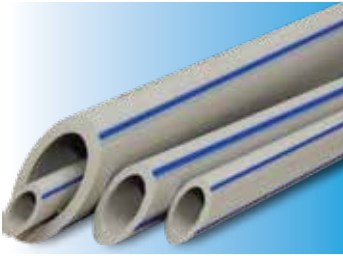




BINA PLASTIC
INDUSTRIES SDN BHD

QUALITY DRIVEN since 1973



BBB™

PP-R PIPING SYSTEM

Suitable for Hot & Cold Water



COMPANY INTRODUCTION

Founded in 1973, Bina Plastic has grown significantly into a company employing several hundred staffs and possesses ten large and modern factories. Bina Plastic supplies complete piping systems comprising various kind of plastics including PVC-U, PPR, HDPE and ABS. Bina Plastic piping systems are used in a broad cross-section of markets such as water supply, wastewater and stormwater drainage, irrigation, electrical and telecommunication.

QUALITY DRIVEN
since 1973



PP-R PIPING SYSTEM

With the rising demand of quality houses and buildings, good internal plumbing system is equally expected to play its role for the overall expectations of the owners. Hence the introduction of BBB PP-R pipes and fittings which offers continuous clean water, non-leakage, non-clogging and easy installation. Advantages of BBB PP-R pipes and fittings offers the following benefits:

Life Durations

Over 50 years in temperatures up to 90°C and operating pressure from 6 - 26 bars.

Hydraulic Pressure Resistance

BBB PP-R pipes show resistance under very high pressure (more than 100 bars).

Low Thermal Penetrability

BBB PP-R has very low thermal penetrability in hot and freezing water.

Chemical Resistance

BBB PP-R shows high resistance to most chemicals and can be used in chemical laboratories.

Mechanical Resistance

BBB PP-R pipes have very good resistance in mechanical strength making it hard to break or crack.

Endurance in Corrosion

BBB PP-R shows remarkable endurance to corrosion even in areas where the water is very hard. The material remain constant.

Low Friction

The texture of the material and its smooth internal surface ensures minimum friction, thereby maintaining constant pressure and non-clogging.

Certificates: BBB PP-R are certified by SIRIM and SPAN under Malaysian standards MS 2286 & EN ISO 15874.

Types of pipes available BBB PP-R PIPES



Suitable for
HOT&COLD
 WATER

CHARACTERISTICS

Raw Material

BBB PP-R pipes and fittings are manufactured using high quality Polypropylene, Random Co-polymer resins. Its physical and chemical properties make it a versatile piping system in a wide range of applications in different industries.

Its advantages over other PP type 1 and 2 and other thermoplastic pipes in the potable water industries are its high impact strength and resistance to high temperatures.

Mechanical & Thermal Properties

Polypropylene Random Co-polymer (PP Type 3)

PROPERTY	TEST METHOD	UNIT	VALUE	
Viscosity Number J	ISO 1628 T3	cm ³ /g	430	
Melt Flow Rate	MFR 190/5	g/10 min	0.5	
	MFR 230/2.16	g/10 min	0.3	
	MFR 230/5	g/10 min	1.5	
Density at 23°C	ISO 1183	g/cm ³	0.898	
Crystalline Melting Temperature	DIN 53736 B2	°C	150-154	
Tensile stress at Yield	ISO 527	N/mm ²	23	
Tensile Strength at Break	Speed 50 mm/min	N/mm ²	40	
Elongation at Break	Test specimen 1B	%	>50	
Ball Indentation Hardness	ISO 2039 T1 (132N)	N/mm ²	43	
Flexural Stress at 3.5%	DIN 53452	N/mm ²	20	
Outer Fiber Strain				
Modulus or Elasticity, Tensile Test	ISO 527	N/mm ²	700	
Shear Modulus	ISO 537 Method A	-10°C	N/mm ²	1100
		0°C	N/mm ²	770
		10°C	N/mm ²	500
		20°C	N/mm ²	370
		30°C	N/mm ²	300
		40°C	N/mm ²	240
		50°C	N/mm ²	180
60°C	N/mm ²	140		
Mechanical Strength Properties	DIN 8078		no failure	
Determined by Impact Strength at 0°C				
Impact Strength (Charpy)	ISO 179/1eU	RT	kJ/m ²	no failure
		0°C	kJ/m ²	no failure
		-10°C	kJ/m ²	no failure
Notched Impact Strength (Charpy)	ISO 179/1eA	RT	kJ/m ²	20
		0°C	kJ/m ²	4
		20°C		3
Coefficient of Linear Thermal Expansion	VDE 0304 Part 1&4	K ⁻¹	1.5 x10 ⁻⁴	
Thermal Conductivity at 20°C	DIN 52612	W/mK	0.24	
Specific Heat at 20°C	Adiabatic Calorimeter	kJ/kg K	2.0	

ISO = International Organization for Standardization VDE = Verband Deutscher Elektrotechniker
The test specimens were made and the test methods selected in accordance with DIN 16774, Part 2

PP-R PIPES SPECIFICATION

PP-R Pipe S5.0 (PN10)

PRODUCT CODE	OUTER DIAMETER (mm)	MIN. WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)
PR/020-10-4S	20	1.9	16.2
PR/025-10-4S	25	2.3	20.4
PR/032-10-4S	32	2.9	26.2
PR/040-10-4S	40	3.7	32.6
PR/050-10-4S	50	4.6	40.8
PR/063-10-4S	63	5.8	51.4
PR/075-10-4S	75	6.8	61.4
PR/090-10-4S	90	8.2	73.6
PR/110-10-4S	110	10.0	90.0



PP-R Pipe
4m per Length
PN10 (S 5.0)

PP-R Pipe S3.2 (PN16)

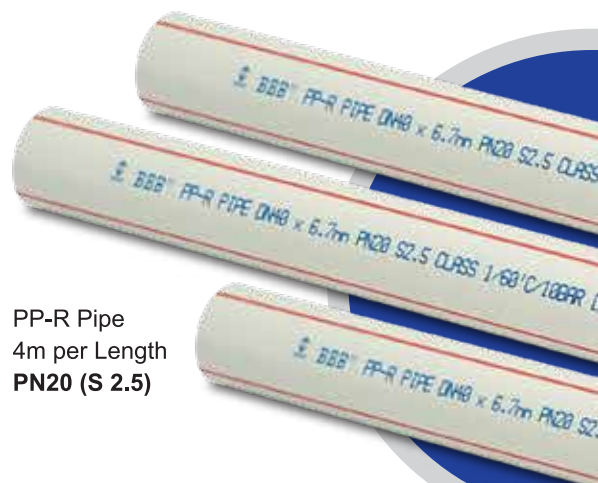
PRODUCT CODE	OUTER DIAMETER (mm)	MIN. WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)
PR/020-16-4S	20	2.8	14.4
PR/025-16-4S	25	3.5	18.0
PR/032-16-4S	32	4.4	23.2
PR/040-16-4S	40	5.5	29.0
PR/050-16-4S	50	6.9	36.2
PR/063-16-4S	63	8.6	45.8
PR/075-16-4S	75	10.3	54.4
PR/090-16-4S	90	12.3	65.4
PR/110-16-4S	110	15.1	79.8
PR/160-16-4S	160	21.9	116.8



PP-R Pipe
4m per Length
PN16 (S 3.2)

PP-R Pipe S2.5 (PN20)

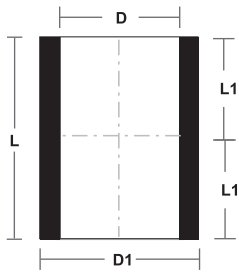
PRODUCT CODE	OUTER DIAMETER (mm)	MIN. WALL THICKNESS (mm)	INTERNAL DIAMETER (mm)
PR/020-20-4S	20	3.4	13.2
PR/025-20-4S	25	4.2	16.6
PR/032-20-4S	32	5.4	21.2
PR/040-20-4S	40	6.7	26.6
PR/050-20-4S	50	8.3	33.4
PR/063-20-4S	63	10.5	42.0
PR/075-20-4S	75	12.5	50.0
PR/090-20-4S	90	15.0	60.0
PR/110-20-4S	110	18.3	73.4
PR/160-20-4S	160	26.6	107.4



PP-R Pipe
4m per Length
PN20 (S 2.5)

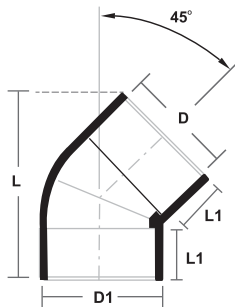
PP-R FITTINGS SPECIFICATION

SOCKET



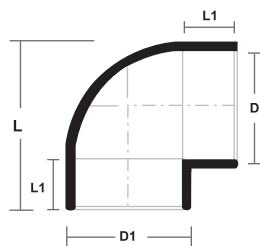
Code No	Size (mm)	L	L1	D	D1
FR/DES-020	20	33.6	16.9	19.3	29.2
FR/DES-025	25	38.0	17.0	23.9	33.7
FR/DES-032	32	43.2	20.0	31.0	42.9
FR/DES-040	40	47.3	21.8	38.2	54.8
FR/DES-050	50	69.8	25.9	48.7	52.7
FR/DES-063	63	88.5	29.7	61.1	62.3
FR/DES-075	75	102.2	31.3	71.9	67.4
FR/DES-090	90	122.0	34.2	87.8	73.9
FR/DES-110	110	149.2	39.3	107.4	84.2

ELBOW 45°



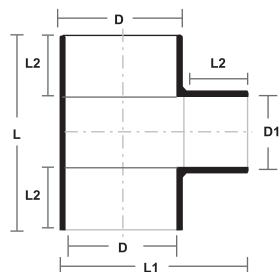
Code No	Size (mm)	L	L1	D	D1
FR/E45-020	20	48.1	17.0	18.7	28.8
FR/E45-025	25	55.5	18.0	23.4	33.7
FR/E45-032	32	66.5	20.2	30.4	42.6
FR/E45-040	40	78.8	22.2	38.0	54.7
FR/E45-050	50	94.8	25.4	48.0	70.0
FR/E45-063	63	115.5	29.4	60.0	87.7
FR/E45-075	75	130.3	31.4	72.5	102.7
FR/E45-090	90	155.2	34.3	86.8	122.4
FR/E45-100	110	175.8	42.3	106.4	145.0

ELBOW 90°



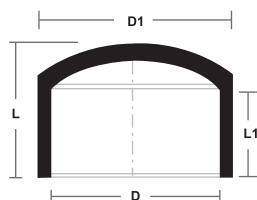
Code No	Size (mm)	L	L1	D	D1
FR/EE-020	20	41.3	17.0	18.9	28.8
FR/EE-025	25	47.6	18.2	23.5	33.6
FR/EE-032	32	58.9	20.2	30.6	43.0
FR/EE-040	40	70.7	22.1	37.7	54.9
FR/EE-050	50	86.8	25.3	48.2	69.5
FR/EE-063	63	104.0	29.8	60.6	87.9
FR/EE-075	75	121.5	31.8	72.4	101.5
FR/EE-090	90	144.4	34.8	87.2	123.2
FR/EE-110	110	166.1	39.4	108.1	148.2

EQUAL TEE



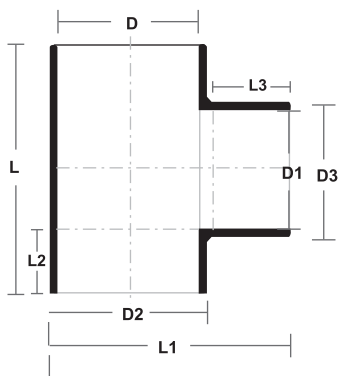
Code No	Size (mm)	L	L1	L2	D	D1
FR/ET-020	20	55.0	42.0	16.8	19.1	29.2
FR/ET-025	25	64.2	48.8	18.7	23.8	33.9
FR/ET-032	32	77.1	59.8	20.1	30.6	43.1
FR/ET-040	40	86.9	70.1	23.0	38.2	55.4
FR/ET-050	50	104.8	87.6	25.7	48.8	70.0
FR/ET-063	63	126.1	106.1	29.9	60.8	88.2
FR/ET-075	75	142.4	119.5	32.1	72.3	98.6
FR/ET-090	90	163.8	141.8	35.1	86.7	123.6
FR/ET-100	110	194.3	168.2	42.8	105.7	145.8

END CAP



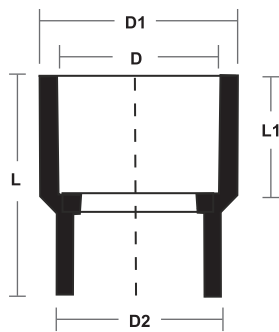
Code No	Size (mm)	L	L1	D	D1
FR/EC-020	20	23.5	16.4	19.1	27.4
FR/EC-025	25	24.8	18.3	23.9	34.8
FR/EC-032	32	25.8	22.1	30.8	43.2
FR/EC-040	40	31.5	22.7	37.8	53.2
FR/EC-050	50	39.5	26.4	48.3	66.8
FR/EC-063	63	42.2	30.5	61.5	84.2

REDUCING TEE



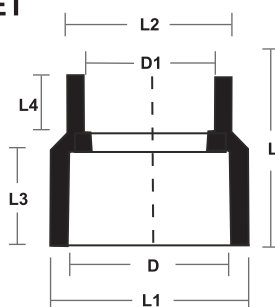
Code No	Size (mm)	L	L1	L2	L3	D	D1	D2	D3
FR/RT-025-20	25 x 20	64.3	49.0	17.9	15.9	23.8	19.1	34.1	29.3
FR/RT-032-20	32 x 20	78.6	59.1	20.1	16.3	31.0	19.3	44.8	29.3
FR/RT-032-25	32 x 25	78.1	61.4	20.2	18.8	30.7	23.8	44.5	34.6
FR/RT-040-20	40 x 20	89.3	70.3	22.5	16.1	38.9	19.2	55.0	29.4
FR/RT-040-25	40 x 25	89.5	71.3	22.1	18.4	38.5	23.4	55.1	34.5
FR/RT-040-32	40 x 32	89.1	71.2	22.1	20.5	38.6	31.0	55.2	43.3
FR/RT-050-20	50 x 20	106.1	87.2	25.0	16.5	48.4	19.0	70.2	24.6
FR/RT-050-25	50 x 25	106.6	85.8	25.3	18.5	48.4	23.4	70.5	34.7
FR/RT-050-32	50 x 32	105.6	86.1	24.9	20.3	48.4	30.3	69.8	43.7
FR/RT-050-40	50 x 40	105.9	85.3	24.9	22.4	48.2	38.5	69.9	55.4
FR/RT-063-25	63 x 25	128.4	105.9	29.2	18.6	60.7	23.7	88.1	34.5
FR/RB-063-32	63 x 32	128.5	106.3	32.6	21.1	60.7	31.0	88.3	43.5
FR/RT-063-40	63 x 40	128.3	106.2	29.7	22.6	60.3	38.1	88.5	55.8
FR/RT-063-50	63 x 50	128.5	106.1	29.1	25.3	60.9	48.3	88.2	70.4
FR/RT-075-25	75 x 25	141.8	121.2	34.1	18.4	73.9	24.1	102.8	34.6
FR/TB-075-32	75 x 32	141.6	119.3	32.6	20.6	72.3	30.6	102.5	44.9
FR/RT-075-40	75 x 40	142.2	120.8	34.1	23.0	72.6	38.5	108.8	56.1
FR/RT-075-50	75 x 50	142.1	120.6	32.5	25.9	72.4	48.4	103.4	70.4
FR/RT-075-63	75 x 63	141.5	120.0	32.3	29.5	72.5	60.8	102.4	88.7
FR/RT-090-32	90 x 32	137.4	134.9	35.4	20.3	88.7	31.3	119.8	44.3
FR/RT-090-40	90 x 40	138.4	135.3	35.2	22.5	86.7	39.2	118.7	55.4
FR/RT-090-50	90 x 50	138.0	136.3	35.8	27.3	86.1	48.4	119.7	69.8
FR/RT-090-63	90 x 63	138.1	136.4	35.2	29.6	88.5	61.3	120.7	83.0
FR/RT-110-50	110 x 50	149.7	156.6	41.9	26.8	108.0	49.3	144.8	69.4
FR/RT-110-63	110 x 63	150.4	159.4	50.0	31.5	108.7	62.2	146.0	83.2

REDUCING BUSH



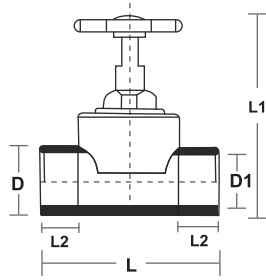
Code No	Size (mm)	L	L1	D	D1	D2
FR/RB-025-20	25 x 20	38.0	16.0	19.1	29.0	29.3
FR/RB-032-20	32 x 20	38.9	15.9	19.2	28.8	31.9
FR/RB-032-25	32 x 25	42.7	18.1	24.0	34.0	32.2
FR/RB-040-20	40 x 20	43.4	16.8	19.2	29.0	40.1
FR/RB-040-25	40 x 25	43.7	18.2	23.9	34.4	40.3
FR/RB-040-32	40 x 32	49.8	21.1	30.8	43.1	40.1
FR/RB-050-20	50 x 20	50.1	16.3	19.1	28.8	50.2
FR/RB-050-25	50 x 25	49.8	18.4	24.0	34.2	50.3
FR/RB-050-32	50 x 32	49.7	20.5	30.4	43.0	50.5
FR/RB-050-40	50 x 40	57.7	22.3	38.7	55.5	50.6
FR/RB-063-20	63 x 20	63.5	16.1	19.2	29.4	63.2
FR/RB-063-25	63 x 25	62.5	18.2	23.9	33.5	62.8
FR/RB-063-32	63 x 32	58.7	24.9	30.3	43.4	63.6
FR/RB-063-40	63 x 40	54.9	27.0	38.2	55.1	63.9
FR/RB-063-50	63 x 50	63.7	24.9	47.9	69.9	63.1

REDUCING SOCKET



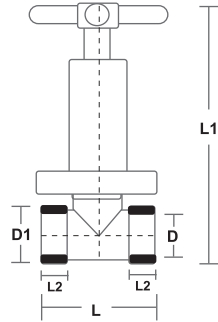
Code No	Size (mm)	L	L1	L2	L3	L4	D	D1
FR/RS-075-63	75 x 63	64.1	101.5	86.5	31.0	29.1	72.8	61.7
FR/RS-090-63	90 x 63	65.3	122.4	87.2	33.6	29.4	88.9	61.7
FR/RS-090-75	90 x 75	69.2	122.4	102.1	33.6	31.2	88.9	73.6
FR/RS-110-63	110 x 63	77.8	145.9	84.2	41.5	29.7	107.1	61.4
FR/RS-110-75	110 x 75	80.2	145.9	101.5	41.5	31.5	107.1	72.5
FR/RS-110-90	110 x 90	84.4	145.9	119.7	41.5	35.3	107.1	87.2

STOP VALVE



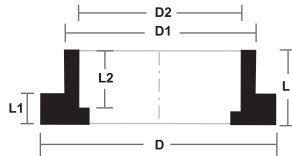
Code No	Size (mm)	L	L1	L2	D	D1
FR/SV-020	20	68.0	74.8	16.1	27.2	19.4
FR/SV-025	25	76.2	84.5	18.3	34.1	24.5
FR/SV-032	32	82.2	88.2	20.24	43.1	31.5

CHROME STOP VALVE



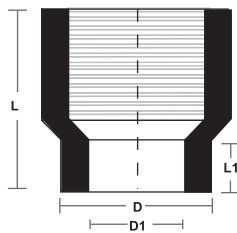
Code No	Size (mm)	L	L1	L2	D	D1
FR/CSV-020	20	67.9	125.6	16.4	19.2	27.6
FR/CSV-025	25	76.8	133.5	18.2	24.9	34.7
FR/CSV-032	32	83.2	138.1	20.3	32.0	43.7

FLANGE ADAPTOR



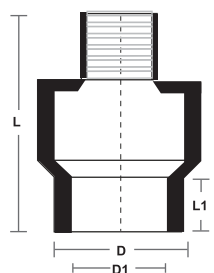
Code No	Size (mm)	L	L1	L2	D	D1	D2
FR/FADT-040	40	27.7	11.9	21.3	62.2	50.0	38.6
FR/FADT-050	50	30.9	12.1	25.1	74.4	61.6	49.8
FR/FADT-063	63	34.6	14.1	30.0	91.3	76.4	61.5
FR/FADT-075	75	36.8	16.3	30.3	109.9	91.1	73.5
FR/FADT-090	90	39.7	17.9	33.1	128.8	108.0	87.5
FR/FADT-110	110	45.3	18.3	38.2	152.2	135.8	108.8

THREADED FEMALE COUPLING



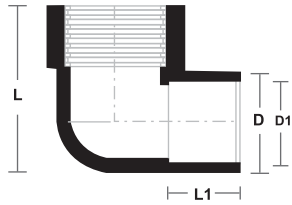
Code No	Size (mm)	L	L1	D	D1
FR/TFC-020-1/2	20 - (1/2)	41.9	17.1	28.8	20.0
FR/TFC-020-3/4	20 - (3/4)	42.5	17.2	34.2	19.9
FR/TFC-025-1/2	25 - (1/2)	42.4	17.4	34.5	25.0
FR/TFC-025-3/4	25 - (3/4)	42.1	17.5	34.3	25.0
FR/TFC-032-3/4	32 - (3/4)	44.3	19.3	43.1	31.8
FR/TFC-032-1	32 - (1)	56.1	20.1	43.6	32.0
FR/TFC-040-1 1/4	40 - (1 1/4)	66.6	23.8	53.7	39.7
FR/TFC-050-1 1/2	50 - (1 1/2)	69.2	25.3	67.2	50.0
FR/TFC-063-2	63 - (2)	78.3	29.4	83.9	61.9

THREADED MALE COUPLING



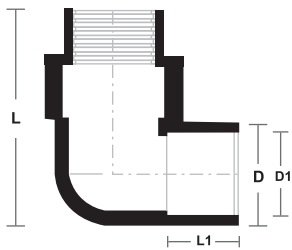
Code No	Size (mm)	L	L1	D	D1
FR/TMC-020-1/2	20 - (1/2)	56.6	17.2	28.7	19.9
FR/TMC-020-3/4	20 - (3/4)	57.9	17.2	34.3	19.9
FR/TMC-025-1/2	25 - (1/2)	57.1	17.5	34.4	24.9
FR/TMC-025-3/4	25 - (3/4)	58.3	17.5	34.5	25.0
FR/TMC-032-3/4	32 - (3/4)	60.3	19.3	42.8	32.0
FR/TMC-032-1	32 - (1)	75.4	20.1	43.7	31.9
FR/TMC-040-1 1/4	40 - (1 1/4)	91.3	24.0	55.5	39.7
FR/TMC-050-1 1/2	50 - (1 1/2)	92.3	25.3	69.4	49.0
FR/TMC-063-2	63 - (2)	107.2	29.4	86.7	61.9

THREADED FEMALE ELBOW 90°



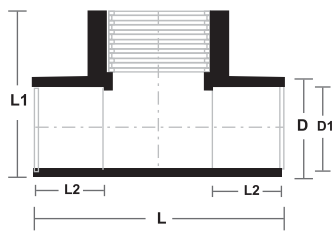
Code No	Size (mm)	L	L1	D	D1
FR/TFE-020-1/2	20 - (1/2)	50.6	16.1	30.1	20.0
FR/TFE-020-3/4	20 - (3/4)	50.4	16.1	30.3	20.0
FR/TFE-025-1/2	25 - (1/2)	57.6	18.2	34.6	24.9
FR/TFE-025-3/4	25 - (3/4)	57.2	18.3	34.6	24.9
FR/TFE-032-3/4	32 - (3/4)	64.7	20.2	44.6	31.8
FR/TFE-032-1	32 - (1)	78.1	20.3	44.7	31.8

THREADED MALE ELBOW 90°



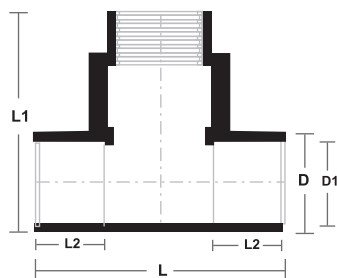
Code No	Size (mm)	L	L1	D	D1
FR/TME-020-1/2	20 - (1/2)	65.5	16.1	30.2	20.0
FR/TME-020-3/4	20 - (3/4)	66.3	16.1	30.1	19.9
FR/TME-025-1/2	25 - (1/2)	72.6	18.2	34.6	24.9
FR/TME-025-3/4	25 - (3/4)	73.0	18.2	34.5	25.0
FR/TME-032-3/4	32 - (3/4)	80.9	20.2	44.8	31.9
FR/TME-032-1	32 - (1)	97.4	20.2	44.5	31.9

THREADED FEMALE TEE



Code No	Size (mm)	L	L1	L2	D	D1
FR/TFT-020-1/2	20 - (1/2)	55.0	50.8	16.1	30.9	20.0
FR/TFT-025-1/2	25 - (1/2)	64.2	57.1	18.3	34.5	24.9
FR/TFT-025-3/4	25 - (3/4)	64.2	56.4	18.2	34.6	25.0
FR/TFT-032-3/4	32 - (3/4)	77.2	64.5	20.2	44.4	31.9
FR/TFT-032-1	32 - (1)	76.7	78.2	20.3	44.4	32.0

THREADED MALE TEE



Code No	Size (mm)	L	L1	L2	D	D1
FR/TMT-020-1/2	20 - (1/2)	55.0	65.1	16.1	31.0	19.9
FR/TMT-025-1/2	25 - (1/2)	64.2	72.9	18.3	34.5	24.9
FR/TMT-025-3/4	25 - (3/4)	64.2	73.3	18.2	34.6	24.9
FR/TMT-032-3/4	32 - (3/4)	77.2	81.8	20.3	44.4	32.0
FR/TMT-032-1	32 - (1)	76.7	96.3	20.2	44.4	31.9

FUSION WELDING SET



Code No	Size (mm)
TI/SFW-020-063	20 - 63
TI/SFW-075-110	75 - 110

Socket Fusion Joining Method



Step 1

Trim your pipe to length with a smooth, clean cut.

Step 2

Mark the welding depth on the joining end of the pipe. Use a pencil to make the corresponding mark on the pipe.

Step 3

Ensure that indicator light on the welding tool signals that the tool is (260°C) for welding.

Step 4

Push the pipe and fitting straight together immediately. As soon as you remove them from the fusion tool, insert the pipe straight into the fitting until it reaches the depth line marked on it.

Step 5

When the welding heating time is reached, remove both pipe and fitting together, again without twisting or turning while pulling out of the welding adaptor. It is possible to adjust the joints for more than 5 degrees during this time. Joint is now completed.

Socket Fusion Heating Time Table

Pipe Diameter (mm)	Welding Depth (mm)	Heating Time (sec.)	Welding Time (sec.)	Cooling Time (mm)
20	14.0	5	4	2
25	15.0	7	4	2
32	16.5	8	6	4
40	18.0	12	6	4
50	20.0	18	6	4
63	24.0	24	8	8
75	26.0	30	8	8
90	29.0	40	8	8
110	32.5	50	10	8

Note : Heating time starts when both pipe and fitting are pushed into correct depth. Welding time begins when joints are connected. Cooling time is the time taken for the joint to be completely cured. Never reduce cooling time by pouring water or other means.



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