

A ZERO DEFECT SOLUTION FOR COMPRESSED AIR APPLICATIONS



Certified to
NSF/ANSI/CAN 61



BLUE GREENFIT[®]
PP-R Industrial Piping Systems



Pipes as per
IS:15801



Fittings as per
DIN 16962

PREFACE

The compressed air piping system focusses more on its air compressor device and less on its distribution piping system. But, just as a heart can fail due to clogged arteries, a compressor can fail due to a poor piping system. In any case, inefficient pipes can cut profits as well.

PRINCE Blue PP-R compressed air piping system is the ideal solution to manage cost and boost your profits. PRINCE Blue PP-R compressed air piping system ensures clean and uncontaminated air for use in process and manufacturing industries.

PRINCE Blue PP-R compressed air distribution pipes are 3 layer pipes, constructed of an inner & outer layer of PP-R and sandwiched over a PP-R + Glass fiber layer. This unique construction makes PRINCE Blue PP-R compressed air distribution pipes lightweight, clean and non-corroding. The inner most layer provides a lifetime of constant and smooth air flow with minimal frictional loss and without issues like corrosion, pit marks & scaling as found in metal piping systems. The sandwiched PP-R + Glass fiber middle layer provides strength, rigidity & toughness. The outermost PP-R layer provides superior chemical resistance along with a permanent blue colour which is according to the international colour coding requirement.

WHY PRINCE BLUE GREENFIT PP-R?

Compressed air, a major source of industrial energy, is being increasingly used in manufacturing, process industries & industrial process automation systems where its distinct advantages of cleanliness, flexibility, safety and economy of use, compared to other energy sources, are fully exploited.

Modern process equipment, pneumatic controls and instrumentation, however, demand supply of clean and uncontaminated air, and this has necessitated the development in recent years of more advanced designs of compressors and ancillary & auxiliary equipments and hence the supply of clean & uncontaminated air from the source to the point of use has become necessary. Therefore, main air lines & branch air lines must also be improved with advanced material like PP-R which is very well suited for compressed air distribution.

The advantages of PRINCE Blue PP-R compressed air system are-

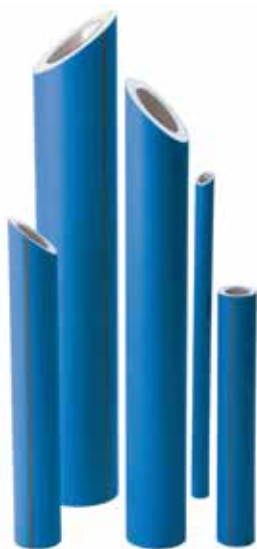
- **Ultra smooth bore** - Less friction means lower pressure drops and higher flow rates because of which a smaller pipe diameter can be recommended compared to the traditional metal piping system.
- **Ra Value** - Ra value is roughness average and it is a dimensional aspect of the manufacturing process. The rough surfaces result in increased friction flow. Due to the rough surface, the unwanted material which is introduced in the system gets stuck on the internal pipe diameter and becomes a hurdle for the flow and also a source of contamination. PRINCE Blue PP-R pipes possess a Ra value of about 0.07 which is far less compared to metal pipe systems and helps in the smooth flow of fluids & air, resulting in negligible frictional losses.
- **Corrosion resistant** - Condensed water in compressed air system leads to corrosion in metal air distribution piping system but with PP-R being from the polyolefin family, there is no issue of corrosion internally and no effect of corrosive fumes & chemicals on the external surface either.
- **Socket Fusion joint** - Jointing performed by heat fusion socket jointing process has provided PP-R with a monolithic homogeneous joint which can be set in operation immediately. With a simple jointing technique, modifications are easily possible. Socket fusion jointing provides faster installation than traditional metal piping system.
- **No effect of heat** - PP-R material is being widely used for transportation of hot fluids up to 95°C, hence there is no effect of warm compressed air on Blue PP-R compressed air piping system.
- **Leak-free System** - Due to monolithic homogeneous joint, there is no chance of leakage throughout the life of the system which greatly reduces the running cost.
- **Self-coloured and maintenance free** - According to the international standard requirement, air distribution lines should be blue. PRINCE Blue PP-R compressed air system is blue in colour and hence there is no need to paint it and it requires no maintenance.
- **Light weight system** - PP-R piping system is one-sixth of the weight of the steel piping system and therefore it is easy to handle and install.

BLUE GREENFIT® PP-R PIPING RANGE

- Pipes are available from 20 mm to 160 mm as per PN10, PN16 and PN 20.
- Fittings are available from 20 mm to 160 mm as per PN20 and PN25.

3 Layer Blue GREENFIT® PP-R pipes.

- Outer layer (Blue Colour) Blue GREENFIT® PP-R is UV resistant, which makes these pipes suitable for use under direct sunlight.
- Inner layer (White Colour) Blue GREENFIT® PP-R is antimicrobial which enhances safety against bacterial growth.
- Middle Glass Fiber layer (Off White Colour) Blue GREENFIT® PP-R ensures the required strength of the pipes.



PIPE DIMENSIONS

SIZE	SDR 11 (PN-10)	SDR 7.4 (PN-16)	SDR 6 (PN-20)
(mm)	(mm)	(mm)	(mm)
20	1.90	2.80	3.40
25	2.30	3.50	4.20
32	2.90	4.40	5.40
40	3.70	5.50	6.70
50	4.60	6.90	8.30
63	5.80	8.60	10.50
75	6.80	10.30	12.50
90	8.20	12.30	15.00
110	10.00	15.10	18.30
160	14.60	21.90	26.60

Pipe Lengths - 3.0 & 5.0 metre lengths. Diameter of 20 to 160 mm pipes are available

Coil - 50 metre to 100 metre, according to size.

Pipe pressure rating – Nominal pressure rating of 10, 16 & 20 Kgf/cm²

Brass metal insert fittings

Fitting pressure rating – PP-R Green fittings are available in nominal pressure rating of 20 & 25 Kgf/cm²



Coupler



Elbow 90°



Elbow 45°



Equal T



Male Threaded
Adaptor (Insert Type)



Female Threaded
Adaptor (Insert Type)

APPLICATIONS

• PRIMARY USAGE

- Compressed Air Lines

• SECONDARY USAGES

- Chemical Transport*
- Hot and Chilled Water Application
- Effluent Treatment Plant (ETP)
- Ship Building and Swimming Pools
- RO Water Pipeline
- Solar Water Heating Systems
- Heating System Inside Building Floor, Wall and Radiator Heating
- Liquid Food Transportation
- Pharmaceuticals and Food Grade Applications

*Refer to the chemical chart printed in the Greenfit Technical Manual

STANDARD

IS 15801: Polypropylene - random copolymer pipes for hot & cold water supplies.

DIN 16962: For pipe joint assemblies & fittings.

IS 10500: For use when in contact with foodstuff, pharmaceutical & drinking water.

JOINTING METHOD

CUTTING

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



HEATING

- Mount the suitable dais on the heating element of the welding machine according to the diameter of the pipe and fitting to be welded
- Connect the welding machine to 220 volts AC power supply
- Select 260°C temperature on the welding machine thermostat
- Wait till the working temperature is reached
- Insert the pipe and the fitting in the dais 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 the table below



This type of connection ensures perfect sealing even under severe working conditions.

RECOMMENDED TIME FOR BLUE GREENFIT® PP-R FUSION JOINTS

Pipe Diameter (mm)	Welding Depth (mm)	Heating Time (Sec)	Welding Time (Sec)	Cooling Time (Min)
20	14.50	6	4	2
25	16.00	7	4	2
32	18.00	8	6	4
40	20.50	12	6	4
50	23.50	18	6	4
63	27.50	24	8	6
75	30.00	30	8	6
90	33.00	40	8	6
110	37.00	50	10	8
160	55.00	60	15	10

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