



PRINCE[®]
PIPING SYSTEMS



PEFitAQUA[™]
BRINGS WATER
TO LIFE

Manufacturing Units

State-of-the-art manufacturing units producing piping systems

Dadra
(Silvassa) Year of Est. 2000



Athal
(Silvassa) Year of Est. 1995



Kolhapur
(Maharashtra) Year of Est. 2012



Haridwar
(Uttarakhand) Year of Est. 2008



Chennai
(Tamil Nadu) Year of Est. 2012



Jaipur
(Rajasthan) Year of Est. 2019



Hyderabad
(Telangana) Year of Est. 2021



Water is a valuable resource and for us at PRINCE PIPES we are committed to ensure that the water gets distributed effectively, since every drop of water counts.

With years of experience in polymer piping Industry, Prince Pipes has maintained the highest quality standards across all product categories using Zero defect manufacturing process.

A system that nurtures and embrace the glory of water by transferring every drop to the required places. We ensure zero leakage of water to prevent wastage of this valuable resource. Now Introducing **PEFit Aqua** - HDPE PIPING SYSTEMS

PEFitTM AQUA

HDPE PIPING SYSTEMS



ABOUT PRINCE **PEFit AQUA**

Polyethylene polymer is designed to meet the most demanding operating conditions in the process of transmission of various types of liquids.

PRINCE **PEFit Aqua** is manufactured in our State of the Art Manufacturing facilities using high quality virgin raw material & is available in PE63, PE80, PE100 HDPE material.

Furthermore, they are made as per IS standard 4984:2016 using European Hi-Tech machines ensuring that the product delivered is the best in class.

PRODUCT RANGE

SIZE (MM)	MATERIAL CLASSIFICATION	WORKING PRESSURE	END CONNECTION
20mm to 315mm	PE63, PE80, PE100	2KG/CM ² to 20KG/CM ² SDR41 to SDR6	Butt Welding, Electro Fusion

Pipe



Size: 20mm to 315mm

Length: 6 meter & 12 meter

Coil



Size: 20mm To 110mm

ADVANTAGES THAT SETS US APART

PEFit Aqua piping system offers all the major advantages of polyethylene material which results in considerably lower installation and product life cycle cost when compared with traditional piping materials;



Ease of installation and excellent weldability:

Butt welding / Electro fusion jointing techniques.



Light in weight:

It is lighter than Mild steel, Stainless Steel, Concrete & Cast Iron. It is easier to handle & install



Excellent Flexibility:

The flexibility of HDPE pipe allows it to adapt to the contour of the land as well as to directional changes.



Chemical and corrosion resistance*:

HDPE pipes are corrosion resistant, do not rust, rot, or corrode.



Low friction coefficient & higher flow capacity:

Prince PEFit Aqua HDPE Pipes offer excellent flow characteristics and minimum pressure losses. Lower friction leads to energy saving in pumping of liquids. As per Hazen-William's flow co-efficient, the flow value is 150 for HDPE material



Resistance to ground movement and loads:

HDPE has low notch sensitivity, high tear strength & excellent scratch & abrasion resistance. Its resistance to environmental stress cracking is outstanding.



UV Resistance:

HDPE pipes are UV resistance.



Good weather resistance:

Excellent performance in aggressive climatic conditions having superior and low temperature resistance with antimicrobial properties.



Recyclable:

HDPE is safe for recycling since it can be homogeneous and processed.



Long Life:

50 years expected life

*Note: The chemical resistance chart can be provided on request.

FIELDS OF APPLICATIONS

Designed especially for nation building, **PEFit Aqua** can be used for:



**POTABLE WATER CITY
PIPE NETWORK**



**DRIP, SPRINKLER AND
LIFT IRRIGATION**



**INDUSTRIAL
EFFLUENTS**



**INFRASTRUCTURE
PROJECTS**



**BORE WELL APPLICATION
FOR SUBMERSIBLE PUMPS**



**MINING SECTOR FOR
HANDLING SLURRIES**

Rest assured, Prince **PEFit Aqua** piping system can be used in underground, above ground and under water piping applications.

QUALITY CONTROL & TESTING

In order to assure a high and consistent quality level, **PEFit Aqua** pipes undergo strict quality control at its every stage of realization. PRINCE PIPES & FITTINGS LTD. has a laboratory with modern testing equipment.

- Visual appearance and dimensional check
- Longitudinal reversion
- Internal pressure creep rupture test for pipes and joints
- Carbon black content and dispersion
- Melt flow rate
- Oxidation induction time
- Overall migration
- Density
- Tensile strength test for butt fusion joint
- Elongation at break
- Slow crack growth rate

JOINTING TECHNIQUES

PEFit Aqua piping system can be jointed with various following techniques

- Butt fusion technique
- Using socket fitting Socket fusion technique
- Using Electrofusion fitting technique
- Using compression fittings
- Using stub-end fitting and metal flange

POLYETHYLENE BUTT JOINTING METHOD

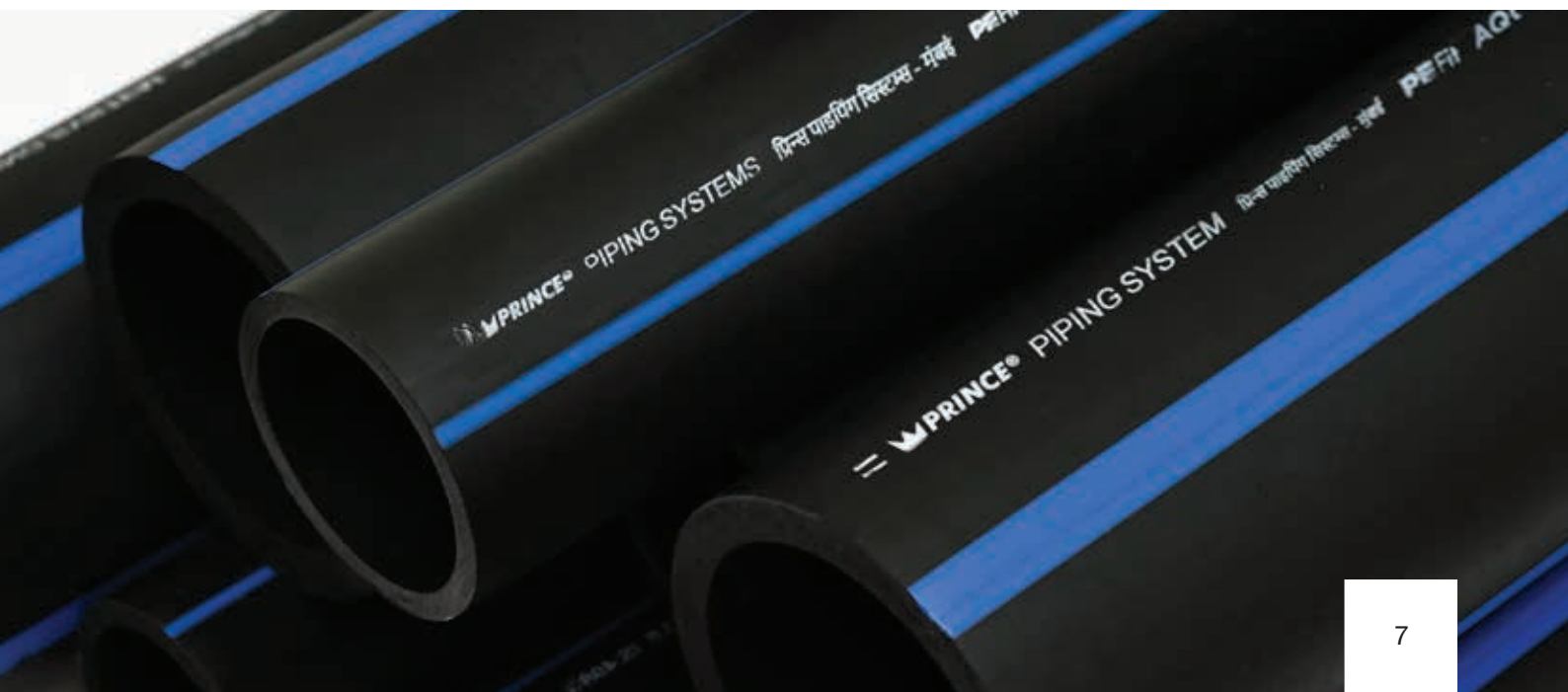
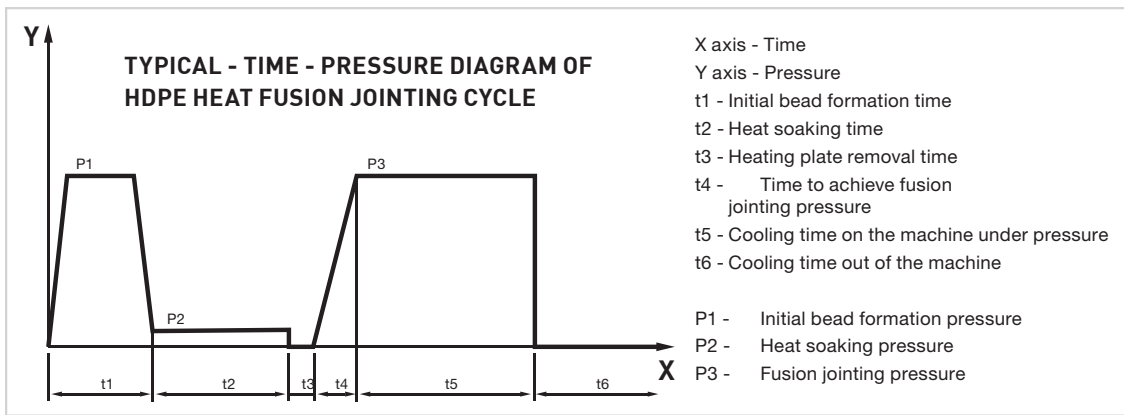
- Set the fusion mirror temperature at $215^{\circ}\text{C} \pm 5^{\circ}\text{C}$.
- Test the moving clamp platform movement before clamping the pipe in butt fusion device.
- Clean the mouth of pipes and heating mirror which need to be butt fusion welded.
- Align pipes in butt fusion welding device and firmly clamp in butt fusion jointing device.
- Ensure minimal gap between cross sectional surfaces of pipe & fitting, gap between pipe and fitting shall not be more than 0.5mm.
- Face the pipe ends with motorized rotary cutter device to bring parallels of both end of pipe and fittings surface which are to be butt fusion welded.
- Position the fusion mirror on butt fusion machine, ensure pipes shall not touch with fusion mirror.
- Bring the surfaces of pipes forward so that they touch with fusion heating mirror and apply gentle pressure till the surfaces gets softened. Continue to apply pressure until formation of specified bead height around the periphery of pipes
- After completion of heating time take pipes away from heat fusion mirror. Remove the heat fusion mirror quickly and join the pipes by forwarding towards each other.
- Continue to apply pressure till the pipes are fused together. Hold the pressure till the joint get completely cool.
- Now remove the clamps and allow to cool the joint on ground.

Note: In case of pipe and fitting jointing, the jointing procedure will be same as above.



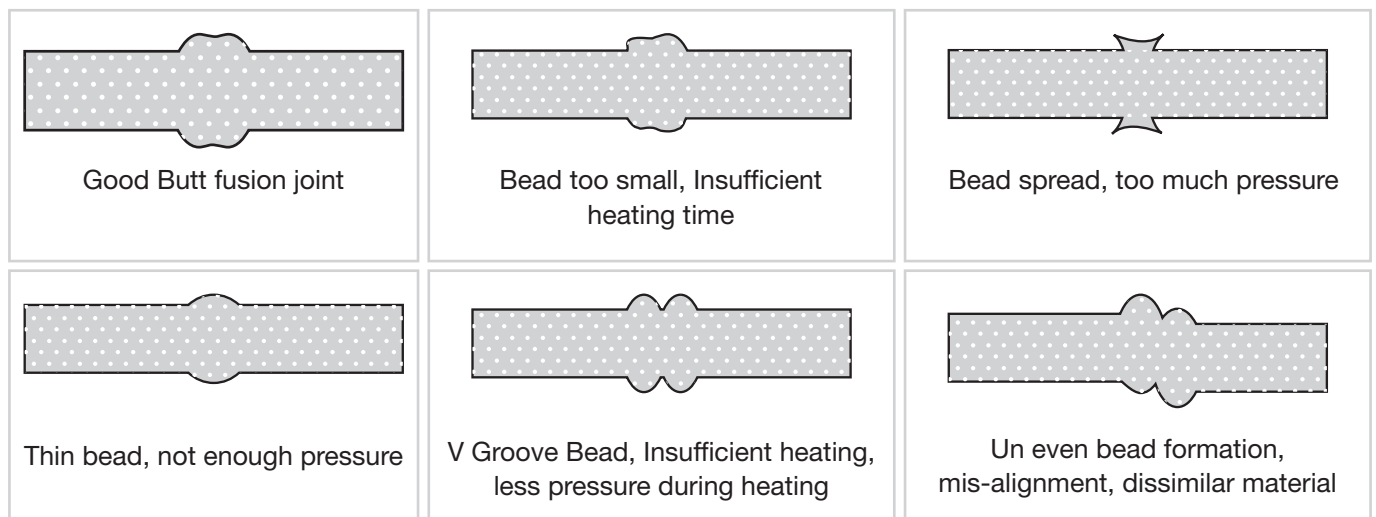
RECOMMENDED VALUES FOR THE HEATED TOOL BUTT-WELDING OF PIPES AND FITTINGS

WALL THICKNESS (MM)	BEAD HEIGHT (MM)	HEATING TIME (SEC)	MX. CHANGE-OVER TIME (SEC)	PRESSURE BUILD-UP TIME (SEC)	MIN. COOLING TIME UNDER JOINING PRESSURE (SEC)	COOLING TIME DURING PRESSURE RELAXATION (SEC)
Up to 4.5	0.5	45	5	5	6	300
4.5 - 7	1.0	45-70	5-6	5-6	6-10	600
7-12	1.5	70-120	6-8	6-8	10-16	900
12-19	2.0	120-190	8-10	8-11	16-24	1200
19-26	2.5	190-260	10-12	11-14	24-32	1500
26-37	3.0	260-370	12-16	14-19	32-45	1800
37-50	3.5	370-500	16-20	19-25	45-60	2100
50-70	4.0	500-700	20-25	25-35	60-80	2700



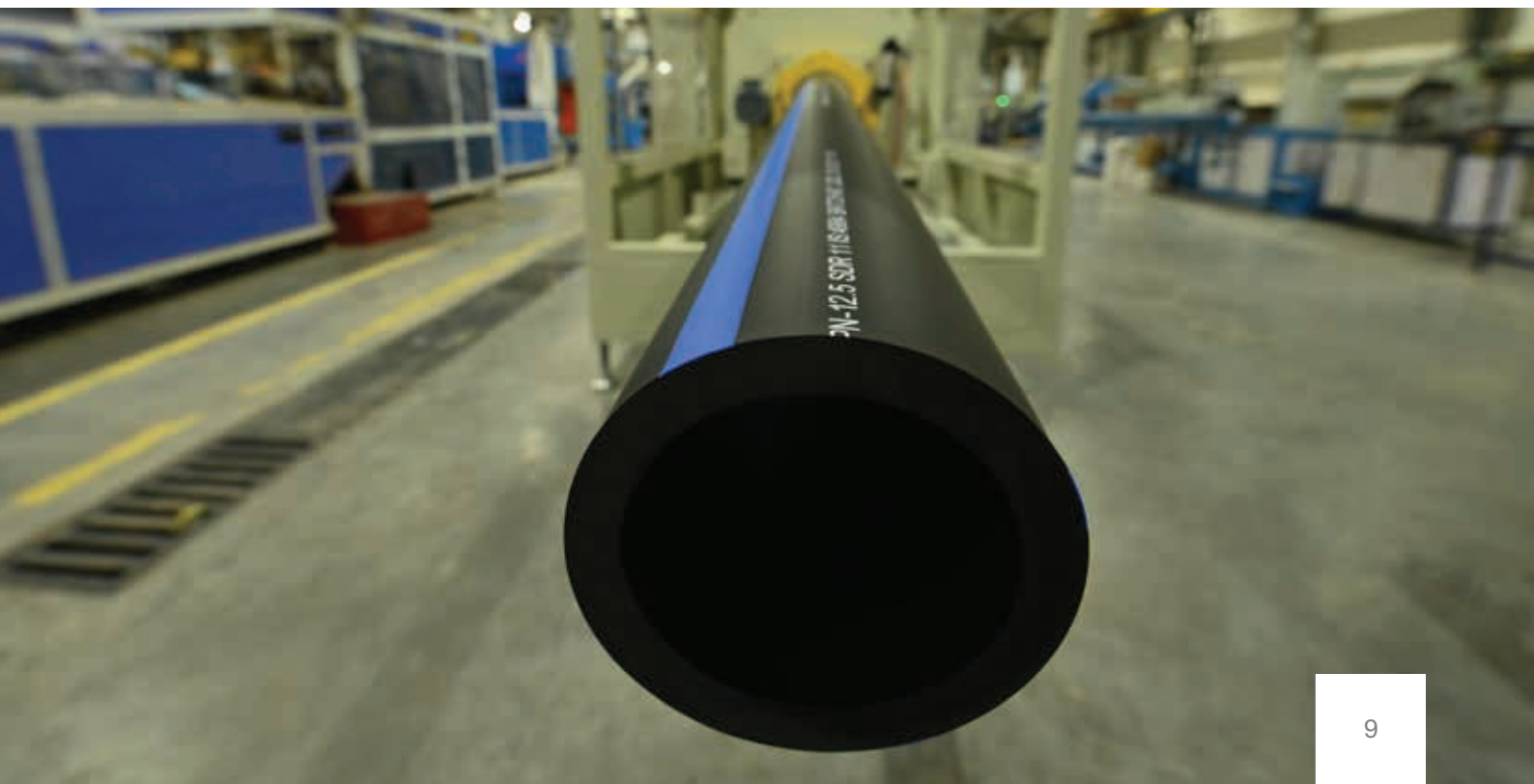
TROUBLE SHOOTING GUIDE FOR BUTT FUSION JOINTING

SR. NO.	BUTT FUSION JOINT DESCRIPTION	POSSIBLE CAUSE
1	Excessive bead width	Overheating; Excessive joining force
2	Too deep V groove between 2 beads	Excessive joining force; Insufficient heating; Less pressure during heating
3	Flat bead top	Excessive joining force; Overheating
4	Non uniform bead formation	Misalignment; Heating tool might be worn or defective; Incomplete or improper facing
5	Uneven bead formation; one bead is larger than another bead	Misalignment; Slippage of component in clamp; Heating tool might be worn or defective; Incomplete or improper facing; Dissimilar material
6	Bead too small	Insufficient heating; Insufficient joining force
7	Bead too large	Excessive heating or heating time



TIPS ON SAFE HANDLING, STORAGE AND TRANSPORTATION

- While handling pipes at plant and at site always use personal protective equipment such as helmet, safety shoes, gloves & safety glasses to prevent injury.
- Polyethylene pipe has properties like lightweight, flexibility and good resistance to impact but they can be scored by sharp edges and can be deformed under load at high temperature and hence care has to be taken during loading/unloading, shifting and storage that they should not be dropped, dragged and impacted.
- During uncoiling and recoiling coil pipes maintain minimum coil diameter to prevent from kinking effect and ensure sharp object do not score pipe.
- While handling pipe with mechanical handling equipment use nylon sling for lifting heavy, long length and higher diameter pipe. Never use chain, wire ropes, etc. which may permanently damage pipes.
- Pipe can be stored on flat ground with timber support of at least 4" width & breadth and timber support placed at 1.5-meter interval with side support up to maximum 1.5- 2.0-meter stacking height.
- While stacking or transporting pipes keep lower SDR means thick wall thickness pipes at the bottom and higher SDR means thin wall pipes above on lower SDR pipes.
- Coiled pipes shall always be handled using nylon sling and mechanical material handling equipment.





PRINCE PIPES AND FITTINGS LIMITED

Manufacturers of UPVC, CPVC, PPR, HDPE Pipes, Fittings, Valves & Water Tanks



Branch Offices:

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Toll Free: 1800 267 7555

Please Call between 10 am to 6 pm

www.princepipes.com

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