8010060906	90	10.1
8010060510	110	12.3
	125	14.0
8010061525	160	17.9

S 3.2 (PN 2.0)

* Suitable for Cold or Hot Water Supply

SAP No. (5.8M)	d _n (mm)	e _n (mm)
8010060376	16	2.2
8010060378	20	2.8
8010060379	25	3.5
8010060380	32	4.4
8010060381	40	5.5
8010060383	50	6.9
8010061098	63	8.6
8010061097	75	10.3
8010060999	90	12.3
8010061864	110	15.1
	125	17.1
	160	21.9

S 2.5 (PN 2.5)

* Suitable for Cold or Hot Water Supply

SAP No. (5.8M)	d _n (mm)	e _n (mm)
8010060295	20	3.4
8010060296	25	4.2
8010060297	32	5.4
8010060298	40	6.7
8010060299	50	8.3
8010060300	63	10.5
	75	12.5
8010060998	90	15.0
	110	18.3
	125	20.8
	160	26.6

Coil Pipe



S 5 (PN 1.25)

* Suitable for Cold Water Supply

SAP Number (50m)	d _n (mm)	e _n (mm)
8010060899	20	2.0
8010060900	25	2.3
8010060801	32	2.9

S 4 (PN 1.6)

* Suitable for Cold Water Supply

SAP Number (50m)	d _n (mm)	e _n (mm)
	16	1.9
	20	2.3
	25	2.8
	32	3.6

S 3.2 (PN 2.0)

* Suitable for Cold or Hot Water Supply

SAP Number (50m)	d _n (mm)	e _n (mm)
	16	2.2
	20	2.8
	25	3.5
8010060804	32	4.4

S 2.5 (PN 2.5)

* Suitable for Cold or Hot Water Supply

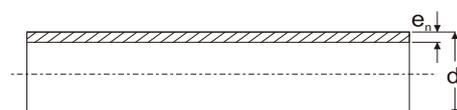
SAP Number (50m)	d _n (mm)	e _n (mm)
8010060901	20	3.4
	25	4.2
8010060902	32	5.4

S: Pipe Series

PN: Nominal Pressure (unit: MPa)

d_n: Nominal Outside Diameter

e_n: Nominal Wall Thickness





■ 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, DIN 16962, GB/T 18742-3
- ⊗ **Colors:** Green or other colors available upon request
- ⊗ **Joint:** Joining pipe and socket joint fittings by socket fusion joint

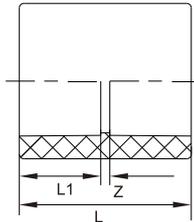
■ Advantages

- ⊗ **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

Definitions of abbreviated configuration description follow

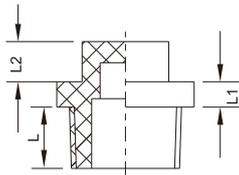
Soc: Socket	Fipt: Female Iron Pipe Thread
Spig: Spigot	Mipt: Male Iron Pipe Thread

Coupling (Soc×Soc)



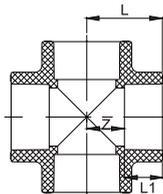
SAP Number	Size (mm)	Z	L1	L	PCS/CTN	Carton Size (mm×mm×mm)
8010070882	16	1	15	31	1200	410x280x330
8010070884	20	1.5	16	33.5	870	410x280x330
8010070885	25	1.5	18	37.5	520	410x280x330
8010070886	32	2	20	42	300	410x280x330
8010070887	40	1.5	22.5	46.5	210	410x280x330
8010070888	50	2	25.5	53	260	560x420x330
8010070889	63	2	29.5	61	150	560x420x330
8010070890	75	2	31.5	65	100	560x420x330
8010070891	90	3.5	36.5	76.5	50	560x420x330
8010070881	110	5	42	89	36	560x420x330
8010070883	160	9	58.5	126	10	560x420x330

Male Thread Plug (Mipt)



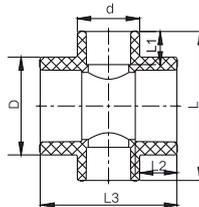
SAP Number	Size (mm)	L	L1	L2	PCS /CTN	Carton Size (mm×mm×mm)
8010070483	1/2"	12	5	9	1200	410x280x330
8010070484	3/4"	14	6	9	900	410x280x330
8010070482	1"	16.5	7	11	420	410x280x330

Cross (Soc×Soc×Soc×Soc)



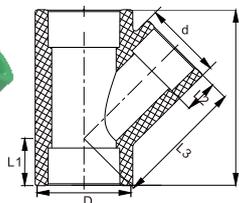
SAP Number	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070854	20	11	16	27	300	410x280x330
8010070855	25	14.8	18	32.8	192	410x280x330
8010070856	32	17.8	20	37.8	105	410x280x330
8010070857	40	22.3	22.5	44.8	63	410x280x330
8010070858	50	27.5	25.5	53	60	560x420x330

Reducing Cross (Soc×Soc×Soc×Soc)



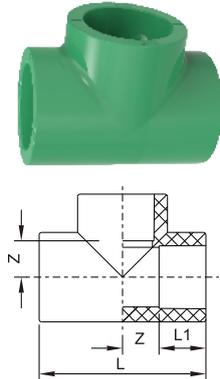
SAP Number	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
	40×25	81	18	22.5	74	53.2	33.8		

Reducing Wye (Soc×Soc×Soc)



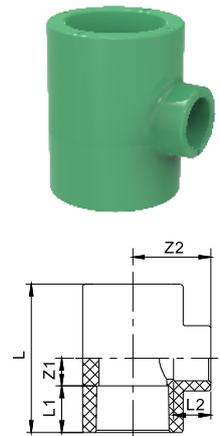
SAP Number	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
	50×40	120	32	22.5	88	66.6	53.2		

Tee (Soc×Soc×Soc)



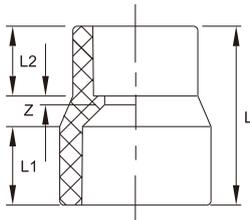
SAP Number	Size (mm)	L1	Z	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070090	16	15	8	46	640	410x280x330
8010070092	20	16	10	54	360	410x280x330
8010070093	25	18	14	64	240	410x280x330
8010070094	32	20	17.8	75.5	140	410x280x330
8010070095	40	22.5	21.5	88	90	410x280x330
8010070096	50	25.5	26.5	104	100	560x420x330
8010070097	63	29.5	32.5	124	60	560x420x330
8010070098	75	31.5	37.8	138.5	30	560x420x330
8010070099	90	37.5	45.5	166	20	560x420x330
8010070089	110	42	55.5	195	12	560x420x330
8010070091	160	58.5	91.5	300	4	560x420x330

Reducing Tee (Soc×Soc×Soc)



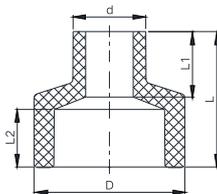
SAP Number	Size (mm)	Z1	Z2	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070166	20×16	8.8	25.5	16	15	49.5	360	410x280x330
8010070167	20×25×20	13.5	29.5	16	18	59	250	410x280x330
8010070168	25×16	8.5	27.5	18	15	53		410x280x330
8010070169	25×20	11.5	29.5	18	16	59	280	410x280x330
8010070170	25×20×20	13	28.5	18	16	59	250	410x280x330
8010070171	32×16	9	30.7	20	15	58	180	410x280x330
8010070172	32×20	12	33.5	20	16	64	160	410x280x330
8010070173	32×25	14	35	20	18	68	150	410x280x330
8010070174	40×20	12	37.5	22.5	16	69	112	410x280x330
8010070175	40×25	14.5	40.5	22.5	18	74	112	410x280x330
8010070176	40×32	17.5	42	22.5	20	80	88	410x280x330
8010070177	50×20	11.3	42.2	25.5	16	73.5	180	560x420x330
8010070178	50×25	13.5	44	25.5	18	78	168	560x420x330
8010070179	50×32	17.5	47.3	25.5	20	86	120	560x420x330
8010070180	50×40	21.5	49.3	25.5	22.5	94	120	560x420x330
8010072528	63×20	10.75	50	29.5	16	80.5		
8010070181	63×25	13.2	42.5	29.5	18	85.4	96	560x420x330
8010070182	63×32	16.5	55.5	29.5	20	92	96	560x420x330
8010070183	63×40	20.5	54	29.5	22.5	100	80	560x420x330
8010070184	63×50	25.8	56.8	29.5	25.5	110.5	60	560x420x330
8010070185	75×32	17	62	31.5	20	97	60	560x420x330
8010070186	75×40	21	59.5	31.5	22.5	105	50	560x420x330
8010070187	75×50	25.5	62.5	31.5	25.5	114	50	560x420x330
8010070188	75×63	32	67.2	31.5	29.5	127	36	560x420x330
8010070189	90×40	21.3	74	37.5	22.5	117.5	30	560x420x330
8010070190	90×50	26	71.5	37.5	25.5	127	28	560x420x330
8010070191	90×63	32.3	75	37.5	29.5	139.5	28	560x420x330
8010070192	90×75	37.5	77.5	37.5	31.5	150	25	560x420x330
8010070162	110×50	27.8	79.5	42	25.5	139.5	18	560x420x330
8010070163	110×63	33.8	84	42	29.5	151.5	15	560x420x330
8010070164	110×75	39	87.5	42	31.5	162	15	560x420x330
8010070165	110×90	46	91.5	42	37.5	176	14	560x420x330
8010073014	160×110	59	125	58.5	42	235		

Reducer (Soc×Soc)



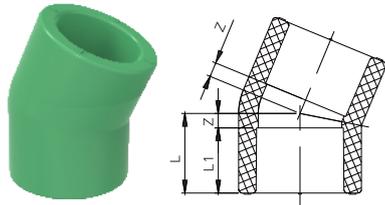
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8010070819	20×16	2	16	15	34.5	960	410x280x330
8010070820	25×16	2	18	15	38.5	600	410x280x330
8010070821	25×20	2	18	16	39.5	480	410x280x330
8010070822	32×16	2	20	15	44	300	410x280x330
8010070823	32×20	2	20	16	42.5	420	410x280x330
8010070824	32×25	2	20	18	45	300	410x280x330
8010070825	40×20	2.5	22.5	16	46	252	410x280x330
8010070826	40×25	2	22.5	18	48.5	252	410x280x330
8010070827	40×32	3	22.5	20	50.5	210	410x280x330
8010070828	50×20	1.5	25.5	16	51.5	120	410x280x330
8010070829	50×25	2	25.5	18	52.5	120	410x280x330
8010070830	50×32	2.5	25.5	20	57	120	410x280x330
8010070831	50×40	1.6	25.5	22.5	57.5	120	410x280x330
8010070832	63×25	3	29.5	18	53	120	410x280x330
8010070833	63×32	2	29.5	20	56	100	410x280x330
8010070834	63×40	2	29.5	22.5	57.5	100	410x280x330
8010070835	63×50	2	29.5	25.5	60	150	560x420x330
8010070836	75×32	3	31.5	20	60.5	140	560x420x330
8010070837	75×40	3	31.5	22.5	63	140	560x420x330
8010070838	75×50	3	31.5	25.5	66	140	560x420x330
8010070839	75×63	3	31.5	29.5	68	90	560x420x330
8010070840	90×40	3	37.5	22.5	73	80	560x420x330
8010070841	90×50	2	37.5	25.5	73	80	560x420x330
8010070842	90×63	2.5	37.5	29.5	78	80	560x420x330
8010070843	90×75	2.5	37.5	31.5	80.5	50	560x420x330
8010070814	110×50	3	42	25.5	82.5	50	560x420x330
8010070815	110×63	4	42	29.5	85	45	560x420x330
8010070816	110×75	4	42	31.5	88	50	560x420x330
8010070817	110×90	5.5	42	37.5	94.5	36	560x420x330
8010070818	160×110	3	58.5	42	127	10	560x420x330

Reducing Coupling (Soc×Spig)



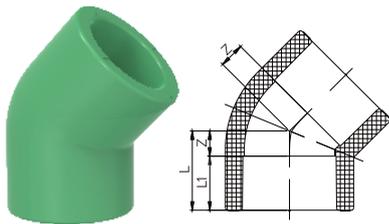
SAP Number	Size (mm)	L	L1	L2	D	d	PCS /CTN	Carton Size (mm×mm×mm)
	25×20	42	22	18	33.8	20.1		
	32×20	46	23.5	20	42.7	20.1		
	40×20	50	25	22.5	53.2	20.1		
	40×25	52	27	22.5	53.2	25.1		
	40×32	58	26	22.5	53.2	32.1		
	50×32	60	29	25.5	66.6	32.1		
	50×40	62	30	25.5	66.6	40.1		

22.5° Elbow (Soc×Soc)



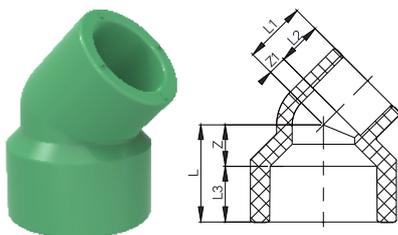
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8010072172	20	4	16	20		
8010073791	25	4	18	22		
8010073792	32	5.5	20	25.5		
8010072173	40	6	22.5	28.5		
8010072174	50	7.5	25.5	33	75	410x280x330
8010072175	63	8.5	29.5	38	40	410x280x330
8010072176	75	9.5	31.5	41	25	410x280x330
8010072177	90	11.5	37.5	49	32	560x420x330
8010072178	110	14.5	42	56.5		
8010072179	160	19.5	58.5	78		

45° Elbow (Soc×Soc)



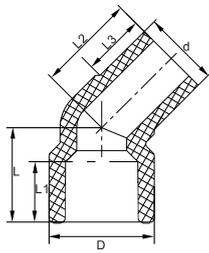
SAP Number	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070024	16	4	15	19	1000	410x280x330
8010070026	20	6.3	16	22.3	600	410x280x330
8010070027	25	7	18	25	360	410x280x330
8010070028	32	10	20	30	180	410x280x330
8010070029	40	10.5	22.5	33	112	410x280x330
8010070030	50	12	25.5	37.5	140	560x420x330
8010070031	63	14	29.5	43.5	80	560x420x330
8010070032	75	16.5	31.5	48	50	560x420x330
8010070033	90	21.5	37.5	59	30	560x420x330
8010070023	110	25.5	42	67.5	20	560x420x330
8010070025	160	49.5	58.5	108	5	560x420x330

45° Reducing Elbow (Soc×Soc)



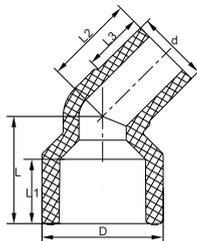
SAP Number	Size (mm)	L	L1	L2	L3	Z	Z1	PCS /CTN	Carton Size (mm×mm×mm)
8010072180	25×20	28	22	16	18	10	6	400	410x280x330
8010072181	32×20	33	22	16	20	13	6	280	410x280x330
8010072182	32×25	32	25	18	20	12	7	280	410x280x330
8010072183	40×20	40	22	16	22.5	17.5	6	180	410x280x330
8010072184	40×25	38	25	18	22.5	15.5	7	168	410x280x330
8010072185	40×32	37	28.5	20	22.5	14.5	8.5		
8010072248	50×20	48.5	22	16	25.5	23	6		
8010073793	50×25	46	25	18	25.5	20.5	7		
8010072186	50×32	44.5	28.5	20	25.5	19	8.5	100	410x280x330
8010072187	50×40	42.5	33	22.5	25.5	17	10.5	80	410x280x330
8010072188	63×25	60	25	18	29.5	30.5	7		
8010072189	63×32	55	28.5	20	29.5	25.5	8.5		
8010072190	63×40	53	33	22.5	29.5	23.5	10.5		
8010072191	63×50	50	38	25.5	29.5	20.5	12.5		

45° Elbow (Soc×Spig)



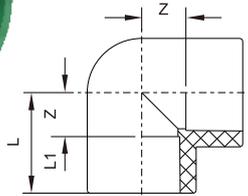
SAP Number	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
	20	25	16	26	16.5	27.8	20.1		
	25	30	18	28	18.5	33.8	25.1		
	32	35	20	33	20.5	42.7	32.1		

45° Reducing Elbow (Soc×Spig)



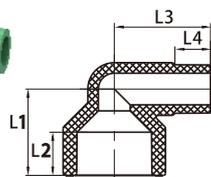
SAP Number	Size (mm)	L	L1	L2	L3	D	d	PCS /CTN	Carton Size (mm×mm×mm)
	25×20	30	18	25	16.5	33.8	20.1		
	32×20	35	20	27	16.5	42.7	20.1		
	32×25	35	20	29	18.5	42.7	25.1		
	40×20	45	22.5	26	16.5	53.2	20.1		
	40×25	42	22.5	30	18.5	53.2	25.1		
	50×20	55	25.5	27	16.5	66.6	20.1		
	50×32	50	25.5	35	20.5	66.6	32.1		
	75×63	67	31.5	50	30	98	63.1		

90° Elbow (Soc×Soc)



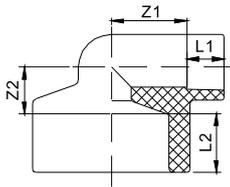
SAP Number	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070057	16	8	15	23	1000	410x280x330
8010070059	20	11	16	27	480	410x280x330
8010070060	25	13.5	18	31.5	360	410x280x330
8010070061	32	17.5	20	37.5	192	410x280x330
8010070062	40	21	22.5	43.5	96	410x280x330
8010070063	50	26.5	25.5	52	120	560x420x330
8010070064	63	32.5	29.5	62	70	560x420x330
8010070065	75	37.5	31.5	69	40	560x420x330
8010070066	90	44.5	37.5	82	25	560x420x330
8010070056	110	55	42	97	15	560x420x330
8010070058	160	92.5	58.5	151	4	560x420x330

90° Reducing Elbow (Soc×Spig)



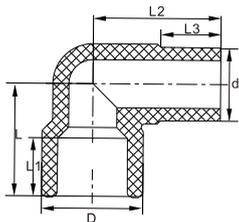
SAP Number	Size (mm)	L1	L2	L3	L4	PCS /CTN	Carton Size (mm×mm×mm)
	32×20						
	32×25						
	40×20	45	22.5	45	16.5		
	40×25	45	22.5	50	18.5		
	50×20	55	25.5	50	16.5		
	50×32						
	50×40						

90° Reducing Elbow (Soc×Soc)



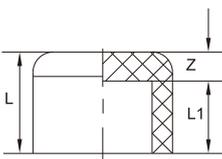
SAP Number	Size (mm)	L1	L2	Z1	Z2	PCS /CTN	Carton Size (mm×mm×mm)
8010070213	25×20	16	18	14	14	360	410x280x330
8010070214	32×20	16	20	19	15	210	410x280x330
8010070215	32×25	18	20	19	17	200	410x280x330
8010070216	40×20	16	22.5	24	17.5	175	410x280x330
8010070217	40×25	18	22.5	25	19.5	120	410x280x330
8010070218	40×32	20	22.5	25	21.5	100	410x280x330
8010070219	50×20	16	25	32	20	96	410x280x330
8010070220	50×25	18	25.5	32	21.5	96	410x280x330
8010070221	50×32	20	25.5	32	26.5	80	410x280x330
8010070222	50×40	22.5	25.5	31.5	26.5	120	410x280x330
8010072192	63×25	18	29.5	27	35.5	130	410x280x330
8010072193	63×32	20	29.5	25	35.5	130	410x280x330
8010072194	63×40	22.5	29.5	27.5	35.5	100	410x280x330
8010072195	63×50	25.5	29.5	29.5	35.5	80	410x280x330

Reducing Coupling (Soc×Spig)



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

Cap (Soc)



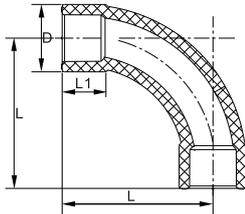
SAP Number	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070318	16	3	15	18	1800	410x280x330
8010070320	20	4.5	16	20.5	1290	410x280x330
8010070321	25	4.5	18	22.5	900	410x280x330
8010070322	32	6.5	20	26.5	420	410x280x330
8010070323	40	8	22.5	30.5	306	410x280x330
8010070324	50	9.5	25.5	35	180	410x280x330
8010070325	63	12	29.5	41.5	180	560x420x330
8010070326	75	13	31	44	140	560x420x330
8010070327	90	15.5	35.5	51	80	560x420x330
8010070317	110	18	42	60	40	560x420x330
8010070319	160	48.5	58.5	107	14	560x420x330

Rubber Gasket



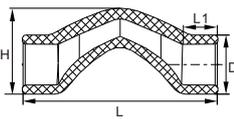
SAP Number	Size (mm)	PCS /CTN	Carton Size (mm×mm×mm)
8010070749	40		
8010070750	50		
8010070751	63		
8010070752	75		
8010070753	90		
8010070747	110		
8010070748	160		

90° Long Sweep bend (Soc×Soc)



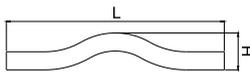
SAP Number	Size (mm)	L	L1	D	PCS /CTN	Carton Size (mm×mm×mm)
8010073773	20	62	18	27	240	410x280x330
8010073774	25	68	21	33.8	180	410x280x330
8010073775	32	75	24.5	42.7	100	410x280x330

Bending pipe II (Soc×Soc)



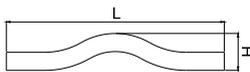
SAP Number	Size (mm)	L	L1	D	H	PCS /CTN	Carton Size (mm×mm×mm)
8010073003	20	91	15.9	27.8	40.4	250	410x280x330
8010073004	25	115	17.5	33.8	49.9	120	410x280x330
8010073015	32	135	20.5	42.7	63.3	80	410x280x330

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



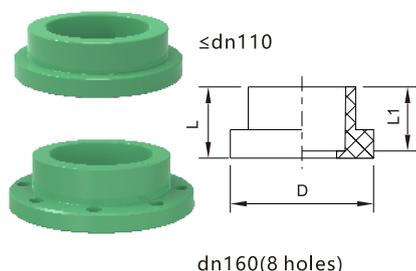
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070466	20	300	47	320	560x420x330
8010070967	25	300	51	250	560x420x330
8010073794	32	300	67	150	560x420x330

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



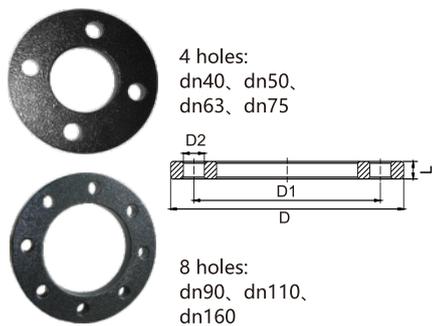
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070473	20	300	47	320	560x420x330
8010070474	25	300	51	250	560x420x330
8010070475	32	300	67	150	560x420x330

Stub Flange (Soc×Flange)



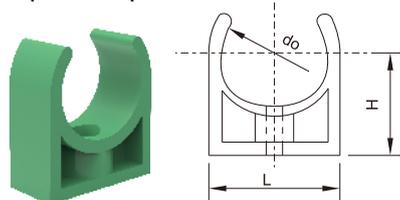
SAP Number	Size (mm)	D	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070255	40	72	26	22.5	160	410x280x330
8010070256	50	85	29	25.5	90	410x280x330
8010070257	63	106	34.5	29.5	60	410x280x330
8010070258	75	129	37	31.5	50	410x280x330
8010070259	90	144	40	34.5	30	410x280x330
8010070253	110	164	50	42	20	410x280x330
8010070254	160	285	85	57.5	10	560x420x330

Flange (Steel Tray)



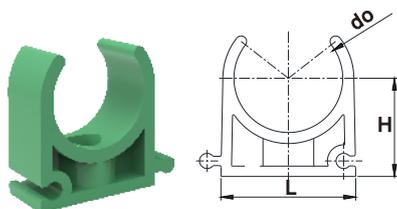
SAP Number	Size (mm)	D	D1	D2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070234	40	140	100	18	10		
8010070235	50	150	110	18	10		
8010070236	63	160	125	18	12		
8010070237	75	185	145	18	15		
8010070238	90	200	160	18	15		
8010070232	110	220	180	18	15		
8010070233	160	285	240	22	18		

Pipe Clamp



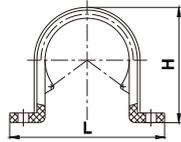
SAP Number	Size (mm)	L	do	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070290	20	27.5	19	22	1080	410x280x330
8010070291	25	32	24.6	24.5	1050	410x280x330
8010070292	32	39	31.5	28.5	840	410x280x330
8010070293	40	47.5	38.5	32	480	410x280x330
8010070294	50	57.5	48.5	37	360	410x280x330

Assembling Clamp



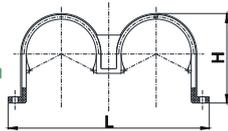
SAP Number	Size (mm)	do	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	16	15	21.5	15		
	20	19	27.4	22	1200	410x280x330
	25	24.6	32	24.5	960	410x280x330
	32	31.5	39	28.5	750	410x280x330

U Clamp



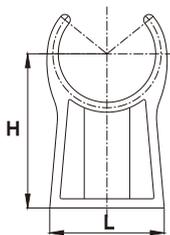
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072338	20	44	28.5	2400	410x280x330
8010072339	25	50.5	34.8		
8010072340	32	57	42.5	1350	410x280x330
8010072341	40	68	52.5		
8010072342	50	78	64	720	410x280x330

Double U Clamp



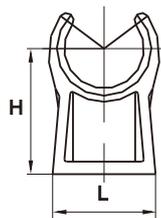
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	20	72.5	28.5		
	25	85	34.8		
	32	100.5	42.5		
	40	122	52.5		
	50	147.5	64		
	63	178	79.5		

Clamp (Tall-style)



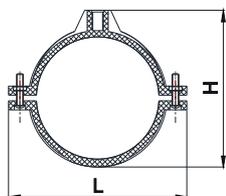
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072169	20	24.5	40		
8010072170	25	30.5	45	540	410x280x330
8010072171	32	37	50		
8010072202	40	46	60		
8010072203	50	60	70		

Clamp (Moderate-style)



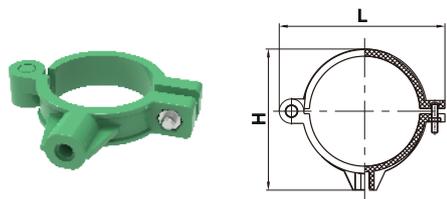
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	20	24.5	30	1080	410x280x330
	25	30.5	35	840	410x280x330
	32	37	40		
	40	46	45		
	50	60	55		

Pipe Clamp I (without Screw)



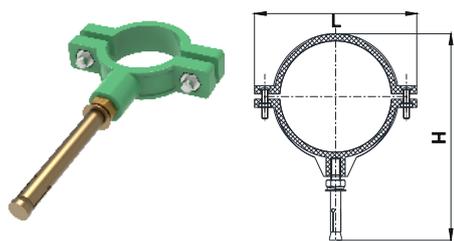
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072052	20	49	42	720	410x280x330
8010072053	25	54	47	720	410x280x330
8010071817	32	64	54	480	410x280x330
2010071818	40	72	62.5	360	410x280x330
8010071819	50	87	73	240	410x280x330
8010071820	63	106	87.5	144	410x280x330
8010072054	75	118.5	101	120	410x280x330
8010072055	90	132	115	120	410x280x330
8010072056	110	157	138.5	70	410x280x330

Pipe Clamp IV (Without Screw)



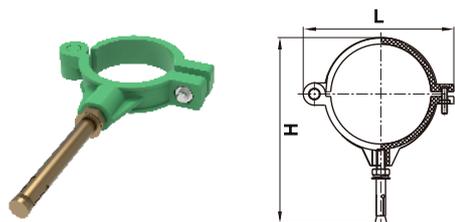
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	40	72.5	62.5	300	410x280x330
	50	88.5	73	216	410x280x330
	63	105	87.5	120	410x280x330
	75	117.5	101.5	96	410x280x330
	110	162	138.5	60	410x280x330

Pipe Clamp I (Screw)



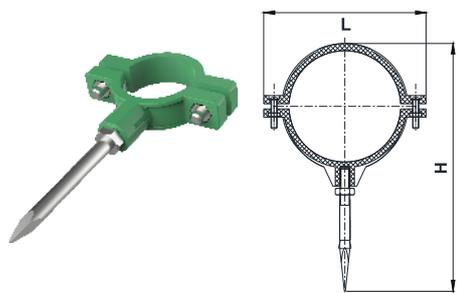
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072204	20	49	96	480	410x280x330
8010072960	25	54	101	450	410x280x330
8010072205	32	64	108	360	410x280x330
8010072206	40	72	116.5	300	410x280x330
8010072207	50	87	127	144	410x280x330
8010072208	63	106	140.5	90	410x280x330
8010072209	75	118.5	154	60	410x280x330
8010072210	90	132	178	90	410x280x330
8010072211	110	157	200.5	60	410x280x330

Pipe Clamp IV (Screw)



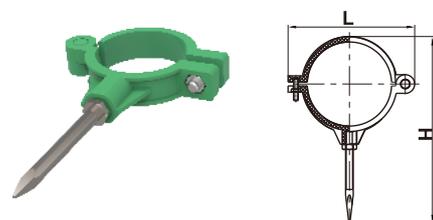
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010073010	40	72.5	116.5	240	410x280x330
8010073011	50	88.5	127	126	410x280x330
8010073012	63	105	140.5	84	410x280x330
	75	117.5	154	72	410x280x330
	110	162	200.5		

Pipe Clamp I (Tusk Screw)



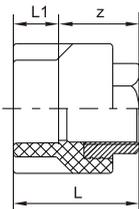
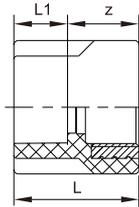
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071831	20	49	96	480	410x280x330
8010072266	25	54	101	450	410x280x330
8010072566	32	64	108	360	410x280x330
8010072567	40	72	116.5	300	410x280x330
8010072568	50	87	137	144	410x280x330
8010072569	63	106	150.5	90	410x280x330
8010072570	75	118.5	164	60	410x280x330
8010073787	90	132	218	85	410x280x330
8010073788	110	157	240.5	50	410x280x330

Pipe Clamp IV (Tusk Screw)



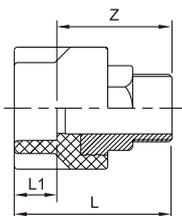
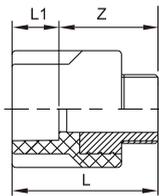
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	40	72.5	116.5		
	50	88.5	137		
	63	105	150.5		
	75	117.5	164		
	110	162	240.5		

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



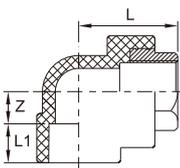
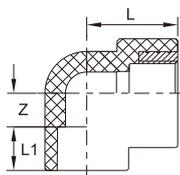
SAP Number	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070580	16×1/2"	24	15	39	360	410x280x330
8010070581	20×1/2"	26.5	16	42.5	288	410x280x330
8010070582	20×3/4"	26	16	42	240	410x280x330
8010070583	25×1/2"	26.5	18	44.5	300	410x280x330
8010070584	25×3/4"	27	18	45	180	410x280x330
8010070585	32×1/2"	31	20	51	180	410x280x330
8010070586	32×3/4"	27.5	20	47.5	210	410x280x330
8010070607	20×1/2"	34	16	50	240	410x280x330
8010070608	20×3/4"	38.5	16	54.5	192	410x280x330
8010070609	25×3/4"	39.5	18	57.5	180	410x280x330
8010070610	32×1"	38	20	58	96	410x280x330
8010070611	40×1"	37	22	59	84	410x280x330
8010070612	40×1 1/4"	43	22.5	65.5	48	410x280x330
8010070614	50×1 1/4"	41.5	25.5	67	48	410x280x330
8010070613	50×1 1/2"	42.5	25.5	68	36	410x280x330
8010070615	63×2"	46.5	29.5	76	36	410x280x330
8010070616	75×2"	47	31.5	78.5	36	410x280x330

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



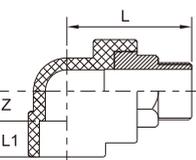
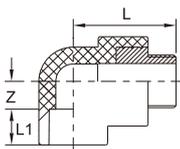
SAP Number	Size (mm)	Z	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070720	16×1/2"	38	15	53	240	410x280x330
8010070721	20×1/2"	38	16	54	240	410x280x330
8010070722	20×3/4"	38	16	54	180	410x280x330
8010070723	25×1/2"	38	18	56	210	410x280x330
8010070724	25×3/4"	38.5	18	56.5	180	410x280x330
8010070725	32×1/2"	45	20	65	180	410x280x330
8010070726	32×3/4"	51.5	20	71.5	180	410x280x330
8010070741	32×1"	57	20	77	72	410x280x330
8010070742	40×1"	56	22	78	72	410x280x330
8010070743	40×1 1/4"	64	22.5	86.5	48	410x280x330
8010070745	50×1 1/4"	62.5	25.5	88	48	410x280x330
8010070744	50×1 1/2"	63.5	25.5	89	36	410x280x330
8010070746	63×2"	71.5	29.5	101	36	410x280x330
8010072254	75×2"	75.5	31.5	107	24	410x280x330

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



SAP Number	Size (mm)	Z	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070541	16×1/2"	11	35.5	15		
8010070542	20×1/2"	11.5	37.5	16	240	410x280x330
8010070543	20×3/4"	13.1	38.5	16	210	410x280x330
8010070544	25×1/2"	12	40.5	18	210	410x280x330
8010070545	25×3/4"	13	41	18	180	410x280x330
8010070546	32×1/2"	15	42	20	180	410x280x330
8010070547	32×3/4"	18	42	20	150	410x280x330
8010070552	20×1/2"	13	44	16	240	410x280x330
8010070553	32×1"	16.5	54.5	20	72	410x280x330
8010071288	40×1 1/4"	28.5	65	22.5	36	410x280x330
8010071230	50×1 1/2"	32	70	25.5	36	410x280x330
8010072075	63×2"	38	82	29.5	18	410x280x330
8010073795	75×2-1/2"	41	77.5	33.5	15	410x280x330

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



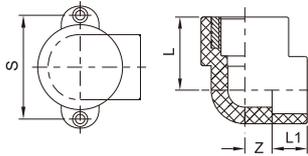
SAP Number	Size (mm)	Z	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070683	16×1/2"	11	49.5	15	240	410x280x330
8010070684	20×1/2"	11.5	49	16	240	410x280x330
8010070685	20×3/4"	13.1	50	16	150	410x280x330
8010070686	25×1/2"	12	52	18	210	410x280x330
8010070687	25×3/4"	17	52.5	18	150	410x280x330
8010070688	32×1/2"	15	56	20	150	410x280x330
8010070689	32×3/4"	18	56	20	120	410x280x330
8010070692	32×1"	21	73.5	20	72	410x280x330
8010071286	40×1 1/4"	28.5	86	22.5	36	410x280x330
8010072076	50×1 1/2"	32	91	25.5	24	410x280x330
8010071874	63×2"	33.5	107	29.5	18	410x280x330
8010072196	75×2 1/2"	41	124.5	31.5	6	410x280x330

Pipe Cover



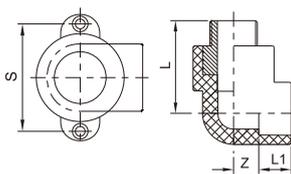
SAP Number	Size (mm)	PCS /CTN	Carton Size (mm×mm×mm)
	16		
8010071231	20		
8010071232	25		
8010071233	32		
	40		
	50		
	63		
	75		
	90		
	110		
	160		

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



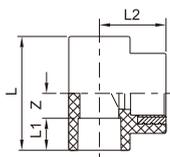
SAP Number	Size (mm)	L	S	L1	Z	PCS /CTN	Carton Size (mm×mm×mm)
8010070562	20×1/2"	38	49.5	16	11.5	168	410x280x330
8010070563	20×3/4"	38.5	53.5	16	13.5	180	410x280x330
8010070564	25×1/2"	39.5	49.5	18	12	180	410x280x330
8010070565	25×3/4"	37.5	53.5	18	13	120	410x280x330

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

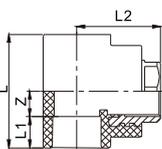


SAP Number	Size (mm)	L	S	L1	Z	PCS /CTN	Carton Size (mm×mm×mm)
8010070701	20×1/2"	47.5	49.5	16	11.5	180	410x280x330
8010070702	20×3/4"	48	49.5	16	13.1	150	410x280x330
8010070703	25×1/2"	50	49.5	18	12	180	410x280x330
8010070704	25×3/4"	50.5	53.5	18	13	120	410x280x330

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

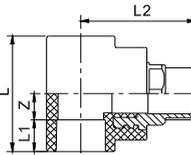
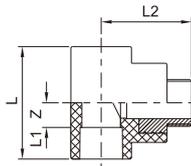


SAP Number	Size (mm)	Z	L2	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070515	20×1/2"	11.5	38	16	55	192	410x280x330
8010070516	20×3/4"	13.5	38.5	16	59	168	410x280x330
8010070517	25×1/2"	12	41	18	60	150	410x280x330
8010070518	25×3/4"	13.5	40.5	18	63	120	410x280x330
8010070519	32×1/2"	11.8	41.5	20	63.5	120	410x280x330
8010070520	32×3/4"	14.5	42	20	69	108	410x280x330



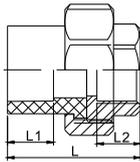
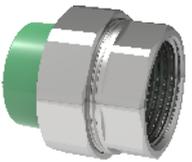
8010070525	20×1/2"	13	44	16	58	180	410x280x330
8010070526	32×1"	16.5	53.5	20	73	60	410x280x330
8010071289	40×1 1/4"	28.5	65	22.5	102	36	410x280x330
8010072197	50×1 1/2"	32	70	25.5	115	24	410x280x330
8010073713	63×2"	38	82	29.5	135	12	410x280x330
8010073714	75×2 1/2"	46	96	31.5	155	12	410x280x330

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



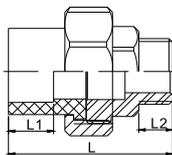
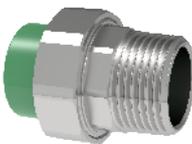
SAP Number	Size (mm)	Z	L2	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070660	20×1/2"	11.5	49.5	16	55	180	410x280x330
8010070661	20×3/4"	13.5	50	16	59	150	410x280x330
8010070662	25×1/2"	12	52.5	18	60	150	410x280x330
8010070663	25×3/4"	13.5	52.5	18	63	120	410x280x330
8010070664	32×1/2"	11.8	56	20	63.5	120	410x280x330
8010070665	32×3/4"	14.5	56	20	69	90	410x280x330
	40×3/4"	15	60	22.5	75		
8010072198	25×1"	22	71.5	18	80		
8010070668	32×1"	16.5	72.5	20	73	60	410x280x330
8010072199	40×1"	21.5	79	22.5	88		
8010071287	40×1 1/4"	28.5	86	22.5	102	24	410x280x330
8010072077	50×1"	19.5	86	25.5	90	24	410x280x330
	50×1 1/4"	27	90	25.5	105		
8010071875	50×1 1/2"	32	91	25.5	115	18	410x280x330
8010072200	63×2"	33.5	107	29.5	126	12	410x280x330
8010072201	75×2 1/2"	41	124.5	31.5	145		

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



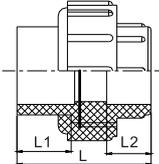
SAP Number	Size (mm)	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070498	20×1/2"	16	16	42	300	410x280x330
8010070500	25×3/4"	18	17	47	180	410x280x330
8010070499	25×1"	18	18	56.5	180	410x280x330
8010070502	32×3/4"	20.5	15	56	120	410x280x330
8010070501	32×1"	20.5	18	52	120	410x280x330
8010072165	40×1 1/4"	22.5	25	51.5	36	410x280x330
8010072309	50×1-1/2"	21.5	26	65.5	48	410x280x330
8010072310	63×2"	24	28	74	24	410x280x330

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



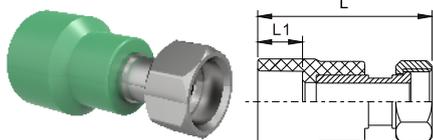
SAP Number	Size (mm)	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070639	20×1/2"	16	14	55	300	410x280x330
8010070641	25×3/4"	18	13.5	60	180	410x280x330
8010070640	25×1"	18	19	45.5	180	410x280x330
8010070643	32×3/4"	20.5	15	42	120	410x280x330
8010070642	32×1"	20.5	19	71	108	410x280x330
8010072166	40×1 1/4"	22.5	19.5	66.5	36	410x280x330
8010072167	50×1-1/2"	21.5	21	71.5	36	410x280x330
8010072168	63×2"	24	24	99	24	410x280x330

Union II (Soc×Soc)



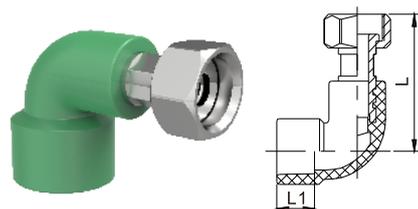
SAP Number	Size (mm)	L1	L2	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070436	20	16	16	45	240	410x280x330
8010070437	25	18	17	48	200	410x280x330
8010070438	32	20.5	18	58	108	410x280x330
8010072953	40	19.3	22.5	71.5	48	410x280x330

**Flexible Joint I
(Soc×Fipt with Metal)**



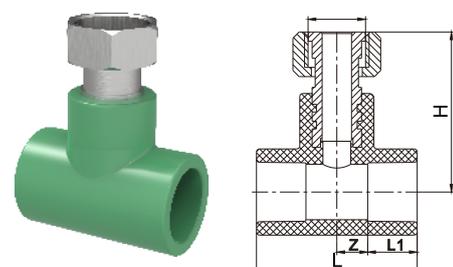
SAP Number	Size (mm)	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070425	20×1/2"	59	16	300	410x280x330
8010070426	20×3/4"	59.5	16	240	410x280x330
8010070427	25×1/2"	61	18	240	410x280x330
8010070428	25×3/4"	62	18	240	410x280x330
8010072221	32×1/2"	63	20		
8010072222	32×3/4"	64	20		
8010070429	32×1"	68.5	20	150	410x280x330
8010072223	40×3/4"	66.5	22.5		
8010072224	40×1"	71	22.5		
8010072225	40×1 1/4"	76	22.5	72	410x280x330
8010072227	50×1"	76.5	25.5		
8010072226	50×1 1/4"	81.5	25.5	60	410x280x330
8010072228	50×1 1/2"	89.5	22.5		

**Flexible Joint Elbow
(Soc×Fipt with Metal)**



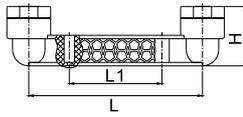
SAP Number	Size (mm)	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070441	20×1/2"	50	16	300	410x280x330
8010072229	20×3/4"	58.5	16	240	410x280x330
8010073626	25×1/2"	50.5	18	240	410x280x330
8010072230	25×3/4"	54.5	18	210	410x280x330
8010072231	32×1/2"	50.5	18	180	410x280x330
8010072232	32×3/4"	54	20	150	410x280x330
8010073631	32×1"	61.5	20	90	410x280x330
8010072233	40×3/4"	53.5	22.5		
8010072234	40×1"	61.5	22.5		
8010072235	40×1 1/4"	71.5	22.5	60	410x280x330
8010072237	50×1"	60.5	25.5		
8010072236	50×1 1/4"	71.5	25.5		
8010072238	50×1 1/2"	86.5	25.5	36	410x280x330

Flexible Tee (Soc×Soc)



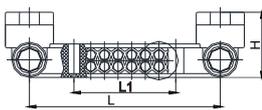
SAP Number	Size (mm)	L1	L	Z	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072239	20×1/2"	16	52	10	52	180	410x280x330
8010072240	20×3/4"	16	57	12.5	52.5		
8010072241	25×1/2"	18	56	10	54	150	410x280x330
8010072242	25×3/4"	18	61	12.5	54.5	120	410x280x330
8010072245	32×1/2"	20	60	10	57.1	120	410x280x330
8010072244	32×3/4"	20	66	13	58.6	96	410x280x330
8010072243	32×1"	20.5	72	15.5	63	90	410x280x330
	40×3/4"	22.5	72	13.5	63		
8010072247	40×1"	22.5	77	16	67.5	60	410x280x330
8010072246	40×1 1/4"	22.5	83	22.5	74.5	48	410x280x330
	50×1"	25.5	84	16.5	73		

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



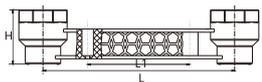
SAP Number	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070628	20×1/2"	80	150	51.5	48	410x280x330
8010071240	25×1/2"	80	150	56.9	48	410x280x330
8010072218	25×3/4"	80	150	57.9	36	410x280x330
8010072219	32×1/2"	80	150	63.4	36	410x280x330
8010072220	32×3/4"	75	150	63.4	24	410x280x330

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



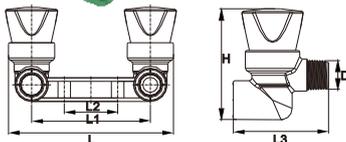
SAP Number	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071806	20×1/2"	80	150	51.4	48	410x280x330
	25×1/2"	80	150	56.9	36	410x280x330
8010072212	32×1/2"	80	150	62.7	24	410x280x330
8010072213	32×3/4"	75	150	63.4	24	410x280x330

Double Female Thread Coupling With Seat (Soc x Fipt with Metal Insert)



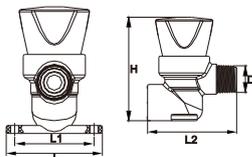
SAP Number	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	20×1/2"	80	150	42.5		

Double Angle valve with Seat



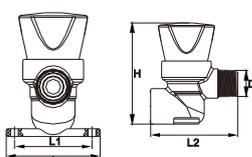
SAP Number	Size (mm)	L	L1	L2	L3	H	D	PCS /CTN	Carton Size (mm×mm×mm)
	20×1/2"	138.8	100	45	68	81.5	R1/2"		

Angle valve with seat (Single Cooling)



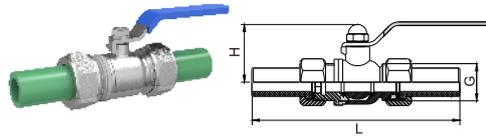
SAP Number	Size (mm)	L	L1	L2	H	D	PCS /CTN	Carton Size (mm×mm×mm)
	20×1/2"	60	49.5	68	81.5	R1/2"		

Angle valve with seat (Single Heat)



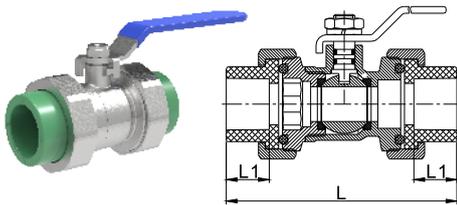
SAP Number	Size (mm)	L	L1	L2	H	D	PCS /CTN	Carton Size (mm×mm×mm)
	20×1/2"	60	49.5	68	81.5	R1/2"		

Ball Valve (Spig×Spig)



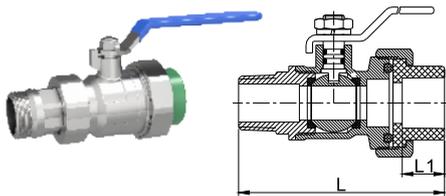
SAP Number	Size (mm)	L	G	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070345	20	142	3/4"	35	96	410x280x330
8010070346	25	153	1"	37	72	410x280x330
8010070347	32	172	1 1/4"	47.5	36	410x280x330

Ture Union Ball Valve (Soc×Soc)



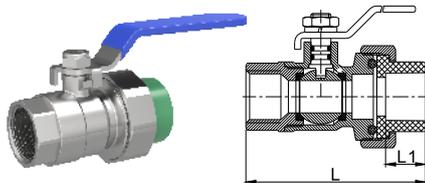
SAP Number	Size (mm)	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070406	20	16	85.8	96	410x280x330
8010070407	25	18	93.8	72	410x280x330
8010070408	32	20	103.2	36	410x280x330
8010071665	40	22.5	120	24	410x280x330
8010071666	50	25.5	133.5	12	410x280x330
8010071667	63	29.5	152.5	6	410x280x330

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



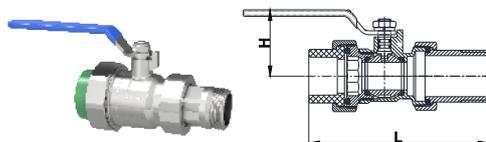
SAP Number	Size (mm)	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070369	20×1/2"	16	77.9	120	410x280x330
8010070370	25×3/4"	18	83.9	96	410x280x330
8010070371	32×1"	20	95.7	48	410x280x330
8010070360	40×1 1/4"	22.5	111.5	30	410x280x330
8010070361	50×1 1/2"	25.5	121	24	410x280x330
8010070362	63×2"	29.5	138.3	12	410x280x330

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



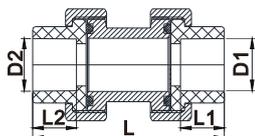
SAP Number	Size (mm)	L1	L	PCS /CTN	Carton Size (mm×mm×mm)
8010070393	20×1/2"	16	71.9	120	410x280x330
8010070394	25×3/4"	18	75.4	72	410x280x330
8010070395	32×1"	20	85.7	48	410x280x330
8010070384	40×1 1/4"	22.5	103.5	24	410x280x330
8010070385	50×1 1/2"	25.5	114	18	410x280x330
8010070386	63×2"	29.5	128.3	12	410x280x330

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



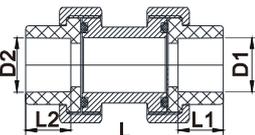
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010073806	25×1"	113.4	42		
8010073807	32×1"	122	54.8		
8010073808	40×1 1/4"	202.9	64.3		

PP-R/PE-RT Change Union (Soc×Soc)



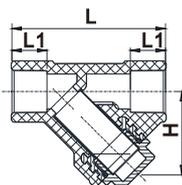
SAP Number	Size (mm)	L	L1	L2	D1	D2	PCS /CTN	Carton Size (mm×mm×mm)
8050040540	20	68.2	16	16	20	20		
8050040542	25	74	18	18	25	25		
8050040544	32	82	20	20	32	32		

PP-R/PE Change Union (Soc×Soc)



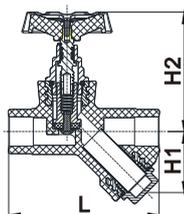
SAP Number	Size (mm)	L	L1	L2	D1	D2	PCS /CTN	Carton Size (mm×mm×mm)
8050040545	20	68.2	16	16	20	20		
8050040546	25	74	18	18	25	25		
8050040547	32	82	20	20	32	32		

Filter (Soc×Soc×Fipt)



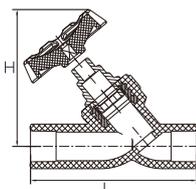
SAP Number	Size (mm)	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	20(2.0MPa)	16	70	38.1	144	410x280x330

Y-style Stop Valve (Soc×Soc×Fipt)



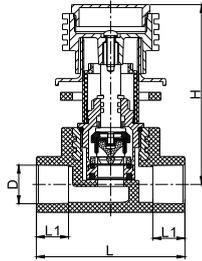
SAP Number	Size (mm)	L	H1	H2	PCS /CTN	Carton Size (mm×mm×mm)
	20(1.6MPa)	98	39.9	78.1	48	410x280x330

Fullbore stop valve



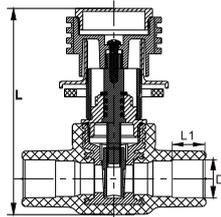
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	20	104	86		
	25	114	95		
	32	130	107		

Concealed Valve (Soc×Soc)



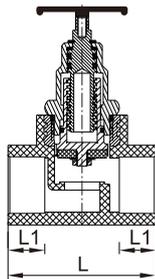
SAP Number	Size (mm)	D	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010070225	20	20	16	74	90	72	410x280x330
8010070226	25	24.2	18	80	91.5	60	410x280x330
8010070227	32						

Luxury stype concealed valve (Soc × Soc)



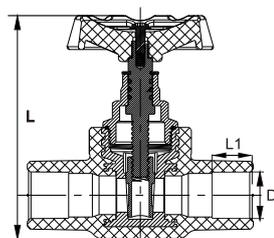
SAP Number	Size (mm)	L	L1	D	PCS /CTN	Carton Size (mm×mm×mm)
8010070225	20	104.7	16.5	19.3		
8010070226	25	112	18.5	24.2		

Stop Valve (Soc×Soc)



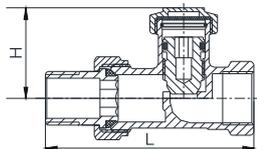
SAP Number	Size (mm)	L	L1	PCS /CTN	Carton Size (mm×mm×mm)
8010070454	20	64	16	72	410x280x330
8010070455	25	74	18	60	410x280x330
8010070456	32	82	20.5	36	410x280x330
8010070457	40	85	22	36	410x280x330
8010070458	50	115	25	30	410x280x330
8010070459	63	121	29	20	410x280x330
8010072950	75 (S4)	129	31.5	12	410x280x330
8010072344	90 (S4)	184.5	37.5		
8010072951	110 (S4)	194	42	5	410x280x330

Concealed valve (Soc×Soc)



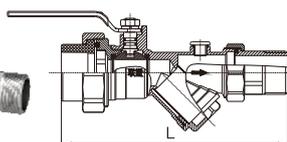
SAP Number	Size (mm)	L	L1	D	PCS /CTN	Carton Size (mm×mm×mm)
	20	92.4	16.5	19.3		
	25	92.4	18.5	24.2		

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



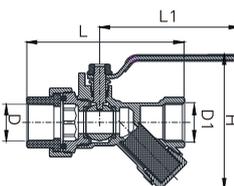
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071147	1/2"	80.5	25		
8010071148	3/4"	83.7	35.5		

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



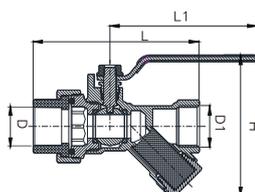
SAP Number (white)	Size (mm)	L	PCS /CTN	Carton Size (mm×mm×mm)
8010073809	25×1"	169.5		
8010073776	32×1"	171	30	410x280x330
8010073810	40×1-1/4"	205		

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



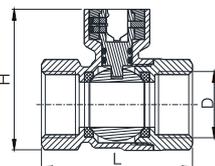
SAP Number	Size (mm)	D	D1	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010073777	25×3/4"	25	3/4"	93	105	89.7	60	410x280x330
8010073778	32×1"	32	1"	93	128	99.2	36	410x280x330

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



SAP Number	Size (mm)	D	D1	L1	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010073804	25×3/4"	25	3/4"	93	105	89.7		
8010073805	32×1"	32	1"	93	128	99.2		

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



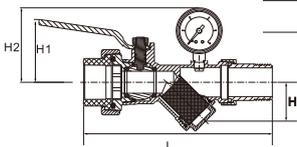
SAP Number	Size (mm)	D	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010071141	20	3/4"	60	67.3		
8010071142	25	1"	60	67.3		

Lock Ball Valve Key



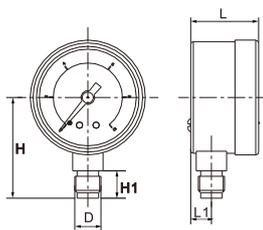
SAP Number	Model	PCS /CTN	Carton Size (mm×mm×mm)
8010071140	F		

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



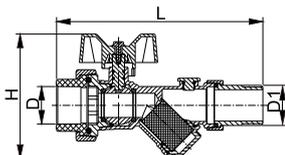
SAP Number	Size (mm)	L	H	H1	H2	PCS /CTN	Carton Size (mm×mm×mm)
8010073009	25×1"	169.5	45	46	56.8	36	410x280x330
	32×1"	170.5	45	59	56.8		

Manomeber



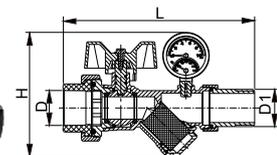
SAP Number	Size (mm)	Dn (mm)	L	L1	H	H1	D	PCS /CTN	Carton Size (mm×mm×mm)
8130054951	G1/8"	40	24.5	7.5	36.5	10	G1/8"	282	410x280x330

Long male thread ball valve with strainer (butterfly handle)



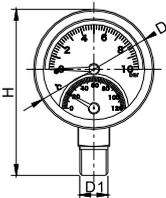
SAP Number	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010073812	25×1"	169	103.2	25	1"		
8010073813	32×1"	170	103.2	32	1"		

Long male thread ball valve with strainer meter (butterfly handle)



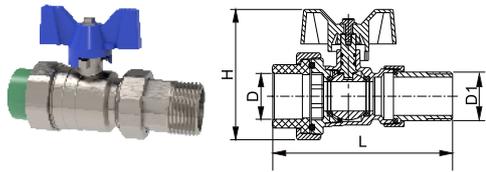
SAP Number	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010073814	25×1"	169	111.7	25	1"		
8010073815	32×1"	170	111.7	32	1"		

Temperature gauge manometer



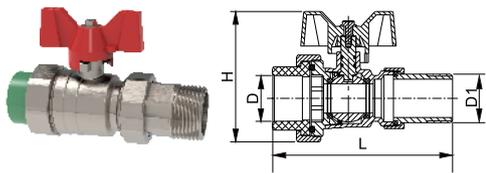
SAP Number	Size (mm)	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8130055612	G1/8"	52	42	G1/8"		

**Long male thread ball valve
(blue butterfly handle)**



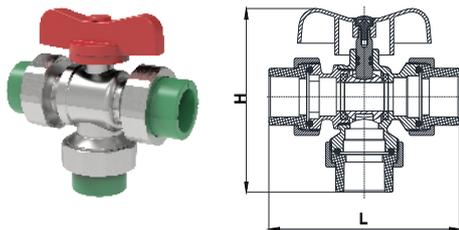
SAP Number	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010073818	25×1"	120.5	82	25	1"		
8010073819	32×1"	121.5	88.5	32	1"		

**Long male thread ball valve
(Red butterfly handle)**



SAP Number	Size (mm)	L	H	D	D1	PCS /CTN	Carton Size (mm×mm×mm)
8010073820	25×1"	120.5	82	25	1"		
8010073821	32×1"	121.5	88.5	32	1"		

Tee Ball Valve (Soc×Soc×Soc)

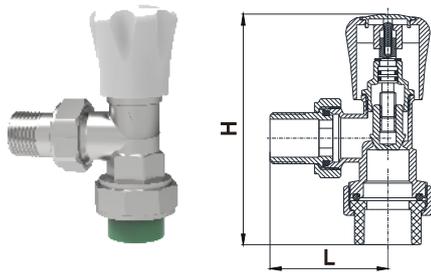


SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010073013	25	113.3	109.5	36	410x280x330

Definitions of abbreviated configuration description follow

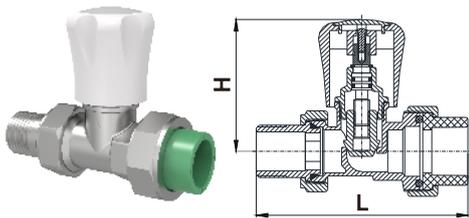
- Soc: Socket
- Fipt: Female Iron Pipe Thread
- Spig: Spigot
- Mipt: Male Iron Pipe Thread

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



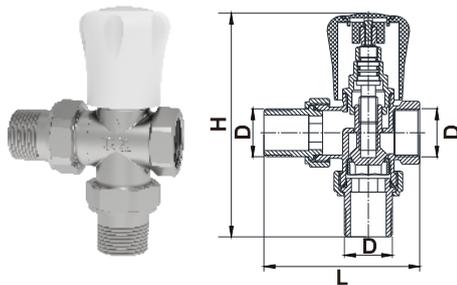
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	25×3/4"	60	118		
	32×1"	75	132		

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



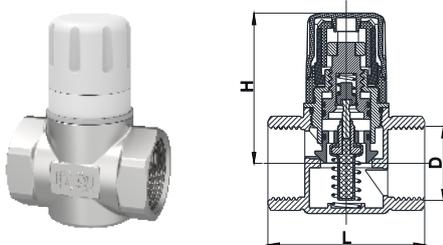
SAP Number	Size (mm)	L	H	PCS /CTN	Carton Size (mm×mm×mm)
8010072343	25×3/4"	105	66		
	32×1"	130	77		

Manual Temperature Control
Tee Ball Valve (Mipt with Metal × Mipt with Metal × Mipt with Metal)



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

The User Control Water Temperature
Control Valve (Fipt with Metal × Fipt with Metal)

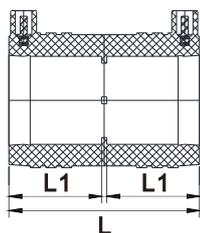


SAP Number	Size (mm)	D	L	H	PCS /CTN	Carton Size (mm×mm×mm)
	25	1"	70	67.3		

Definitions of abbreviated configuration description follow

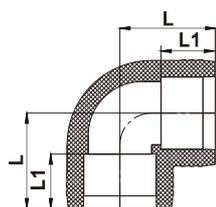
- Soc: Socket
- Fipt: Female Iron Pipe Thread
- Spig: Spigot
- Mipt: Male Iron Pipe Thread

E/F Coupling



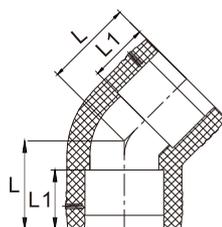
SAP Number	Size (mm)	L1	L	PCS/CTN	Carton Size (mm×mm×mm)
8010071484	50	53.5	110	36	410x280x330
8010071757	63	61.5	126	50	560x420x330
8010071773	75	68.5	140	15	410x280x330
8010072041	90	77.5	158	10	410x280x330
8010071485	110	83.5	170	12	560x420x330
8010072046	160	100.5	204	3	560x420x330

E/F 90° Elbow



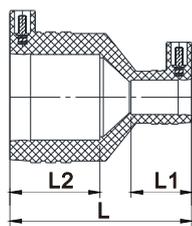
SAP Number	Size (mm)	L1	L	PCS/CTN	Carton Size (mm×mm×mm)
8010071826	75	68.5	113.1	8	410x280x330
8010073605	110	83.5	146.9	6	560x420x330
8010072274	160	100.5	193	1	410x280x330

E/F 45° Elbow



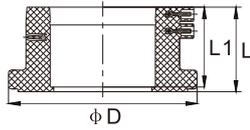
SAP Number	Size (mm)	L1	L	PCS/CTN	Carton Size (mm×mm×mm)
8010071672	40	48	65.4	50	410x280x330
8010072346	75	68.5	98.2	8	410x280x330
8010073606	110	83.5	124.9	6	560x420x330
8010072050	160	100.5	160.7	1	410x280x330

E/F Reducer



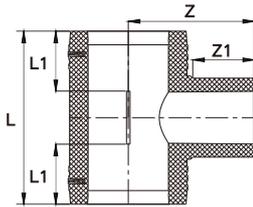
SAP Number	Size (mm)	L1	L	L2	PCS/CTN	Carton Size (mm×mm×mm)
8010071486	40×32	43	107	48	72	410x280x330
8010071673	50×20	36	108	53.5	45	410x280x330
8010072275	50×25	40	112	53.5	36	410x280x330
8010072276	50×32	43	115	53.5	36	410x280x330
8010071774	63×25	40	122	62	28	410x280x330
8010071487	63×32	43	125	62	54	560x420x330
8010071775	63×40	48	130	62	28	410x280x330
8010071827	63×50	53.5	136	62	42	560x420x330
8010071488	75×32	43	134	69	21	410x280x330
8010072153	75×40	48	139	69	15	410x280x330
8010072154	75×50	53.5	145	69	15	410x280x330
8010071776	75×63	62	153	69	14	410x280x330
8010071674	90×63	62	165	78	10	410x280x330
8010072042	110×63	62	174	84	20	560x420x330
8010071490	110×75	69	181	84	12	560x420x330
8010072160	110×90	78	190	84	12	560x420x330
8010073617	160×90	78	223	100	2	410x280x330
8010072047	160×110	84	232	100	2	410x280x330

E/F Stub Flange



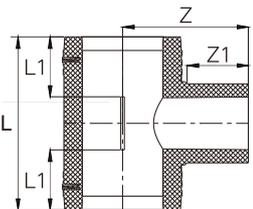
SAP Number	Size (mm)	L1	L	D	PCS/CTN	Carton Size (mm×mm×mm)
8010072557	90	79	87	170	24	560x420x330

E/F Tee



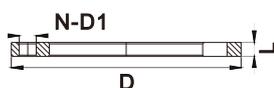
SAP Number	Size (mm)	L1	L	Z1	Z	PCS/CTN	Carton Size (mm×mm×mm)
8010072297	63	61.5	165	63	116	18	560x420x330
8010072260	75	68.5	187	70	133	15	560x420x330
8010071828	90	77.5	215	79	153	4	410x280x330
8010073628	110	83.5	241	85	174.5	5	560x420x330
8010072048	160	100	313	100	237	2	560x420x330

E/F Reducing Tee



SAP Number	Size (mm)	L1	L	Z1	Z	PCS/CTN	Carton Size (mm×mm×mm)
8010071830	40×25	48	113	41	76	60	410x280x330
8010072080	63×25	61.5	140	41	92.5	15	410x280x330
8010072060	75×32	68.5	158	44	104.5	12	410x280x330
8010072061	75×40	68.5	164	49	110	24	560x420x330
8010072573	75×50	68.5	171	55	117	9	410x280x330
8010071758	75×63	68.5	179	63	125	9	410x280x330
8010071777	90×40	77.5	182	49	121	15	560x420x330
8010071778	90×50	77.5	189	55	128	8	410x280x330
8010072081	90×63	77.5	197	63	136	6	410x280x330
8010071829	90×75	77.5	205	70	144	5	410x280x330
8010071759	110×63	83.5	209	63	150.5	4	410x280x330
8010073629	110×90	83.5	227	79	167.5	5	560x420x330
8010071779	160×63	100	242	63	187	3	560x420x330
8010072574	160×75	100	250	70	195	2	560x420x330
8010072558	160×90	100	250	79	204	2	560x420x330
8010072051	160×110	100	274	85	212	2	560x420x330

E/F Flange(Steel Tray)



SAP Number	Size (mm)	N	D1	L	D	PCS/CTN	Carton Size (mm×mm×mm)
8010072559	90	8	18	15	220		

Definitions of abbreviated configuration description follow

E/F: Electro Fusion

Pipe Cutter



SAP Number	Model	Application Range	PCS /CTN	Carton Size (mm×mm×mm)
8050040435		16~32	40	410x280x330

Socket Fusion Welding Machine



SAP Number	Model	Application Range	Carton Size (mm×mm×mm)
8010070922	1000w	20-63	
8010070923	1600w	75-110	
8010070924	2500w	160	

Welding Socket



SAP Number	Model	Application Range	Carton Size (mm×mm×mm)
8010070329		16	
8010070331		20	
8010070332		25	
8010070333		32	
8010070334		40	
8010070335		50	
8010070336		63	
8010070337		75	
8010070338		90	
8010070328		110	
8010070330		160	

Manual Peeling Tool
(Especially for PP-R / Aluminum Composite Pipe)



SAP Number	Model	Application Range	Carton Size (mm×mm×mm)
8010090025		20-25	
8010090024		32-40	

Assistant Tool for Socket Fusion



SAP Number	Model	Application Range	Carton Size (mm×mm×mm)
8010070976		90-160	

Electric Peeling Tool
(Especially for PP-R / Aluminum Composite Pipe)



SAP Number	Model	Application Range	Carton Size (mm×mm×mm)
8010090014		40	
8010090015		50	
8010090007		63	

Blade for Peeling Tool



SAP Number	Model	Application Range	Carton Size (mm×mm×mm)
8010090016		20-63	

LS/75-110S Series plastic-aluminum stable composite pipe's manual peeling tool



Hub



Sleeve



Nicker

SAP Number (Hub)	SAP Number (Sleeve)	SAP Number (Nicker)	Ring Stiffness	Application Range	Carton Size (mm×mm×mm)
8010090033	8010090042	8010090051	S4	75	
8010090030	8010090039	8010090048	S3.2	75	
8010090027	8010090036	8010090045	S2.5	75	
8010090034	8010090043	8010090052	S4	90	
8010090031	8010090040	8010090049	S3.2	90	
8010090028	8010090037	8010090046	S2.5	90	
8010090032	8010090041	8010090050	S4	110	
8010090029	8010090038	8010090047	S3.2	110	
8010090026	8010090035	8010090044	S2.5	110	

■ 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.

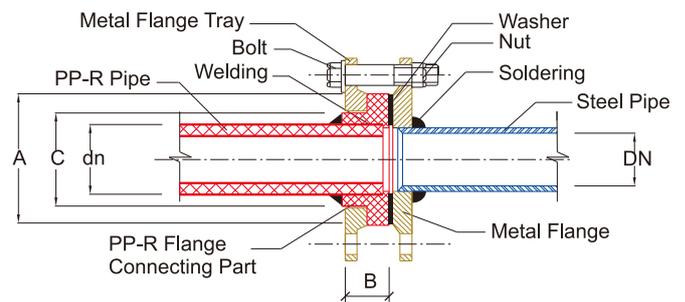
6. Finish the welding.



■ 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	
A	78	87	100	122	140	166	
B	27	30	34	38	42	50	
C	50	60	75	99.5	119.4	146.0	



■ 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

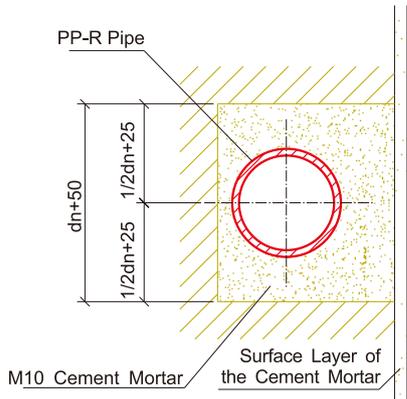
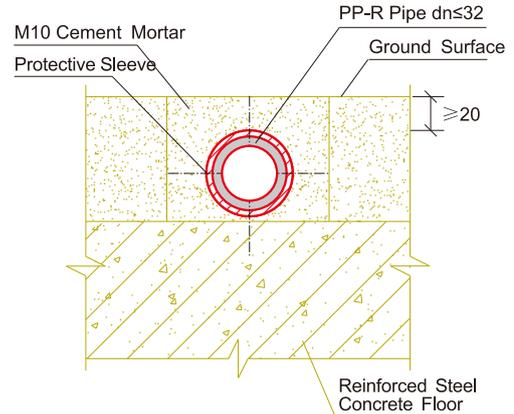


Fig. 2 Bury pipe in layer of backfilled groove Unit: mm



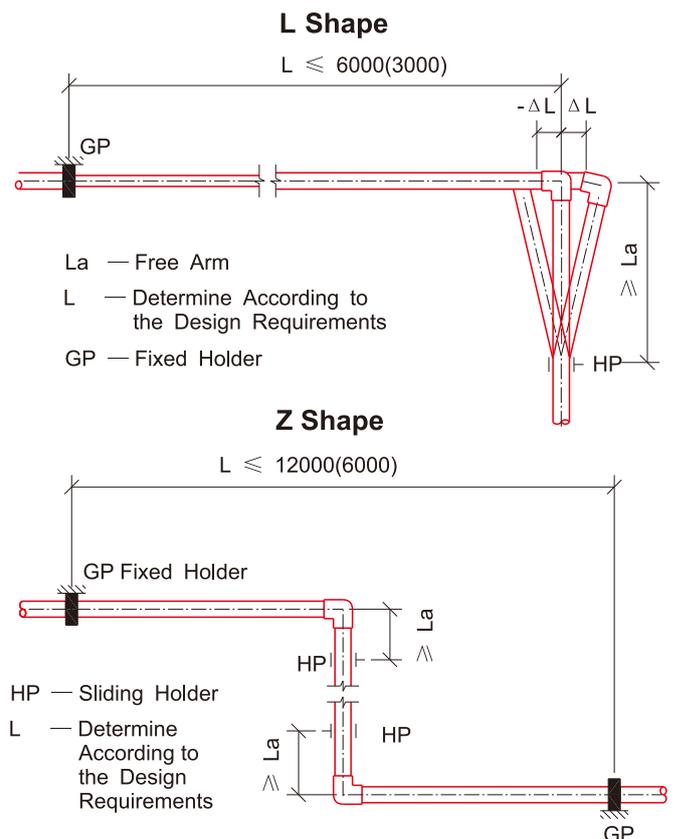
■ Compensation for Pipe Distortion

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

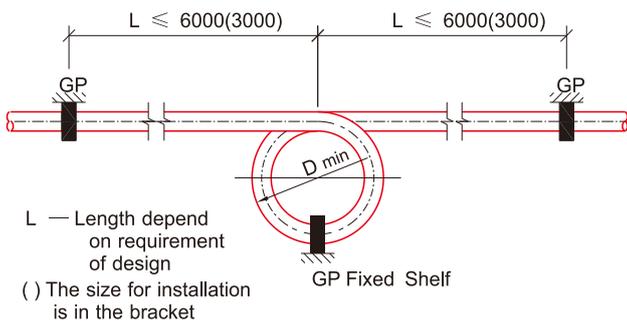


The Minimum Length of Bending Leg should Conform to the List Below.

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

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

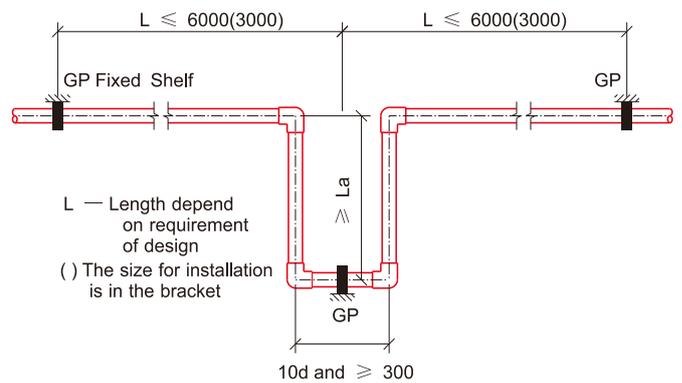
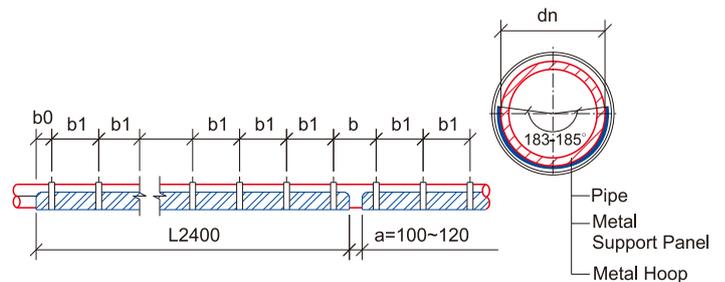


Fig 6 Metal Pipe Support and Installation

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

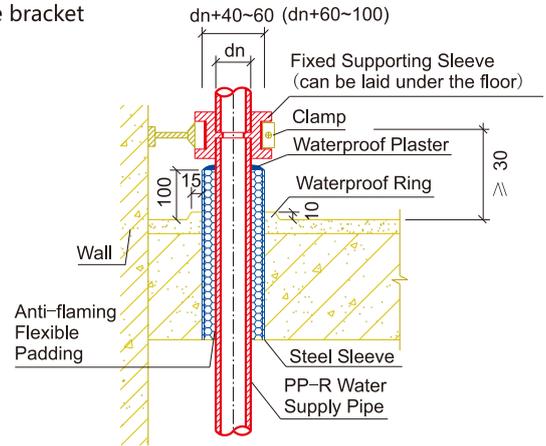


Fig.7 Pipe Crosses Floor (I Type)

Unit: mm

The size for installation is in the bracket

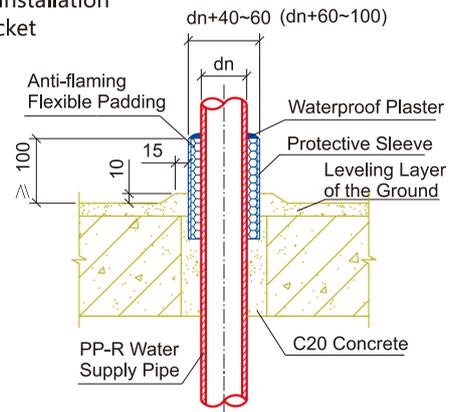


Fig.9 Pipe Crosses Concrete in the Basement

Unit: mm

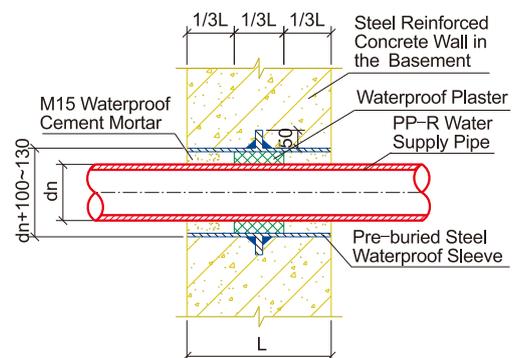


Fig.10 Pipe Crosses Steel Reinforced Concrete and Brick Wall Unit: mm

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

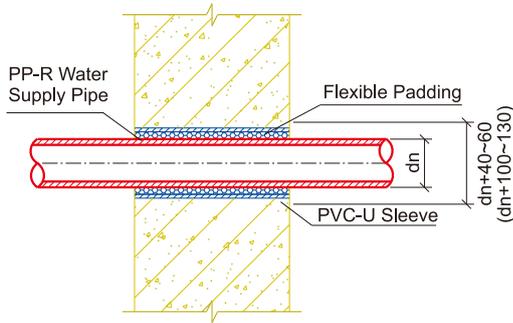


Fig.13 Pipe Crosses Ground Unit: mm

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

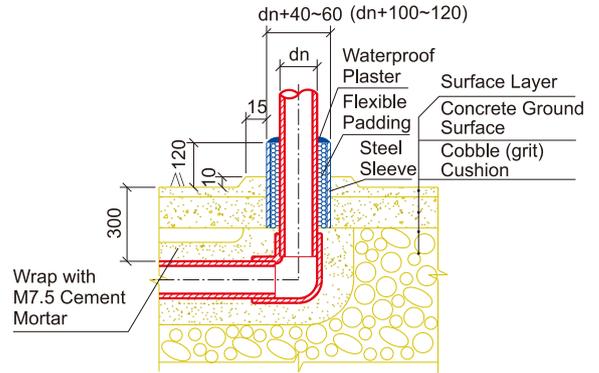


Fig.11 Pipe crosses roof surface (bearing persons) Unit: mm

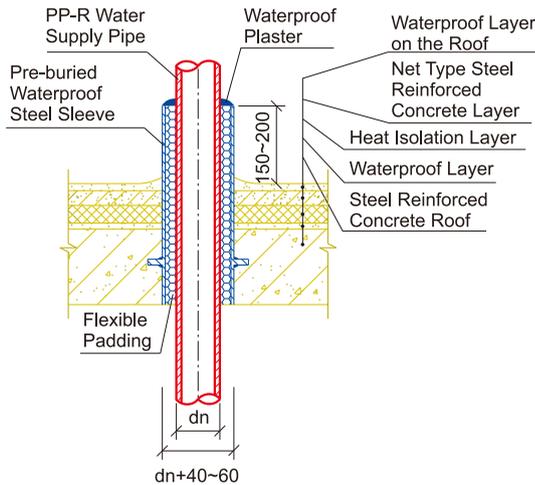


Fig.14 Pipe Crosses Steel Reinforced Concrete Pool (or water tank) Unit: mm

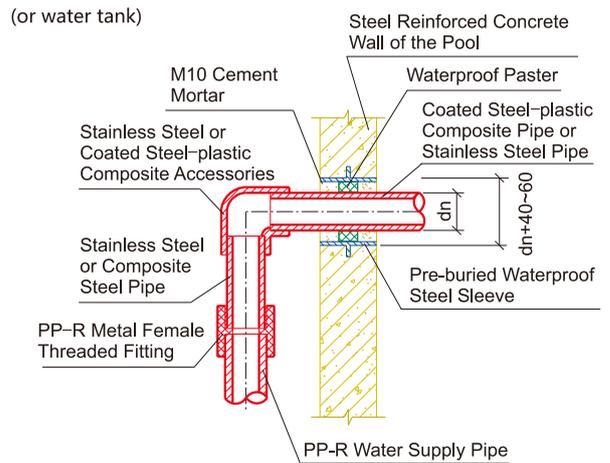


Fig.12 Pipe crosses roof surface (non-bearing persons) Unit: mm

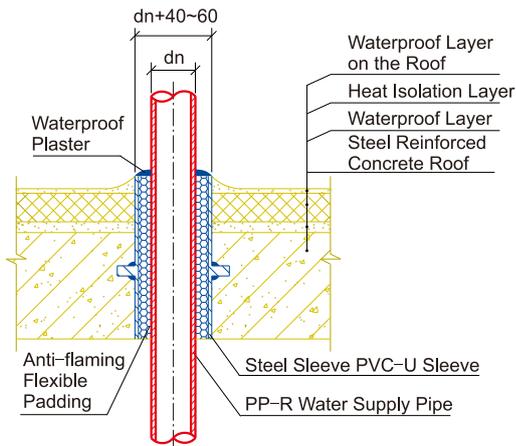
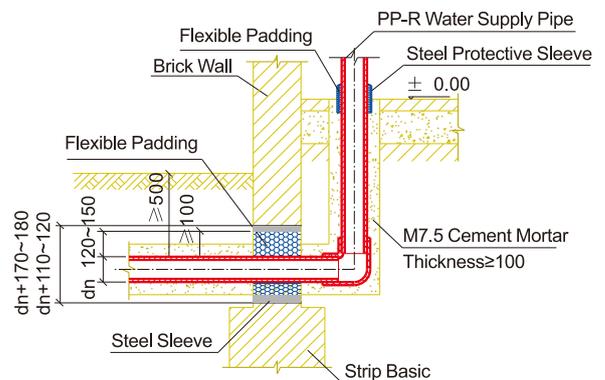


Fig.15 Pre-buried Waterproof Steel Sleeve Unit: mm

() 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 be 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:

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

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:

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

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

BODYCOTE/P-02/144

RAPPORT
Uttälad av ackrediterat laboratorium
Report issued by an accredited laboratory

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

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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 (prEN 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 (Beulco). 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 (prEN 12202-2:1999) Table 8 and Table 9.

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1(7)

PEIA

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

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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

Jarmo Hassinen

2(7)

PEIA

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 $\pm 1^\circ\text{C}$. 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 temperature¹ and the pressure¹ are better than $\pm 1^\circ\text{C}$ and $\pm 2\text{-}1\%$, respectively. The measurements of the wall thickness¹ are accurate within ± 0.01 mm and the diameters¹ within ± 0.1 mm. The water was deionized.

Two types of fittings have been used, commercial brass fittings (Beulco) 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 (prEN 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 (prEN 12202-2:1999) document table 8 and table 9.

¹ The expanded uncertainty of measurement has been calculated as the standard uncertainty of measurement multiplied by the coverage factor $K = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with EA Publication EA-4/02 and is documented at Bodycote Polymer AB.

3(7)

PEIA

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



**BUREAU
VERITAS**

FACTORY APPROVAL CERTIFICATE

Certificate No.: FA- IPC/SR/IPCA-21/014-02

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

Type(s) of product manufactured: **PP-R FITTINGS FOR POLYPROPYLENE (PP)
 PRESSURE PIPES**

Information of product certified: **Annex I to Certificate**
 Applying standards: **DIN 16962-5:2000**
 After examination of the following documents:

- Quality System Certificate n° (ISO9001-2015): **0070021Q53207R7L**
- Factory Audit Report n° **FR- IPC/SR/IPCA-21/014-02**

The undersigned, inspector of Bureau Veritas, certifies that the above factory meets the applicable requirements of BV procedure GM-VPC for the production of the following types of fittings listed in **Annex I to Certificate**.

This certificate is valid from : **Oct. 15th, 2021**
 For a period of three years, ending : **Oct. 14th, 2024**

This approval is only valid provided that every semi-annual audit (in annex) is done and found satisfactory by Bureau Veritas, and when no 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 indissociable part of the voluntary certification process of fittings by Bureau Veritas as defined in BV procedure GM-VPC.

Made at: Shanghai

Name & signature: *Mingsheng Xu*
 Mingsheng Xu

On: Oct. 15th, 2021

BV China INS Department Product Manager

Bureau Veritas Greater China, Industry and Facility Division
 Address: 3/F, No.1288, Wai Ma Road, Huangpu District, Shanghai, 200011, P. R. China
 Tel : +86 21 2319 0001,2319 0002, 2319 0003 Fax : +86 21 68861421

■ WaterMark licence for PP-R Water pipe and Fittings Comply with ISO 15874.

IAPMO R&T OCEANA
 1040 Dandenong Road, Carnegie VIC 3163 AUSTRALIA





IAPMO R&T Oceana is a product certification body which inspects and arranges for the independent laboratory testing of samples taken from the manufacturer's stock or from the market or a combination of both, to verify compliance of the requirements of applicable Standards and Specifications. This activity is coupled with periodic surveillance of the manufacturer's factory and any major subcontractor's site/s as well as the assessment of the manufacturer's Quality Assurance System. This certification is subject to the conditions set forth in the characteristics below and is not to be construed as any recommendation, assurance or guarantee by IAPMO R&T Oceana of the product acceptance by Authorities Having Jurisdiction.

WATERMARK LICENCE

WaterMark Level 1

IAPMO R&T Oceana hereby grants to:

Guangdong Liansu Technology Industrial Co., Ltd.

Liansu Industrial Estate, Longjiang Town,, Shunde Zone, Foshan,, Guangdong, China

the right to use the WaterMark in accordance with the "Procedures for Certification of Plumbing and Drainage Products - WaterMark Technical Specification" and the Plumbing Code of Australia only in respect of the certified product as described in the attached WaterMark Schedule. The Licence is granted subject to the rules governing the Watermark Certification Scheme and the Terms and Conditions for WaterMark Certification.

Evaluated to:

ISO 15874-2 Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 2: Pipes

ISO 15874-3 Plastics piping systems for hot and cold water installations - Polypropylene (PP) - Part 3: Fittings

Manufacturer:

Guangdong Liansu Technology Industrial Co., Ltd.

Licence No.: WM-021300	Certified Date: 9 July 2007
(Certificate of Certification No.: IAPMO-WM-021300-I01-R00)	
Issue Date: 14 March 2018	Expiry Date: 13 March 2023



Chief Executive Officer of the IAPMO Group

This WaterMark certification is for the period indicated herein and is void after the date shown above. Any change in material, manufacturing process, marking or design without having first obtained the approval of IAPMO R&T Oceana, or any evidence of non-compliance with applicable Standards, Specifications or of inferior workmanship, may be deemed sufficient cause for revocation of this certification. Reproduction of or reference to this certificate for advertising purposes may be made only by specific written permission of IAPMO R&T Oceana. Any alteration of this certificate could be grounds for revocation of this certification.

■ CE Certification for PP-R Water Pipe and Fittings Comply with EN ISO 15874-3.

International Certification Registrar



Verification of Conformity

S/N: 002796 No.: **ICR Polska/VC/HM220525**

Name and address of Applicant	Guangdong Liansu Technology Industrial Co., Ltd. Liansu Industrial Estate, Longjiang Town, Shunde Zone, Foshan City, Guangdong Province, China
Name and address of manufacturer:	Guangdong Liansu Technology Industrial Co., Ltd. Liansu Industrial Estate, Longjiang Town, Shunde Zone, Foshan City, Guangdong Province, China
Product name:	PPR PIPE AND FITTINGS
Product types:	DN20-160
Product trademark:	n/a

This document confirms that the product sample meets the requirements of the following standards:

- ISO 15874-2:2013
- ISO 15874-3:2013

The assessment process has been carried out in accordance with individual rules and conditions agreed with the applicant. Evaluation has been carried out in accordance with:

Test reports:	TR22042102
Tests conducted by:	Kind Product Technical Service Co., Ltd.
Issue date:	19.05.2022
Expiration date:	18.05.2027

Remarks
This Verification of conformity refers to the above mentioned product and its conformity in regards of above mentioned standard(s) was proven on test sample.
This Verification of conformity was issued on voluntary basis and does not imply meeting all essential requirements, assessment of the series-production or any other restricted Notified Bodies conformity assessment procedure appropriate for the product.

CE

marking remarks:
mark is not sanctioned by the following verification of conformity mark given here as reference, can be only use by the manufacturer after applying all essential requirements from relevant directives

document status can be checked: <https://cert.icrpolska.com/>



ICR Polska Co. Ltd.
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Director: Rafał Kalinowski
Warsaw, 19.05.2022



Edition: 4.1.1.D of 18.01.2021

■ Russia GOST certificate



■ Germany SKZ certificate



LESSO

CHINA LESSO GROUP HOLDINGS LIMITED

(Hong Kong Listed Stock Code: 2128)

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