LIANSU

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

ISO9001 ISO14001 OHSAS18001

Visit our website: www.liansu.com

Company Profile

LIANSU Overview

Founded in 1986, LIANSU is one of the largest manufactures of plastic pipes, plastic fittings, and plastic extrusion machinery in China. Since our inception, we have built a reputation of providing high quality products and superior customer service with advanced technology and constant innovations. Today, LIANSU has 11 manufacturing bases across China, with more than 300 plastic extrusion lines and 600 injection molding machines. The annual production capacity has exceeded 400,000 tons. We have more than 15 years experience in export. The service network covers over 50 countries all over the world. A full variety of products and large-scale facilities will provide you with one-stop purchasing experience and ensure on-time delivery.

Quality Assurance

- LIANSU has passed the certification of ISO9001 Quality Management System, ISO14001 Environment Management System and OHSAS18001 Occupational Health and Safety Management System.
- Some products have passed the certification of NSF, CSA, and SAI.
- LIANSU plastic pipes and fittings were awarded China Top Brand.
- L&S brand was recognized as a China Famous Brand.
- LIANSU Inspection Center has gained the Accreditation Certificate of China National Accreditation Board for Laboratories（CNAL）.

Advanced Technology

We have an international research and development center with excellent experts and advanced equipments, providing a good experimental platform to develop new products. We also have advanced extrusion and injection machinery in workshop, providing the high quality products. We will constantly research and develop the latest technology to keep the leading position in plastic industry.

Superior Customer Service

LIANSU attaches great importance to pre-sale service, insale service, and after-sale service, providing the flexible and best solution to satisfy the various needs of our customers. We will continue valuing our customers with utmost priority and improving customer service with innovation.

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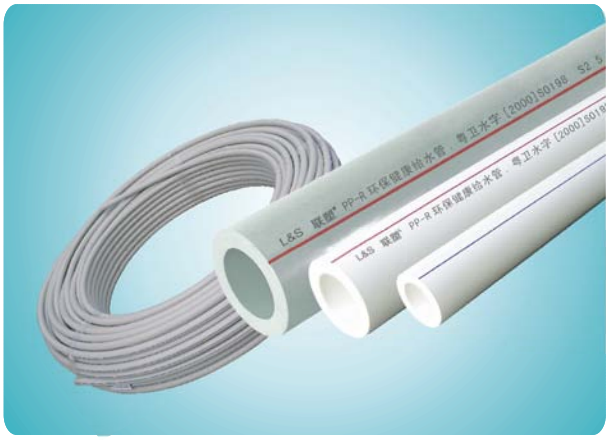
LIANSU

PP-R Water Pipe

Product Overview

◎**Material:** Random Polypropylene
◎**Size:** full 16mm through 160mm availability
◎**Pressure Rating:** 1.25MPa, 1.6MPa, 2.0MPa, 2.5MPa
◎**Standard:** ISO15874 and BS 6920
◎**Colors:**
- Light grey or white, pipe for cold water is marked with blue stripes, pipe for hot water is marked with red stripes
- Other colors are also available upon request

◎**Form Supplied:**
- 4 meters straight length (all size)
- 50 or 100 meters coil length (d_n16~d_n32)
- Other forms are also available upon request



Advantages

◎**High Temperature Resistance:** the maximum sustained working temperature is up to 70℃, the maximum transient temperature is up to 95℃
◎**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

Properties

Properties		Typical Value
Specific Gravity, g/cm^3 (20℃)		0.89～0.91
Tensile Strength, MPa		≥20
Modulus of Elasticity, N/mm^2 (20℃)		800
Thermal Conductivity, w/m • k (20℃)		0.23～0.24
Coefficient of Linear Expansion, mm/m • k		0.14～0.16
Longitudinal Reversion, % (135℃, 2h)		≤2
Pendulum Impact Test,% (15J, 0℃, 2h)		Breaking Ratio≤2
Hydraulic Pressure Test	20℃, Hoop Stress is 16MPa, 1h	No Failure
	95℃, Hoop Stress is 3.5MPa, 1000h	No Failure
	110℃, Hoop Stress is 1.90MPa, 8760h	No Failure
Seal Test of Socket Fusion Joint	20℃, 1h, Test Pressure is 2.4 times of Nominal Pressure.	No Failure

PP-R Water Pipe

Straight Pipe

S 5 (PN 1.25)
* Suitable for Cold Water Supply

Part Number	d_n (mm)	e_n (mm)
21402	20	2.0
21403	25	2.3
21404	32	2.9
21405	40	3.7
21406	50	4.6
21407	63	5.8
21408	75	6.8
21409	90	8.2
21410	110	10.0
21413	160	14.6

S 4 (PN 1.6)
* Suitable for Cold Water Supply

Part Number	d_n (mm)	e_n (mm)
21301	16	1.9
21302	20	2.3
21303	25	2.8
21304	32	3.6
21305	40	4.5
21306	50	5.6
21307	63	7.1
21308	75	8.4
21309	90	10.1
21310	110	12.3
21313	160	17.9

S 3.2 (PN 2.0)
* Suitable for Cold or Hot Water Supply

Part Number	d_n (mm)	e_n (mm)
21201	16	2.2
21202	20	2.8
21203	25	3.5
21204	32	4.4
21205	40	5.5
21206	50	6.9
21207	63	8.6
21208	75	10.3
21209	90	12.3
21210	110	15.1
21213	160	21.9

S 2.5 (PN 2.5)
* Suitable for Cold or Hot Water Supply

Part Number	d_n (mm)	e_n (mm)
21102	20	3.4
21103	25	4.2
21104	32	5.4
21105	40	6.7
21106	50	8.3
21107	63	10.5
21108	75	12.5
21109	90	15.0
21110	110	18.3
21113	160	26.6

Coil Pipe

S 5 (PN 1.25)
* Suitable for Cold Water Supply

Part Number	d_n (mm)	e_n (mm)
22402	20	2.0
22403	25	2.3
22404	32	2.9

S 4 (PN 1.6)
* Suitable for Cold Water Supply

Part Number	d_n (mm)	e_n (mm)
22301	16	1.9
22302	20	2.3
22303	25	2.8
22304	32	3.6

S 3.2 (PN 2.0)
* Suitable for Cold or Hot Water Supply

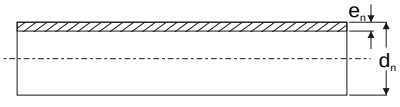
Part Number	d_n (mm)	e_n (mm)
22201	16	2.2
22202	20	2.8
22203	25	3.5
22204	32	4.4

S 2.5 (PN 2.5)
* Suitable for Cold or Hot Water Supply

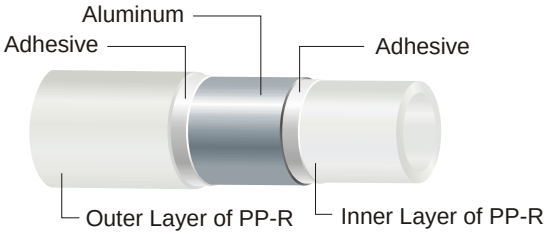
Part Number	d_n (mm)	e_n (mm)
22102	20	3.4
22103	25	4.2
22104	32	5.4

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

d_n: Nominal Outside Diameter
e_n: Nominal Wall Thickness



PP-R / Aluminum Composite Pipe



Product Overview

◎**Material:** PP-R and Al
◎**Size:** full 20mm through 110mm availability
◎**Pressure Rating:** 1.6MPa, 2.0MPa, 2.5MPa
◎**Standard:** CJ/T 210 and BS 6920
◎**Colors:**
- Light grey or white, pipe for cold water is marked with blue stripes, pipe for hot water is marked with red stripes
- Other colors are also available upon request

◎**Form Supplied:**
- 4 meters straight length (all size)
- 50 or 100 meters coil length (d_n20~d_n32)
- Other forms are also available upon request

Advantages

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

Applications

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

S 4 (PN 1.6)
⋆ Suitable for Cold or Hot Water Supply

Part Number		d_n (mm)	e_n (mm)	e_n' (mm)
Cold Water Supply	Hot Water Supply			
23302	24302	20	3.2	2.3
23303	24303	25	3.9	2.8
23304	24304	32	4.6	3.6
23305	24305	40	5.6	4.5
23306	24306	50	6.7	5.6
23307	24307	63	8.4	7.1
23308	24308	75	9.6	8.4
23309	24309	90	11.5	10.1
23310	24310	110	13.7	12.3

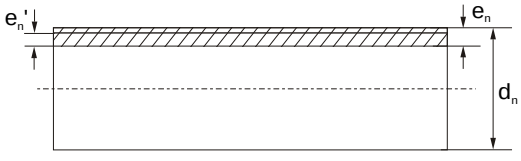
S 3.2 (PN 2.0)
⋆ Suitable for Cold or Hot Water Supply

Part Number	d_n (mm)	e_n (mm)	e_n' (mm)
24202	20	3.7	2.8
24203	25	4.6	3.5
24204	32	5.5	4.4
24205	40	6.7	5.5
24206	50	8.0	6.9
24207	63	10.0	8.6
24208	75	11.5	10.3
24209	90	13.7	12.3
24210	110	16.6	15.1

S 2.5 (PN 2.5)
⋆ Suitable for Cold or Hot Water Supply

Part Number	d_n (mm)	e_n (mm)	e_n' (mm)
24102	20	4.3	3.4
24103	25	5.3	4.2
24104	32	6.4	5.4
24105	40	7.8	6.7
24106	50	9.4	8.3
24107	63	11.8	10.5
24108	75	13.8	12.5
24109	90	16.4	15.0
24110	110	19.8	18.3

d_n: Nominal Outside Diameter
e_n: Nominal Wall Thickness
e_n': Minimum Inner Wall Thickness



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

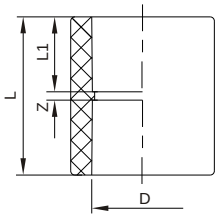
Features

- **Material**: Random Polypropylene
- **Size**: full 16mm through 160mm availability
- **Pressure Rating**: 2.5MPa, or other nominal pressures available upon request
- **Standard**: ISO15874
- **Color**: light gray, white or other colors available upon request
- **Joint**: joining pipe and socket fusion fittings by socket fusion joint

Advantages

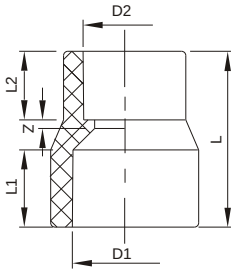
- **High Temperature Resistance**: the maximum sustained working temperature is up to 70℃, the maximum transient temperature is up to 95℃
- **Heat Preservation**: low thermal conductivity result in preserving heat
- **Non-toxic**: no heavy metal additives, would not be covered with dirt or contaminated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

Coupling
（Soc×Soc）



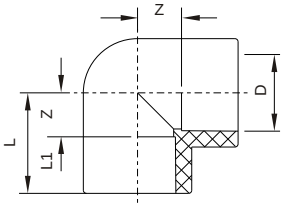
Part Number	Size (mm)	D	Z	L1	L	Qty/Ctn
2010001	16	16	2	14.5	31	
2010002	20	20	2	16	34	1050
2010003	25	25	2	18	38	700
2010004	32	32	3	20.5	44	370
2010005	40	40	3	22	47	210
2010006	50	50	3	25	53	260
2010007	63	63	3	29	61	150
2010008	75	75	3	31	65	100
2010009	90	90	3	35.5	74	50
2010010	110	110	3	41.5	86	36
2010013	160	160	10	58	126	

Reducer
（Soc×Soc）



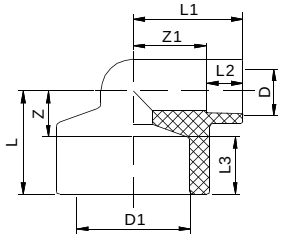
Part Number	Size (mm)	D1	D2	Z	L1	L2	L	Qty/Ctn
2010063	20x16	20	16	2	16	14.5	34.5	
2010094	25x16	25	16	2	18	14.5	38.5	
2010095	25x20	25	20	2	18	16	39	480
2010125	32x16	32	16	2	20.5	14.5	44	
2010126	32x20	32	20	2	20.5	16	42	630
2010127	32x25	32	25	2	20.5	18	44	300
2010157	40x20	40	20	3	22	16	47	378
2010158	40x25	40	25	3	22	18	49	378
2010159	40x32	40	32	3	22	20.5	51.5	210
2010188	50x20	50	20	3	25	16	52	192
2010189	50x25	50	25	3	25	18	54	200
2010190	50x32	50	32	3	25	20.5	56.5	200
2010191	50x40	50	40	3	25	22	58	120
2010220	63x25	63	25	3	29	18	52	200
2010221	63x32	63	32	3	29	20.5	55.5	200
2010222	63x40	63	40	3	29	22	57	200
2010223	63x50	63	50	3	29	25	60	150
2010252	75x32	75	32	3	31	20.5	60	140
2010253	75x40	75	40	3	31	22	61.5	140
2010254	75x50	75	50	3	31	25	65	140
2010255	75x63	75	63	3	31	29	69	90
2010284	90x40	90	40	4	35.5	22	69	90
2010285	90x50	90	50	4	35.5	25	73.5	80
2010286	90x63	90	63	4	35.5	29	78.5	80
2010287	90x75	90	75	4	35.5	31	81.5	55
2010316	110x50	110	50	4	41.5	25	81.5	50
2010317	110x63	110	63	4	41.5	29	85.5	45
2010318	110x75	110	75	4	41.5	31	89.5	45
2010319	110x90	110	90	4	41.5	35.5	96	36
2010413	160x110	160	110	5	58	41.5	141	10

90° Elbow
（Soc×Soc）



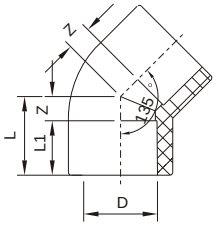
Part Number	Size (mm)	D	Z	L1	L	Qty/Ctn
2020001	16	16	8.5	14.5	23	
2020002	20	20	11.5	16	27.5	480
2020003	25	25	14	18	32	360
2020004	32	32	18	20.5	38.5	184
2020005	40	40	21	22	43	96
2020006	50	50	26	25	51	120
2020007	63	63	32.5	29	61.5	70
2020008	75	75	39	31	70	40
2020009	90	90	47.5	35.5	83	25
2020010	110	110	56.5	41.5	98	15
2020013	160	160	89.5	58	147	4

90° Reducing Elbow
（Soc×Soc）



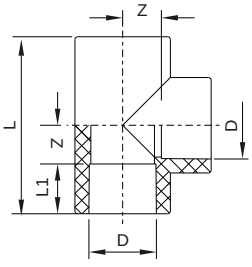
Part Number	Size (mm)	D1	D2	L	L1	L2	L3	Z	Z1	Qty/Ctn
2020095	25×20	25	20	32	30	16	18	14	14	600
2020126	32×20	32	20	35	35	16	20.5	14.5	19	420
2020127	32×25	32	25	37	37	18	20.5	16.5	19	360
2020157	40×20	40	20	40	40	16	22.5	17.5	24	240
2020158	40×25	40	25	42	43	18	22.5	19.5	25	240
2020159	40×32	40	32	44	45	20.5	22.5	21.5	24.5	180
2020188	50×20	50	20	45	48	16	25	20	32	144
2020189	50×25	50	25	47	50	18	25	22	32	144
2020190	50×32	50	32	52	52	20.5	25	27.5	31.5	120
2020191	50×40	50	40	52	54	22.5	25	27	31.5	120

45° Elbow
（Soc×Soc）



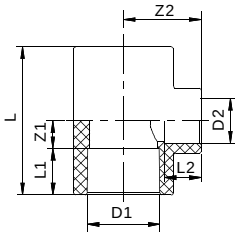
Part Number	Size (mm)	D	Z	L1	L	Qty/Ctn
2030001	16	16	6	14.5	20.5	
2030002	20	20	7	16	23	600
2030003	25	25	8	18	26	360
2030004	32	32	10	20.5	30.5	180
2030005	40	40	11	22	33	112
2030006	50	50	14	25	39	140
2030007	63	63	16	29	45	80
2030008	75	75	18	31	49	50
2030009	90	90	22	35.5	57.5	30
2030010	110	110	26	41.5	67.5	20
2030013	160					5

Tee
（Soc×Soc×Soc）



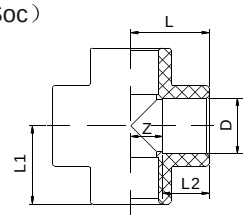
Part Number	Size (mm)	D	Z	L1	L	Qty/Ctn
2040001	16	16	8.5	14.5	46.5	640
2040002	20	20	11.5	16	55	360
2040003	25	25	14	18	64	300
2040004	32	32	18	20.5	77	160
2040005	40	40	21	22	86	96
2040006	50	50	26	25	102	100
2040007	63	63	32.5	29	123	60
2040008	75	75	39	31	140	30
2040009	90	90	47.5	35.5	166	20
2040010	110	110	56.5	41.5	196	12
2040013	160	160	92	58	300	4

Reducing Tee
（Soc×Soc×Soc）



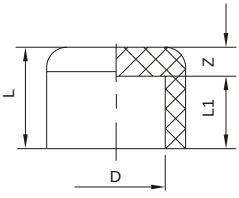
Part Number	Size (mm)	D1	D2	Z1	Z2	L1	L2	L	Qty/Ctn
2040063	20×16	20	16	9	25	16	14.5	50	
2040097	20×25×20	20	25	14	30	16	18	60	250
2040094	25×16	25	16	8.5	14	18	14.5	53	
2040095	25×20	25	20	11.5	29	18	16	59	325
2040096	25×20×20	25	20	13	29	18	16	60	250
2040125	32×16	32	16	8.5	31	20.5	14.5	58	
2040126	32×20	32	20	12	31	20.5	16	65	160
2040127	32×25	32	25	14.5	33.5	20.5	18	70	150
2040157	40×20	40	20	12	33	22	16	68	112
2040158	40×25	40	25	14.5	35.5	22	18	73	112
2040159	40×32	40	32	20	44	22	20.5	84	112
2040188	50×20	50	20	14	44	25	16	58	180
2040189	50×25	50	25	14.5	38.5	25	18	59	168
2040190	50×32	50	32	17	42	25	20.5	84	120
2040191	50×40	50	40	25	42	25	22	100	120
2040220	63×25	63	25	14.5	42.5	29	18	87	96
2040221	63×32	63	32	17	46	29	20.5	92	96
2040222	63×40	63	40	25	58	29	22	108	80
2040223	63×50	63	50	30	62	29	25	118	60
2040252	75×32	75	32	18	39	31	20.5	98	60
2040253	75×40	75	40	22	39	31	22	106	50
2040254	75×50	75	50	27	39	31	25	116	50
2040255	75×63	75	63	33.5	39	31	29	129	36
2040284	90×40	90	40	23	47.5	35.5	22	117	30
2040285	90×50	90	50	28	47.5	35.5	25	127	28
2040286	90×63	90	63	34.5	47.5	35.5	29	140	28
2040287	90×75	90	75	40	47.5	35.5	31	151	25
2040316	110×50	110	50	28	56.5	41.5	25	139	18
2040317	110×63	110	63	34.5	56.5	41.5	29	152	15
2040318	110×75	110	75	40	56.5	41.5	31	163	15
2040319	110×90	110	90	47.5	56.5	41.5	35.5	178	14

Cross
（Soc×Soc×Soc×Soc）



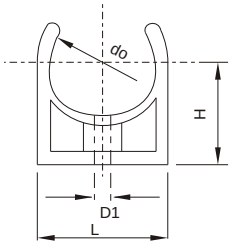
Part Number	Size (mm)	D	Z	L1	L	L2	Qty/Ctn
2050002	20	20	11	27	27	16	
2050003	25	25	15	33	33	18	
2050004	32	32	16	38.5	38.5	20.5	
2050005	40	40	22.5	45	45	22.5	
2050006	50	50	28	53	53	25	

Cap
（Soc）



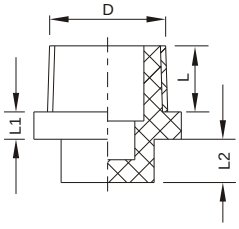
Part Number	Size (mm)	D	Z	L1	L	Qty/Ctn
2060001	16					
2060002	20	20	5	16	21	1440
2060003	25	25	6	18	24	900
2060004	32	32	6.5	20.5	27	420
2060005	40	40	7	22	29	378
2060006	50	50	8	25	33	180
2060007	63	63	10	29	39	180
2060008	75	75	13	31	44	140
2060009	90	90	16.5	35.5	52	80
2060010	110	110	20.5	41.5	62	50
2060013	160	160	49.5	58	107.5	14

Pipe Clamp



Part Number	Size (mm)	D	L	do	D1	H	Qty/Ctn
2070002	20	20	27.5	20.5	5	22	1080
2070003	25	25	32.5	25.5	5	25	1050
2070004	32	32	39	32.5	5	29	960

Male Thread Plug
（Mipt）

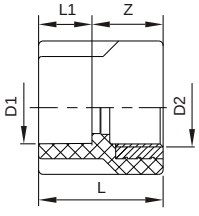


Part Number	Size (mm)	D	L	L1	L2	Qty/Ctn
2080002	1/2"	1/2"	12.5	5	9	1200
2080003	3/4"	3/4"	14.5	6	9.5	900
2080004	1"	1"	16.5	7	11.5	420

Pipe Cover

Part Number	Size (mm)	D	Z	L1	L	Qty/Ctn
2090001	16					
2090002	20					
2090003	25					
2090004	32					
2090005	40					
2090006	50					
2090007	63					
2090008	75					
2090009	90					
2090010	110					
2090013	160					

Female Thread Adapter
（Soc×Fipt with Metal Insert）



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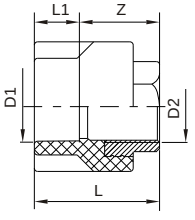
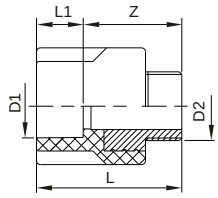


II

Part Number	Size (mm)	D1	D2	Z	L1	L	Qty/Ctn
2100033	16×1/2"						
2100002	20×1/2"	20	1/2"	24	16	40	384
2100065	20×3/4"	20	3/4"	24	16	40	240
2100095	25×1/2"	25	1/2"	24	18	42	300
2100003	25×3/4"	25	3/4"	24	18	42	180
2100126	32×1/2"	32	1/2"	24	20.5	44.5	180
2100127	32×3/4"	32	3/4"	24	20.5	44.5	210
2110002	20×1/2"	20	1/2"	34	16	50	
2110065	20×3/4"	20	3/4"	37	16	53	
2110003	25×3/4"	25	3/4"	39	18	57	
2110004	32×1"	32	1"	38	20.5	58.5	128
2110159	40×1"	40	1"	38	22	60	120
2110005	40×1 1/4"	40	1 1/4"	44	22	66	64
2110191	50×1 1/4"	50	1 1/4"	44	25	69	64
2110006	50×1 1/2"	50	1 1/2"	44	25	69	48
2110007	63×2"	63	2"	48	29	77	44
2110255	75×2"	75	2"	48.5	31	79.5	44

Male Thread Adapter

（Soc×Mipt with Metal Insert）



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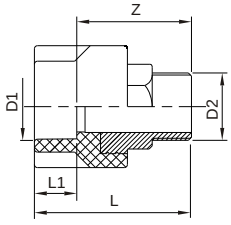
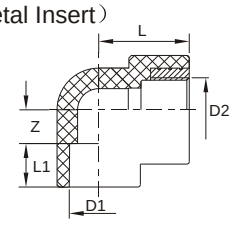


II

Part Number	Size (mm)	D1	D2	Z	L1	L	Qty/Ctn
2120033	16×1/2"						
2120002	20×1/2"	20	1/2"	38	16	40	240
2120065	20×3/4"	20	3/4"	38	16	40	180
2120095	25×1/2"	25	1/2"	38	18	42	210
2120003	25×3/4"	25	3/4"	38	18	42	180
2120126	32×1/2"	32	1/2"	38	20.5	44.5	180
2120127	32×3/4"	32	3/4"	38	20.5	44.5	180
2130004	32×1"	32	1"	57	20.5	77.5	96
2130159	40×1"	40	1"	57	22	79	96
2130005	40×1 1/4"	40	1 1/4"	65	22	87	64
2130191	50×1 1/4"	50	1 1/4"	65	25	90	64
2130006	50×1 1/2"	50	1 1/2"	65	25	90	48
2130007	63×2"	63	2"	73	29	120	40
2130255	75×2"	75	2"	77.5	31	108.5	28

Female Thread Elbow

（Soc×Fipt with Metal Insert）



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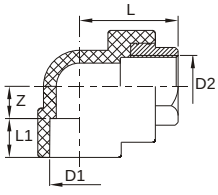
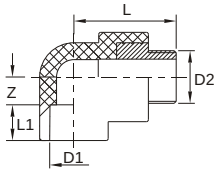


II

Part Number	Size (mm)	D1	D2	Z	L1	L	Qty/Ctn
2140033	16×1/2"	20	1/2"	12	35	16	
2140002	20×1/2"	20	3/4"	14	35	16	240
2140065	20×3/4"	25	1/2"	12	37.5	18	210
2140095	25×1/2"	25	3/4"	14	37.5	18	210
2140003	25×3/4"	32	1/2"	14.5	37.5	20.5	180
2140126	32×1/2"	32	3/4"	17	37.5	20.5	180
2140127	32×3/4"	32	1"	17	52	20.5	150
2150002	20×1/2"	20	1"	13	44	16	
2150004	32×1"	32	1"	17	54.5	20.5	96

Male Thread Elbow

（Soc×Mipt with Metal Insert）



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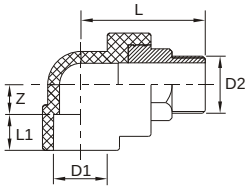
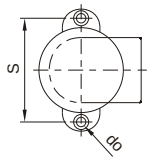


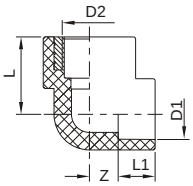
II

Part Number	Size (mm)	D1	D2	Z	L	L1	Qty/Ctn
2160033	16×1/2"	20	1/2"	12	49	16	
2160002	20×1/2"	20	3/4"	14	49	16	240
2160065	20×3/4"	25	1/2"	12	51.5	18	150
2160095	25×1/2"	25	3/4"	14	51.5	18	210
2160003	25×3/4"	32	1/2"	14.5	51.5	20.5	150
2160126	32×1/2"	32	3/4"	17	51.5	20.5	150
2160127	32×3/4"	32	1"	17	71	20.5	120
2170004	32×1"	32	1"	17	73.5	20.5	80

Female Thread Elbow with Seat

（Soc×Fipt with Metal Insert）

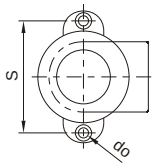


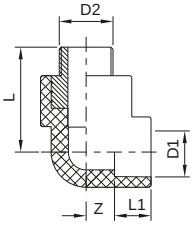


Part Number	Size (mm)	D1	D2	L	S	L1	do	Qty/Ctn
2180002	20×1/2"	20	1/2"	35	50	16	5	210
2180065	20×3/4"	20	3/4"	35	55	16	5	180
2180095	25×1/2"	25	1/2"	37.5	50	18	5	180
2180003	25×3/4"	25	3/4"	37.5	55	18	5	180

Male Thread Elbow with Seat

（Soc×Mipt with Metal Insert）

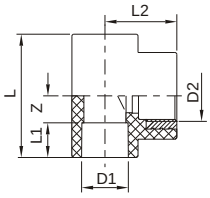




Part Number	Size (mm)	D1	D2	L	S	L1	do	Qty/Ctn
2190002	20×1/2"	20	1/2"	49	50	16	5	180
2190065	20×3/4"	20	3/4"	49	55	16	5	180
2190095	25×1/2"	25	1/2"	51.5	50	18	5	180
2190003	25×3/4"	25	3/4"	51.5	55	18	5	150

Female Thread Tee

（Soc×Soc×Fipt with Metal Insert）



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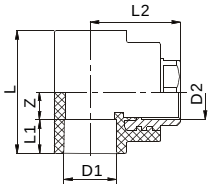
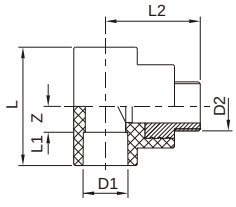


II

Part Number	Size (mm)	D1	D2	Z	L2	L1	L	Qty/Ctn
2200002	20×1/2"	20	1/2"	12	35	16	56	250
2200065	20×3/4"	20	3/4"	14	35	16	60	225
2200095	25×1/2"	25	1/2"	12	37.5	18	60	180
2200003	25×3/4"	25	3/4"	14	37.5	18	64	180
2200126	32×1/2"	32	1/2"	12	37.5	20.5	65	168
2200127	32×3/4"	32	3/4"	14.5	37.5	20.5	70	135
2210002	20×1/2"	20	1/2"	12	35	16	56	
2210004	32×1"	32	1"	17	52	20.5	75	80

Male Thread Tee

（Soc×Soc×Mipt with Metal Insert）



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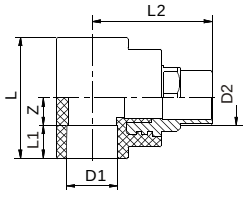
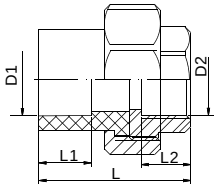


II

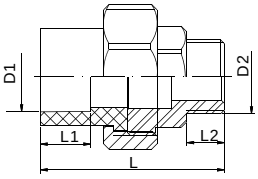
Part Number	Size (mm)	D1	D2	Z	L2	L1	L	Qty/Ctn
2220002	20×1/2"	20	1/2"	12	49	16	56	180
2220065	20×3/4"	20	3/4"	14	49	16	60	150
2220095	25×1/2"	25	1/2"	12	51.5	18	60	150
2220003	25×3/4"	25	3/4"	14	51.5	18	64	120
2220126	32×1/2"	32	1/2"	12	51.5	20.5	65	135
2220127	32×3/4"	32	3/4"	14.5	51.5	20.5	70	100
2230004	32×1"	32	1"	17	71	20.5	75	80

Female Thread Union
（Soc×Fipt with Metal）



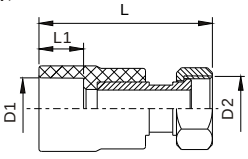
Part Number	Size (mm)	D1	D2	L1	L2	L	Qty/Ctn
2240002	20×1/2"	20	1/2"	16	16	42	180
2240003	25×3/4"	25	3/4"	18	17	47	150
2240004	32×1"	32	1"	20.5	18	52	90

Male Thread Union
（Soc×Mipt with Metal）



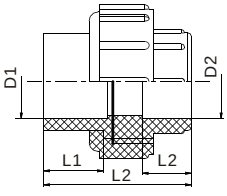
Part Number	Size (mm)	D1	D2	L1	L2	L	Qty/Ctn
2250002	20×1/2"	20	1/2"	16	14	55	150
2250003	25×3/4"	25	3/4"	18	13.5	60	120
2250004	32×1"	32	1"	20.5	19	71	72

Flexible Joint I
（Soc×Fipt with Metal）



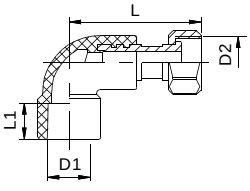
Part Number	Size (mm)	D1	D2	L	L1	Qty/Ctn
2260002	20×1/2"	20	1/2"	67	16	300
2260065	20×3/4"	20	3/4"	68	16	240
2260095	25×1/2"	25	1/2"	69	18	240
2260003	25×3/4"	25	3/4"	70	18	240
2260004	32×1"	32	1"	79	20.5	150

Union
（Soc×Soc）



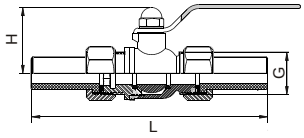
Part Number	Size (mm)	D1	D2	L1	L2	L	Qty/Ctn
2270002	20	20	20	16	16	45	240
2270003	25	25	25	18	17	48	200
2270004	32	32	32	20.5	18	58	120

Flexible Joint Elbow
（Soc×Fipt with Metal）



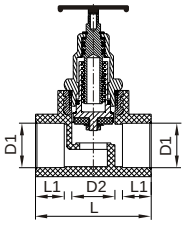
Part Number	Size (mm)	D1	D2	L	L1	Qty/Ctn
2280002	20×1/2"	20	1/2"	59	16	

Ball Valve
（Spig×Spig）



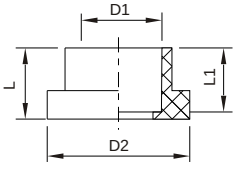
Part Number	Size (mm)	L	G	H	Qty/Ctn
2290002	20	142	3/4"	35	96
2290003	25	153	1"	37	72
2290004	32	172	1 1/4"	47.5	36

Stop Valve
（Soc×Soc）



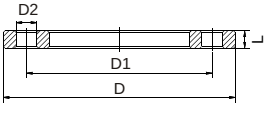
Part Number	Size (mm)	D1	L	L1	Qty/Ctn
2300002	20	20	64	16	96
2300003	25	25	74	18	72
2300004	32	32	82	20.5	48
2300005	40	40	85	22	40
2300006	50	50	115	25	30
2300007	63	63	121	29	20

Stub Flange
（Soc×Flange）



Part Number	Size (mm)	D1	D2	L	L1	Qty/Ctn
2310005	40	40	78	27	22	160
2310006	50	50	87	30	25	90
2310007	63	63	100	34	29	60
2310008	75	75	115	36	31	50
2310009	90	90	133	40.5	35.5	30
2310010	110	110	155	46.5	41.5	20
2310013	160	160	268	58	86	

Flange
（Steel Tray）



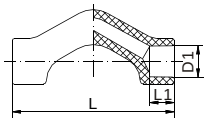
Part Number	Size (mm)	D	D1	D2	L	Qty/Ctn
2320005	40	140	100	18	10	
2320006	50	150	110	18	10	
2320007	63	160	125	18	12	
2320008	75	185	145	18	15	
2320009	90	200	180	18	15	
2320010	110	220	180	18	15	
2320013	160	285	240	22	18	

Rubber Gasket

Part Number	Size (mm)	Qty/Ctn
2330005	40	
2330006	50	
2330007	63	
2330008	75	
2330009	90	
2330010	110	
2330013	160	

Bending pipe

（Soc×Soc）



Part Number	Size (mm)	D1	L	L1	Qty/Ctn
2340002	20	20	100	16	
2340003	25	25	120	18	
2340004	32	32	135	20.5	

Definitions of abbreviated configuration description follow

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

Pipe Cutter

Part Number	Model	Application Range
2350001		16~32

Socket Fusion Welding Machine

Part Number	Model	Application Range
2360001	1000w	20-63
2360002	1600w	75-110
2360003	2500w	160

Welding Socket

Part Number	Model	Application Range
2370001		16
2370002		20
2370003		25
2370004		32
2370005		40
2370006		50
2370007		63
2370008		75
2370009		90
2370010		110
2370013		160

Socket Fusion Assistive Devices

Part Number	Model	Application Range
2380001		90-160

Manual Peeling Tool

（Especialy for PP-R / Aluminum Composite Pipe）

Part Number	Model	Application Range
2390001		20-25
2390002		32-40

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

Part Number	Model	Application Range
2400002		20
2400003		25
2400004		32
2400005		40
2400006		50
2400007		63

Blade for Peeling Tool

Part Number		Model	Application Range
Manual	2410001		20-25
	2410002		32-40
Electric	2410003		20-63

Electric Peeling Machine
（Especialy for PP-R / Aluminum Composite Pipe）

Part Number	Model	Application Range
2420001		40-110

Electric Peeling Tool
（Accessories of Electric Peeling Machine）

Part Number	Model	Application Range
2430005		40
2430006		50
2430007		63
2430008		75
2430009		90
2430010		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	9.8	5	4	2
20	11.0	5	4	2
25	12.5	7	4	2
32	14.6	8	6	4
40	17.0	12	6	4
50	20.0	18	6	4
63	23.9	24	8	6
75	27.5	30	8	8
90	32.0	40	8	8
110	38.0	50	10	8

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℃, 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.

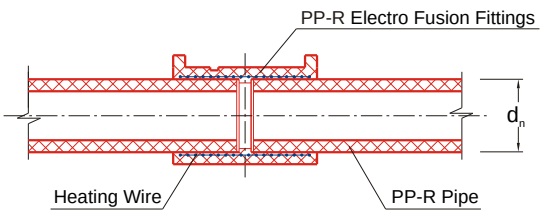
Electro Fusion Joint for PP-R Pipelines

1. Cut the ends of the pipes rectangularly and burr them thoroughly.
2. Clean and dry the ends of the pipes at the necessary length.
3. Mark the depth of electro fusion sockets at the end of each pipe.
4. Peel the surface of both pipes with the marks thoroughly with a peeling tools or a lame.
5. Clean the ends of pipes again thoroughly.
6. Clean the inner surface of the electro fusion sockets with cleansing clothes.
7. Push the prepared pipe into the electro fusion sockets, align and restrain the fittings to the pipes.
8. Start and monitor the fusion process. When there is melt flowing in the observation hole, turn off the current, the heating is completed.

   Remark:
   The heating time should comply with the requirement of products and be adjusted according to the working temperature. The relationship between electric welding heating time and working temperature is as follows. Heating time needn't be adjusted if electro fusion welding machine can adjust the temperature automatically.

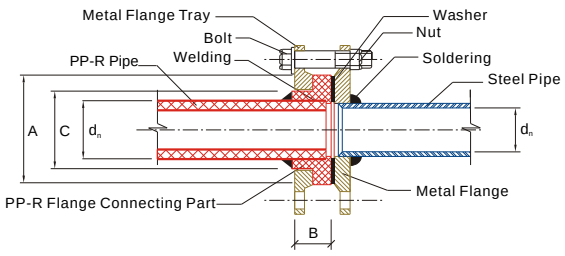
Working Temperature (℃)	-10	0	10	20	30	40	50
Revise	1.12T	1.08T	1.04T	T	0.96T	0.92T	0.88T

9. Cooling to specified time, do not move or stress the pipe and fittings during the whole fusion process including cooling time.



Flange Joint for 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

d_n	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

Socket Fusion Joint for PP-R / Aluminum Composite 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. Peel off the aluminum-polypropylene layer completely with peeling tools. You should only use Liansu-original peeling tools with undamaged peeling blades. Blunt peeling blades have to be replaced with original ones. It will be necessary to make the trial peeling to check the correct setting of the new blade.
3. Clean the fittings' socket and the pipe's spigot with cleansing clothes.
4. 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 instruction on page 15.
5. 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.
6. The joint elements have to be fixed during the specified assembly time. After the cooling period, the fused joint is ready for use.

Test Reports

PP-R Water Pipe complies with BS 6920

Our Ref: CRJC

WRAS
Water Regulations Advisory Scheme

27 April 2006

Central Point Testing & Technology Co Ltd
2B Hua Jing Building
Wen Hua Road
East City District
Dongguan
Guangdong Province
PR China
523109

Dear Sir

WATER REGULATIONS ADVISORY SCHEME
"ITEMS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY - BS 6920"

We refer to your application for the material(s) described below to be approved arising from the results of the tests of effect on water quality that have been carried out on the product(s) so described, it has been decided that there is no objection to its/their use provided the source, nature and manufacturing processes of the ingredients and products are not changed. (See notes overleaf).

POLYPROPYLENE - COMPONENTS **5260**

PP-R tube. Grey coloured polypropylene pipe. Cold water use only.

Test Report: 358K

0510515 **CENTRAL POINT TESTING & TECHNOLOGY CO LTD**

An entry, as above, will accordingly be included in the Water Fittings and Materials Directory, Part Two, under the section headed, "Materials which have passed full tests of effect on water quality".

Your attention is drawn to the statement overleaf. Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that the product as listed, having passed the tests of effect on water quality, is suitable for use in contact with potable water and that a reference to the product will be included in the Materials section, Part Two, of the Water Fittings and Materials Directory: this may be abbreviated to "Water Regulations Advisory Scheme - Approved Product" or "WRAS - Approved Product". **Approval of this product does not signify the approval of its mechanical or physical properties for any use.**

The Technical Committee of the Scheme reserves the right to review approval. This product automatically becomes due for audit reassessment in October 2010.

Yours faithfully

Chris Ramsey (Miss)
Materials Administrator
Water Regulations Advisory Scheme

WRc-NSF Final Report for the Testing of a Product for Water Regulations Advisory Scheme Approval	WRc-NSF Report No MATLAB 358K
Name of Organisation: Guangdong Liansu Technology Industry Co. Ltd	
Product: PP-R Tube	Date of Report 11/10/05

1. SUMMARY

Test	Result
Odour and flavour of water	Pass
Appearance of water	Pass
Growth of aquatic microorganisms	Pass
The extraction of substances that may be of concern to public health	Pass
Extraction of metals	Pass

This product has satisfied the criteria set out in BS6920: Part 1: 2000 "Specification" and thus does comply with the requirements of the Water Regulations Advisory Scheme Tests of Effect on Water Quality and is suitable for use with cold water but not hot water.

Mr Mark Norris, Materials Test Manager Date 11th Oct 2005

Please note the following statements

a) The samples of the product referred to in this report have been tested in accordance with the methods specified in BS6920: 2000 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water.

b) This work has been undertaken in the UKAS accredited laboratory of WRc-NSF Ltd Oakdale, UKAS registration number 0626, unless otherwise stated. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.

c) The results specified in this report relate only to the sample(s) of this product submitted for testing. Any changes in the nature or source of ingredients and the process of manufacturer or application could affect the suitability of this product for use in contact with potable water.

d) We draw to your attention that reports issued by the accredited test laboratories do not of themselves constitute approval by the Water Regulations Advisory Scheme or the test laboratory. Only a letter from the Scheme, citing a Directory Reference number can be regarded as indicating approval.

e) Materials and products intended for use by a public water supply company in the preparation or conveyance of water may need to satisfy more comprehensive toxicological requirements as specified by the Drinking Water Inspectorate. These additional requirements are necessary to ensure Water Company usage complies with Regulation 31 of the Water Supply (Water Quality) Regulations 2000.

WORK/MAT012 Revision No. 3, 05/07/05 Page 2 of 9

PP-R / Aluminum Composite Pipe complies with BS 6920

Our Ref: CRJC

WRAS
Water Regulations Advisory Scheme

27 April 2006

Central Point Testing & Technology Co Ltd
2B Hua Jing Building
Wen Hua Road
East City District
Dongguan
Guangdong Province
PR China
523109

Dear Sir

WATER REGULATIONS ADVISORY SCHEME
"ITEMS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY - BS 6920"

We refer to your application for the material(s) described below to be approved arising from the results of the tests of effect on water quality that have been carried out on the product(s) so described, it has been decided that there is no objection to its/their use provided the source, nature and manufacturing processes of the ingredients and products are not changed. (See notes overleaf).

POLYETHYLENE - COMPONENTS **5240**

PAP tube. White coloured polyethylene/aluminium composite pipe. Cold water use only.

Test Report: 359K

0510516 **CENTRAL POINT TESTING & TECHNOLOGY CO LTD**

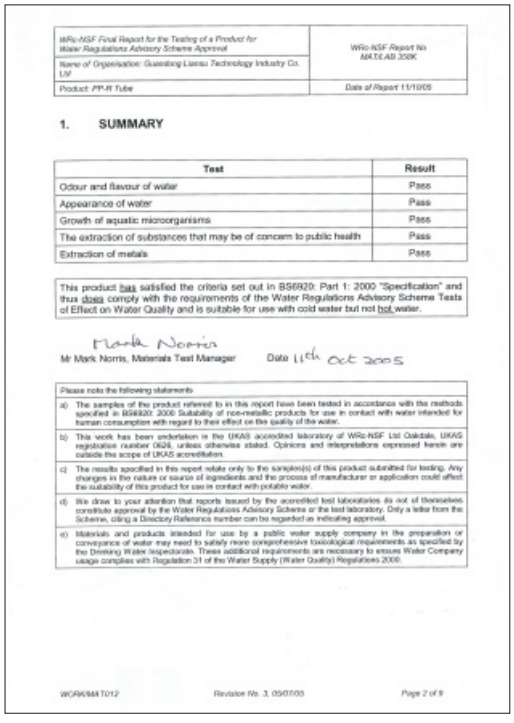
An entry, as above, will accordingly be included in the Water Fittings and Materials Directory, Part Two, under the section headed, "Materials which have passed full tests of effect on water quality".

Your attention is drawn to the statement overleaf. Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that the product as listed, having passed the tests of effect on water quality, is suitable for use in contact with potable water and that a reference to the product will be included in the Materials section, Part Two, of the Water Fittings and Materials Directory: this may be abbreviated to "Water Regulations Advisory Scheme - Approved Product" or "WRAS - Approved Product". **Approval of this product does not signify the approval of its mechanical or physical properties for any use.**

The Technical Committee of the Scheme reserves the right to review approval. This product automatically becomes due for audit reassessment in October 2010.

Yours faithfully

Chris Ramsey (Miss)
Materials Administrator
Water Regulations Advisory Scheme



WRc-NSF Final Report for the Testing of a Product for Water Regulations Advisory Scheme Approval	WRc-NSF Report No MATLAB 359K
Name of Organisation: Guangdong Liansu Technology Industry Co. Ltd	
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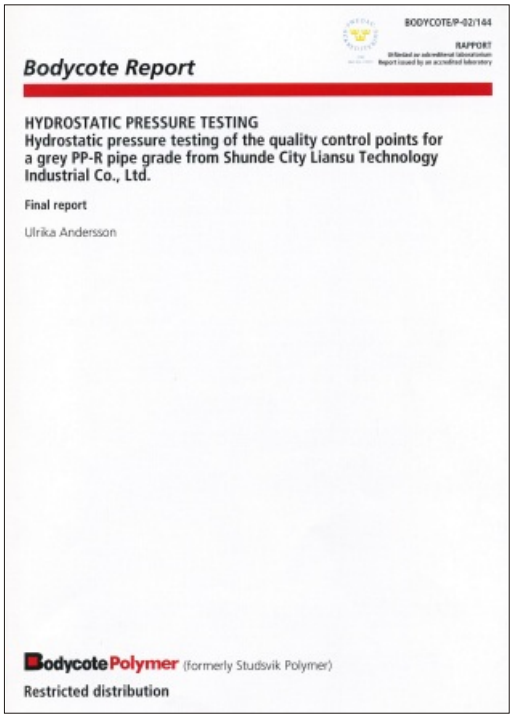
WORK/MAT012 Revision No. 3, 05/07/05 Page 2 of 9

BS 6920: Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water

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



BODYCOTE/P-02/144

RAPPORT
Ofrbindad av ackrediterad laboratorium
Report issued by an accredited laboratory

Bodycote Report

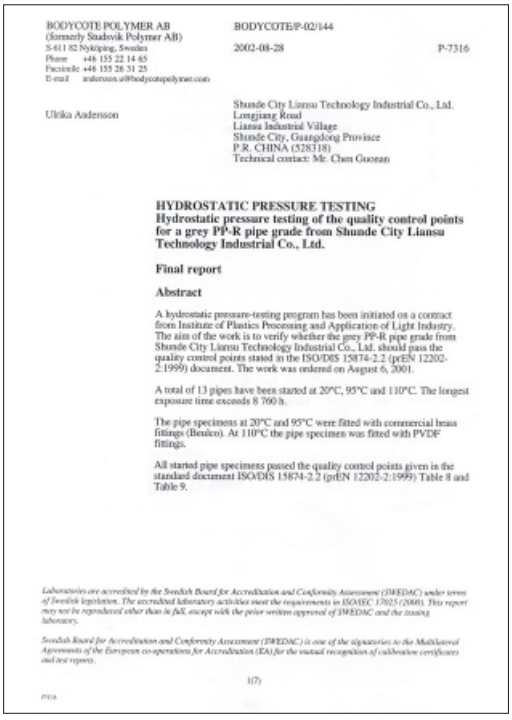
HYDROSTATIC PRESSURE TESTING
Hydrostatic pressure testing of the quality control points for a grey PP-R pipe grade from Shunde City Liansu Technology Industrial Co., Ltd.

Final report

Ulrika Andersson

Bodycote Polymer (formerly Studsvik Polymer)

Restricted distribution



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BODYCOTE/P-02/144

2002-08-28

P-7316

Ulrika Andersson

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Technical contact: Mr. Chen Guoran

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 (Bealco). 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)

BODYCOTE POLYMER AB
(formerly Studsvik Polymer AB)

BODYCOTE/P-02/144

2002-08-28

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

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

Responsible for the report

Ulrika Andersson

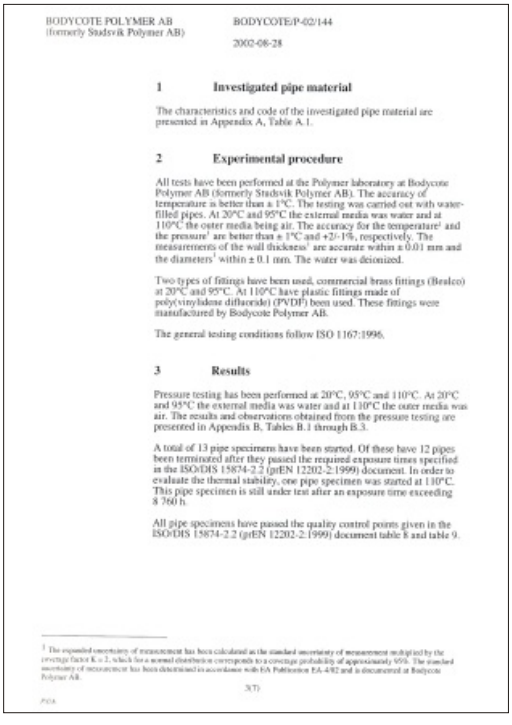
Reviewed by

Daniel Johansson

Approved by

Jarno Hassinen

2(7)



BODYCOTE POLYMER AB
(formerly Studsvik Polymer AB)

BODYCOTE/P-02/144

2002-08-28

1 Investigated pipe material

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

2 Experimental procedure

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

Two types of fittings have been used, commercial brass fittings (Bealco) 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)

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

ISO 1167: Thermoplastics pipes, fittings and assemblies for the conveyance of fluids -- Determination of the resistance to internal pressure

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7. Jiangsu Nanjing
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