GREENFIT®

PPR Plumbing Systems for Extreme Temperature

Greenfit PPR plumbing systems has superior physical characteristics of working temperatures of upto 95^{0}C along with excellent chemical resistance as well as providing a definite solution to oxidation and calcification. PPR is an ideal material for hot & cold water plumbing systems in buildings & industrial piping installations ensuring high quality performance.

ORIGINAL

100% Virgin PPRC used in manufacturing of the pipes & fittings

ZERO DEFECT

*ZERO DEFECT MANUFACTURING PROCESS

Pipes as per IS:15801

Fittings as per DIN 16962

EXTREMELY EFFICIENT IN EXTREME TEMPERATURES.

SPECIFICATIONS

	Fittings	Pipes
Material	Polypropylene - Random Copolymer (PP-R)	Polypropylene - Random Copolymer (PP-R)
Colour	Green	Single layer pipes available in green & triple layer pipe have outer layer in green colour
Reference Standards	DIN:16962	IS:15801-2008
Working temperature	20^0 C - 95^0 C	Up to - 95^0 C
Working pressure (kg/cm^2)	20 & 25	10, 16 & 20
End Connections	Poly-fusion welding. For transition joints, fittings with threaded metal inserts are available.	Poly-fusion welding.

PRODUCT NAME / RANGE

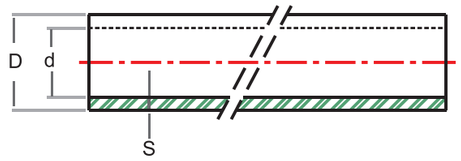
These pipes are used for conveying hot and cold water/fluids/chemicals/ compressed air in various plumbing installations such as,

1. Single layer (Green Colour) GREENFIT® PP-R pipes for indoor installations.
2. 3 Layer GREENFIT®PP-R pipes for outdoor installations.
   – Outer layer (Green Colour) GREENFIT®PP-R is UV resistant, which makes the pipes suitable for usage under direct sunlight.
   – Inner layer (White Colour) GREENFIT®PP-R is antimicrobial which adds to safety against inside bacterial growth.
   – Middle layer (Off White Colour) GREENFIT®PP-R ensures the required strength of the pipes.
3. 3 Layer GREENFIT®PP-R thermax pipe has a specially formulated middle layer to reduce linear expansion of pipe due to temperature variance and to improve impact strength

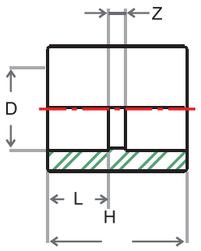
PIPES

(All dimensions are in mm)

Size	D	SDR 11 (PN-10)		SDR 7.4 (PN-16)		SDR 6 (PN-20)	
(mm)		d	S	d	S	d	S
20	20.00	16.20	1.90	14.40	2.80	13.20	3.40
25	25.00	20.40	2.30	18.00	3.50	16.60	4.20
32	32.00	26.20	2.90	23.20	4.40	21.20	5.40
40	40.00	32.60	3.70	29.00	5.50	26.60	6.70
50	50.00	40.80	4.60	36.20	6.90	33.40	8.30
63	63.00	51.40	5.80	45.80	8.60	42.00	10.50
75	75.00	61.40	6.80	54.40	10.30	50.00	12.50
90	90.00	73.60	8.20	65.40	12.30	60.00	15.00
110	110.0	90.00	10.00	79.80	15.10	73.40	18.30
160	160.0	130.80	14.60	116.20	21.90	106.80	26.60

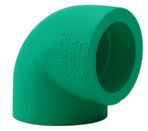


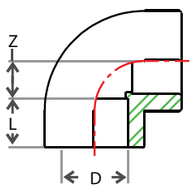
COUPLER



Size	D	L	Z	H
20	19.50	14.50	4.00	33.00
25	24.50	16.00	4.00	36.00
32	31.50	18.00	4.00	40.00
40	39.45	20.50	4.00	45.00
50	49.45	23.50	4.00	51.00
63	62.50	27.50	4.00	59.00
75	74.90	30.00	4.00	64.00
90	89.90	33.00	5.00	71.00
110	110.00	37.00	5.00	79.00
160	Details available on request			

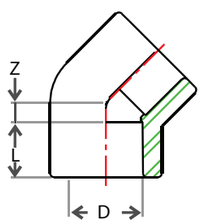
ELBOW 90^0





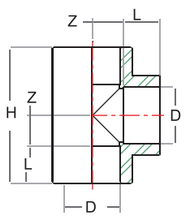
Size	D	L	Z
20	19.50	14.50	11.00
25	24.50	16.00	13.50
32	31.50	18.00	17.00
40	39.45	20.50	21.00
50	49.45	23.50	26.50
63	62.50	27.50	32.50
75	74.90	30.00	41.00
90	89.90	33.00	48.50
110	110.00	37.00	58.00
160	Details available on request		

ELBOW 45^0



Size	D	L	Z
20	19.50	14.50	5.00
25	24.50	16.00	6.00
32	31.50	18.00	7.50
40	39.45	20.50	9.50
50	49.45	23.50	11.50
63	62.50	27.50	14.00
75	Details		
90	available		
110	on request		
160			

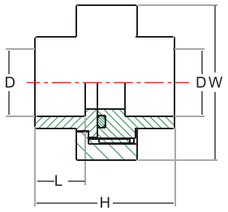
EQUAL TEE



Size	D	L	Z	H
20	19.50	14.50	11.00	51.00
25	24.50	16.00	13.50	59.00
32	31.50	18.00	17.00	70.00
40	39.45	20.50	21.00	83.00
50	49.45	23.50	26.50	100.00
63	62.50	27.50	32.50	120.00
75	74.90	30.00	38.50	137.00
90	89.90	33.00	46.00	158.00
110	110.00	37.00	56.00	186.00
160	Details available on request			

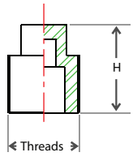
All Dimensions are in 'mm' unless specifically mentioned.

PLAIN UNION



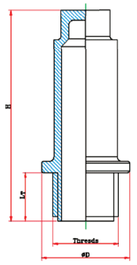
Size	D	L	H	W
20	19.50	14.50	47.00	48.00
25	24.50	16.00	50.00	55.00
32	31.50	18.00	49.50	67.50
40	Details			
50	available			
63	on request			

END PLUG
EXTENDED END PLUG



END PLUG

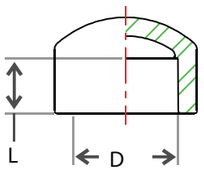
Size	Threads	H
20	1/2″	22.50
25	3/4″	25.00
32	1″	28.00



EXTENDED END PLUG

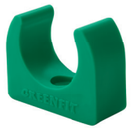
Size	D	Threads	L_T	H
20	27.00	1/2″	15.00	65.00
25	35.00	3/4″	16.00	53.00

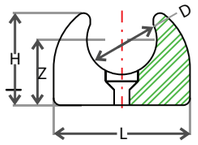
END CAP



Size	D	L
20	19.50	14.50
25	24.50	16.00
32	31.50	18.00
40	39.45	20.50
50	49.45	23.50
63	62.50	27.50
75	Details	
90	available	
110	on request	
160		

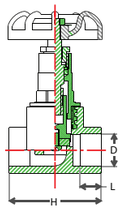
PIPE CLAMP





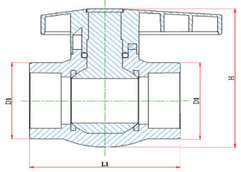
Size	D	H	L	Z
20	20.50	27.00	40.00	19.25
25	25.50	31.00	39.00	21.75
32	32.50	37.00	48.00	25.25

GATE VALVE



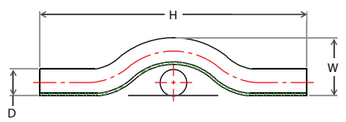
Size	D	L	H
20	19.50	14.50	61.00
25	24.50	16.00	70.00
32	31.50	18.00	85.00
40	39.50	20.50	95.00
50	49.50	23.50	114.00
63	62.50	27.50	133.50

BALL VALVE
(COLD)



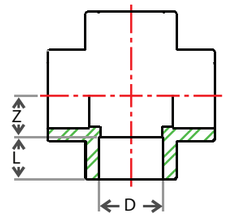
Size	D1	L1	H
20			
25	Details		
32	available		
40	on request		
50			
63			

CROSSOVER



Size	D	W	H
20	20.00	55.00	390.00
25	25.00	56.00	400.00
32	32.00	72.00	450.00

FOUR WAY TEE



Size	D	L	Z
20	19.50	14.50	11.00
25	24.50	16.00	13.50
32	31.50	18.00	17.00

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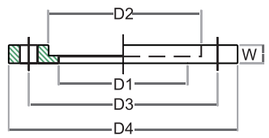
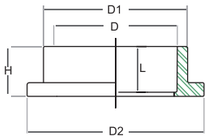
FLANGE



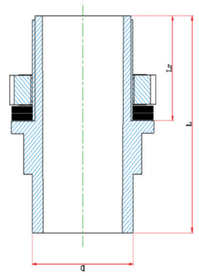
Size	D1	D2	D3	D4	W
32					
40					
50	Details				
63	available				
75	on request				
90					
110					
160					

FLANGE CORE



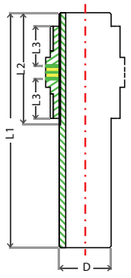
Size	D	D1	D2	L	H
32					
40					
50	Details				
63	available				
75	on request				
90					
110					
160					

TANK CONNECTOR
SHORT



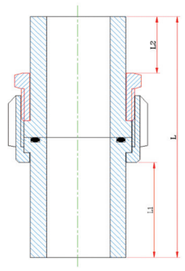
Size	D	L	L_T
25	25.00	74.50	35.70
32	32.00	84.50	40.00
40	40.00	91.04	44.00
50	50.00	99.70	48.40
63	63.00	102.00	49.50

TANK CONNECTOR



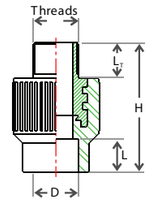
Size	D	L1	L2	L3
20	20.00	140.00	66.00	20.00
25	25.00	146.00	72.00	22.00
32	32.00	150.00	76.00	25.00
40	40.00	166.00	91.00	29.00
50	50.00	180.00	105.00	35.00
63	63.00	198.00	123.00	42.00

METAL UNION



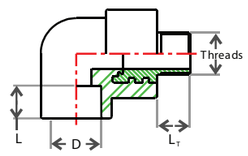
Size	L	L1	L2
40mm	103.20	40.50	23.50
50mm	125.70	49.30	29.80

MALE THREADED
ADAPTOR (INSERT TYPE)



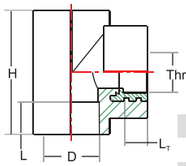
Size	D	Threads	L	L_T	H
20 X 1/2″	19.50	1/2″	14.50	15.00	54.50
20 X 3/4″	19.50	3/4″	14.50	17.00	58.00
25 X 1/2″	24.50	1/2″	16.00	15.00	56.00
25 X 3/4″	24.50	3/4″	16.00	17.00	58.00
32 X 3/4″	31.50	3/4″	18.00	17.00	60.00
32 X 1″	31.50	1″	18.00	19.00	62.00
40 X 1 1/4″	39.45	1 1/4″	20.50	22.00	72.00
40 X 1 1/2″	39.45	1 1/2″	20.50	22.00	72.00
50 X 1 1/2″	49.45	1 1/2″	23.50	22.00	75.00
63 X 2″	62.50	2″	27.50	26.30	88.30

MALE THREADED
ELBOW (INSERT TYPE)



Size	D	Threads	L	L_T
20 X 1/2″	19.50	1/2″	14.50	15.00
20 X 3/4″	19.50	3/4″	14.50	17.00
25 X 1/2″	24.50	1/2″	16.00	15.00
25 X 3/4″	24.50	3/4″	16.00	17.00
32 X 1/2″	31.50	1/2″	18.00	15.00
32 X 1″	31.50	1″	18.00	19.00
40 X 1 1/4″	39.45	1 1/4″	20.50	22.00
40 X 1 1/2″	39.45	1 1/2″	20.50	22.00

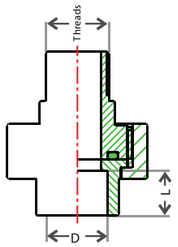
MALE THREADED TEE
(INSERT TYPE)



Size	D	Threads	L	L_T	H
20 X 1/2″	19.50	1/2″	14.50	15.00	51.00
25 X 1/2″	24.50	1/2″	16.00	15.00	59.00
25 X 3/4″	24.50	3/4″	16.00	17.00	59.00
32 X 1/2″	31.50	1/2″	18.00	15.00	70.00
32 X 3/4″	31.50	3/4″	18.00	17.00	70.00
32 X 1″	31.50	1″	18.00	19.00	70.00

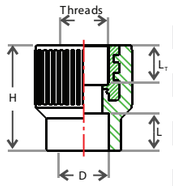
All Dimensions are in 'mm' unless specifically mentioned.

MALE THREADED UNION



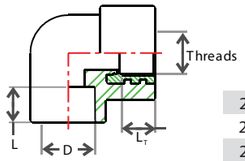
Size	D	Threads	L
20 X 1/2"	19.50	1/2"	14.50
25 X 3/4"	24.50	3/4"	16.00
32 X 1"	31.50	1"	18.00
40 X 1 1/4"	Details		
50 X 1 1/2"	available		
63 X 2"	on request		

FEMALE THREADED ADAPTOR



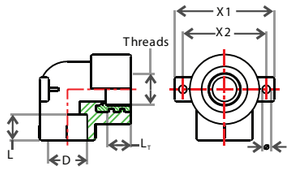
Size	D	Threads	L	L_T	H
20 X 1/2"	19.50	1/2"	14.50	15.00	39.50
20 X 3/4"	19.50	3/4"	14.50	16.30	41.00
25 X 1/2"	24.50	1/2"	16.00	15.00	41.00
25 X 3/4"	24.50	3/4"	16.00	16.30	41.00
32 X 3/4"	31.50	3/4"	18.00	16.30	43.00
32 X 1"	31.50	1"	18.00	19.00	43.00
40 X 1 1/4"	39.50	1 1/4"	20.50	25.00	50.00
50 X 1 1/2"	49.45	1 1/2"	23.50	21.40	53.00
63 X 2"	62.50	2"	27.50	25.70	62.00

FEMALE THREADED ELBOW (INSERT TYPE)



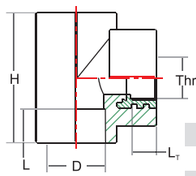
Size	D	Threads	L	L_T
20 X 1/2"	19.50	1/2"	14.50	15.00
20 X 3/4"	19.50	3/4"	14.50	16.30
25 X 1/2"	24.50	1/2"	16.00	15.00
25 X 3/4"	24.50	3/4"	16.00	16.30
32 X 1/2"	31.50	1/2"	18.00	15.00
32 X 1"	31.50	1"	18.00	19.00
40 X 1 1/4"	39.45	1 1/4"	20.50	21.40

FEMALE THREADED ELBOW WITH SUPPORT



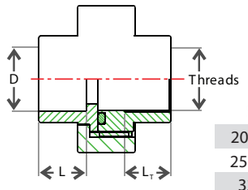
Size	D1	Threads	L	L_T	X1	X2	Ø
20 X 1/2"	19.50	1/2"	14.50	15.00	60.00	50.00	5.00
25 X 1/2"	24.50	1/2"	16.00	15.00	64.00	54.00	5.00
25 X 3/4"	24.50	3/4"	16.00	16.30	64.00	54.00	5.00

FEMALE THREADED TEE (INSERT TYPE)



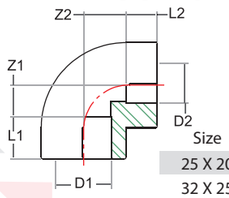
Size	D	Threads	L	L_T	H
20 X 1/2"	19.50	1/2"	14.50	15.00	51.00
25 X 1/2"	24.50	1/2"	16.00	15.00	59.00
25 X 3/4"	24.50	3/4"	16.00	16.30	59.00
32 X 1/2"	31.50	1/2"	18.00	15.00	70.00
32 X 3/4"	31.50	3/4"	18.00	16.30	70.00
32 X 1"	31.50	1"	18.00	19.00	70.00

FEMALE THREADED UNION (INSERT TYPE)



Size	D	Threads	L	L_T
20 X 1/2"	19.50	1/2"	14.50	15.00
25 X 3/4"	24.50	3/4"	16.00	16.30
32 X 1"	31.50	1"	18.00	19.00
40 X 1 1/4"	39.45	1 1/4"	20.50	21.40
50 X 1 1/2"	49.45	1 1/2"	23.50	21.40
63 X 2"	62.50	2"	27.50	25.70

REDUCING ELBOW 90⁰



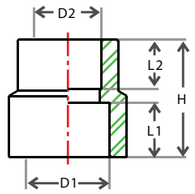
Size	D1	D2	L1	L2	Z1	Z2
25 X 20	24.50	19.50	16.00	14.50	13.50	15.00
32 X 25	31.50	24.50	18.00	16.00	17.00	19.00
32 X 20	31.50	19.50	18.00	14.50	17.00	20.50
40 X 32	39.45	31.50	20.50	18.00	21.00	20.50
40 X 25	39.45	24.50	20.50	16.00	21.00	25.50
40 X 20	39.45	19.50	20.50	14.50	21.00	20.50
63 X 40	62.50	39.45	27.50	20.50	32.50	39.50

WELDING ACCESSORIES

Size
20 - 63 mm
75 - 110 mm
160 mm

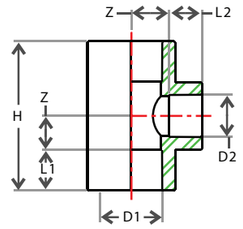
All Dimensions are in 'mm' unless specifically mentioned.

REDUCER



Size	D1	D2	L1	L2	H
25X20	24.50	19.50	16.00	14.50	34.50
32X25	31.50	24.50	18.00	16.00	38.00
32X20	31.50	19.50	18.00	14.50	36.50
40X32	39.45	31.50	20.50	18.00	42.50
40X25	39.45	24.50	20.50	16.00	40.50
40X20	39.45	19.50	20.50	14.50	39.00
50X40	49.45	39.45	23.50	20.50	48.00
50X32	49.45	31.50	23.50	18.00	45.50
50X25	49.45	24.50	23.50	16.00	43.50
50X20	49.45	19.50	23.50	14.50	42.00
63X50	62.50	49.45	27.50	23.50	59.00
63X40	62.50	39.45	27.50	20.50	56.00
63X32	62.50	31.50	27.50	18.00	54.50
63X25	62.50	24.50	27.50	16.00	51.50
63X20	62.50	19.50	27.50	14.50	51.50
75X63					
75X50					
75X40					
75X32					
90X75	Details				
90X63	available				
90X50	on request				
110X90					
110X75					
110X63					
160X110					

REDUCING TEE



Size	D1	D2	L1	L2	Z1	Z2	H
25 X 20	24.50	19.50	16.00	14.50	13.50	13.50	59.00
32 X 25	31.50	24.50	18.00	16.00	14.00	18.00	64.00
32 X 20	31.50	19.50	18.00	14.50	14.00	19.50	64.00
40 X 32	39.45	31.50	20.50	18.00	21.00	21.00	83.00
40 X 25	39.45	24.50	20.50	16.00	21.00	21.00	83.00
40 X 20	39.45	19.50	20.50	14.50	21.00	21.00	83.00
50 X 40	49.45	39.45	23.50	20.50	26.00	26.00	99.00
50 X 32	49.45	31.50	23.50	18.00	26.00	26.00	99.00
50 X 25	49.45	24.50	23.50	16.00	26.00	26.00	99.00
50 X 20	49.45	19.50	23.50	14.50	26.00	26.00	99.00
63 X 50	62.50	49.45	27.50	23.50	32.50	32.50	120.0
63 X 40	62.50	39.45	27.50	20.50	32.50	32.50	120.0
63 X 32	62.50	31.50	27.50	18.00	32.50	32.50	120.0
63 X 25	62.50	24.50	27.50	16.00	32.50	32.50	120.0
63 X 20	62.50	19.50	27.50	14.50	32.50	32.50	120.0
75 X 63	Details available on request						
75 X 50	Details available on request						
75 X 40	74.90	39.50	30.00	20.50	38.50	38.50	137.0
75 X 32	Details available on request						
90 X 75	Details available on request						
90 X 63	89.90	62.50	33.00	27.50	46.00	46.00	158.0
90 X 50	Details available on request						
90 X 40	89.90	39.50	33.00	20.50	46.00	46.00	158.0
110 X 90	Details available on request						
110 X 75	Details available on request						
110 X 63	110.0	62.50	37.00	27.50	56.00	56.00	186.0
110 X 50	Details available on request						
160 X 110	Details available on request						

REPAIR BAR

Size
7 X 11 mm

REPAIR SECTION

Size
7 X 11 mm

All Dimensions are in 'mm' unless specifically mentioned.

WELDING KIT

Size
20 - 63 mm
75 - 110 mm

CUTTER

Size
20 - 40 mm
50 - 110 mm

LARGE DIAMETER WELDING DEVICE

Size
75 - 160 mm

QUALITY TESTS

PPR Pipes		
Test	**Acceptance Test**	**Type Test**
Visual Appearance	✓	
Colour	✓	
Dimensions	✓	
Weight	✓	
Hammer Test	✓	
Internal Long term Hydrostatic Pressure Test	✓	
Heat Reversion	✓	
Charpy Impact Strength	✓	
Density	✓	
Melt Flow Rate	✓	
Carbon black content & dispersion (black pipes)	✓	
Opacity		✓
Fusion Compatibility		✓
Thermal Stability by hydrostatic pressure test		✓
Influence on water intended for human consumption		✓
UV Test (Effect on sunlight for black, 3 layer & thermex pipes)		✓
Water hammer test		✓
Hot & cold water test		✓

PPR Fittings		
Test	**Acceptance Test**	**Type Test**
Visual Appearance	✓	
Colour	✓	
Dimensions	✓	
Wrenching test (insert & threaded items)	✓	
Hammer Test	✓	
Internal Hydrostatic pressure test	✓	
Leakage test (insert items, extended end plug & tank connector	✓	
Water hammer test		✓
Hot & cold water test		✓
Long term Hydrostatic Pressure test		✓

PPR Valves		
Test	**Acceptance Test**	**Type Test**
Visual Appearance	✓	
Colour	✓	
Dimensions	✓	
Internal Hydrostatic pressure test	✓	
Drip proofness test	✓	
Torque wrench test	✓	
Tumbler test	✓	
Endurance test		✓
Long term Hydrostatic pressure test		✓

All Dimensions are in 'mm' unless specifically mentioned.

OUR CERTIFICATIONS

FEATURES & BENEFITS

- Better corrosion resistance.
- No scaling, can withstand higher 'pH' values.
- UV resistant three layered pipes are suitable for outdoor installations that are exposed to direct sunlight.
- Good chemical resistance, suitable for most industrial liquids.
- Heat fusion jointing results in a homogenous plastic system ensuring leak proof joints.
- Very less coefficient of friction, low-pressure drop. Extremely high flow properties reduce pumping cost.
- Very smooth bore allows higher flow velocities of fluid upon 5 m/sec.
- A long life when operated under rated temperature and pressure conditions.
- Low maintenance cost.
- Promotes hygiene by restricting bacterial growth.

APPLICATIONS

- Indoor & Outdoor installations of hot and cold water piping systems in residential, commercial & industrial buildings.
- Heating system inside building including floor, wall & radiator heating.
- Drinking water & liquid food transportation.
- Air conditioning system & compressed air supply system.
- Pharmaceuticals.
- Piping systems for transportation of aggressive fluids in industries.
- Solar water heating systems.

Extensively used in:


COMMERCIAL BUILDINGS


SOLAR WATER SYSTEM


CHEMICAL PLANTS


AIR CONDITIONING SYSTEM

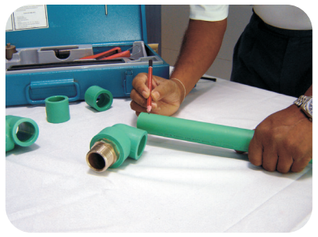
JOINTING METHODS

PROCESS:

- Fusion Welding

CUTTING:

- Cut the pipe at a right angle to its axis using burr-free cutter.
- Ensure that the pipe is free from burrs or cutting chips.
- Clean the pipe & fitting perfectly before welding.
- Mark welding depth at the end of pipe.



HEATING

- Mount the suitable dyes on the heating element of the welding machine according to the diameter of pipe and fitting.
- Connect the welding machine to 220 volts A.C. power supply.
- Select 260^{0}C temperature on the welding machine thermostat.
- Wait until the required working temperature is reached.
- Insert the pipe and the fitting in the dyes by exerting light pressure.

WELDING

- After heating, quickly insert the pipe into the fitting by exerting light pressure.
- Any misalignment should be corrected immediately after insertion to avoid any stress in the weld.
- Allow the joint to cool as per the cooling time given in table.

DON'Ts

CUTTING
Do not cut slant/unevenly.

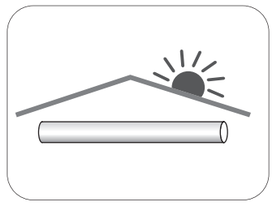
DEBURRING AND RIDGE REMOVAL
Do not proceed with installation of pipe without deburring as the burr when heated will create an extra blockage inside the pipe.

CLEANING & MARKING
Do not proceed without cleaning as it will create problems during welding due to the presence of dirt or mud.

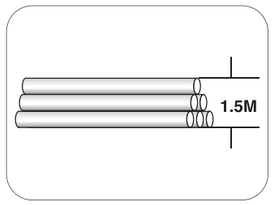
WELDING JOINT
1) Do not set the temperature of the heater higher or lower than 260°C
2) Do not initiate the jointing process without gloves.
3) Misalignment of jointing to be corrected immediately before cooling, so as to avoid stress in the weld.

DOs & DON'Ts

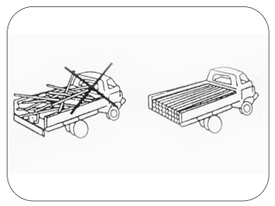
STORAGE
Although GREENFIT® PP-R Pipe system material is stabilized for use at elevated temperatures do not expose the pipes & fittings to direct sunlight.



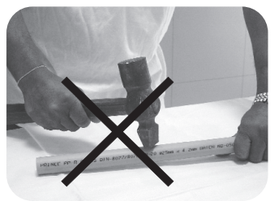
STORAGE
GREENFIT® PP-R Pipe storage height should not be more than 1.5 meter.



TRANSPORTATION
During transportation, GREENFIT® PP-R pipes should be loaded in a proper manner, otherwise pipes may get deformed.

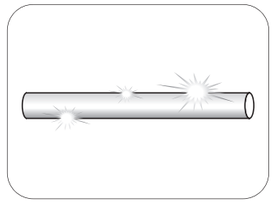


HANDLING
The GREENFIT® PP-R Pipe system should be protected from impact of hard and sharp objects.

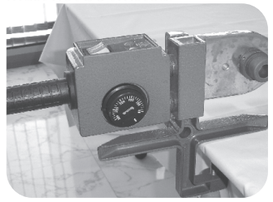


DOs & DON'Ts

PREPARATION FOR WELDING
Before welding/jointing, clean the surface of GREENFIT® PP-R Pipes & Fittings with a clean piece of cloth and then start welding.

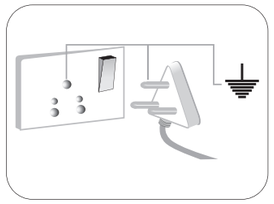


HEATING
While welding of GREENFIT® PP-R Pipes and fittings check that the thermostat of welding machine and dyes have reached correct temperature (260°C). While welding, the pipe must not be twisted.

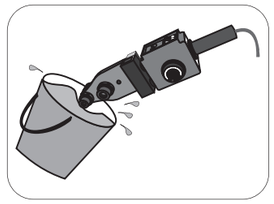


WELDING
Avoid air droughts during welding to avoid stress in the welds.

SAFE WELDING
Welding machines shall be earthed properly during use.

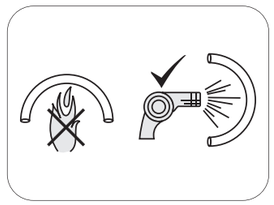


SAFE WELDING
Do not cool welding machine in water.

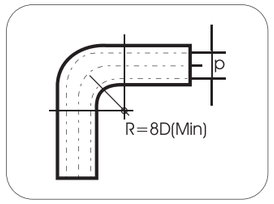


THREAD JOINT
Do not over tighten threaded fittings & valves.

BENDING
Do not apply direct flame to fabricate bends or crossover pipes, as the direct exposure to fire may cause damage to the GREENFIT® PP-R pipes. Use only hot air blowing equipment at 140°C. (Cross overs are readily available.)

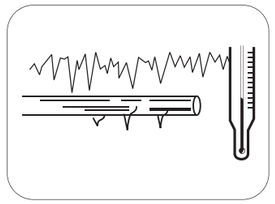


BENDING
While bending the pipe, the bending radius shall be more than 8 times the diameter of the pipe.



INSTALLATION AT LOWER TEMPERATURE

At sub zero temperatures (0^0C & below) GREENFIT® PP-R Pipe system tends to break under impact. Therefore, installation at low temperatures should be done with care, and the pipe lines shall be insulated.



OUTDOOR INSTALLATION

Use 3 layered pipes for outdoor application.