

FRP / GRP Pipes & Fittings

Satyam Composites a leading company in FRP / GRP Products, introduced manufacturing of FRP / GRP Filament Pipes & Fittings in 2021.

Our pipes are manufacturing by automated CNC Machine by Dual Helical Filament Winding Process Method. We use mechatronic technology that is employed to provide high degrees of reliability and flexibility. Satyam Composite Fiberglass is into designing, development, manufacturing and installation of FRP / GRP pipes and fittings. We also provide consultancy services for special projects.



Advantages

- Long Life & Cost Effective
- Light Weight & Easy to Install
- Dimension Stability
- Very Low Friction Factor (Saving Pumping Cost)
- Low Maintenance, Corrosion Resistance
- Smooth Inside Finish & Compatibility
- Fire Resistance

Applications

- Water Distribution System : Sea Water, Potable Water, Irrigation, Cooling Tower etc.
- Sewerage System : Sanitary Sewage, Drainage, Industrial, Effluent Waste etc.
- Industrial System : Desalination, Power Generation, Petrochemical, Oil and Gas, other production plants etc.

Our GRP / FRP Pipes & Fittings are manufactured as per IS 12709, IS 14402, AWWA M45, DIN, ASTM, etc.

FRP / GRP Pipes Standards & Codes :

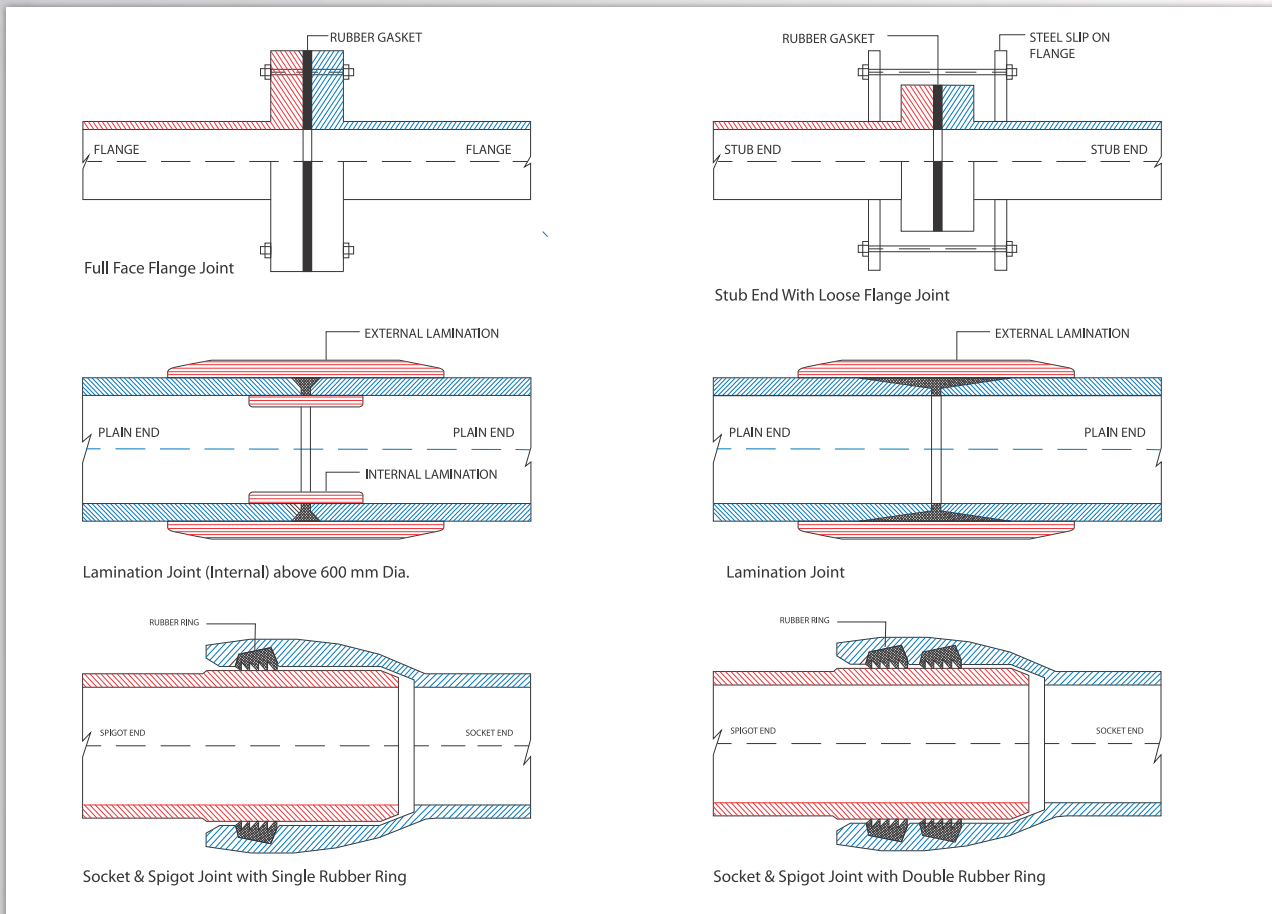
IS 12709, IS 14402, AWWA C950, AWWA M45, DIN, ASTM D 2996, ASTM D 3517, ASTM D 3262, ASTM D 4161, ASTM D5421, ASTM D 3754, BS 5480:1990, BS EN 1796:2006, BS EN 14364:2006, ISO 14692:2002 and many other International Standards are applicable.

We also manufacture fittings like Elbows, Tees, Wyes, Concentric reducers, Eccentric reducers, Flanges, Blind flanges, Puddle flanges, Crosses, End caps etc.

FRP / GRP Pipes & Fittings

Joint Types

- PL / PL : Plain end / Plain End lamination joint
- SO / SP : Socket Spigot flexible joint
- FL / FL : Flanged / Flanged joint



FRP / GRP Pipes Tests

Satyam Composites Fiberglass is equipped with a full fledged Quality Control Laboratory. All the incoming raw material and finished products are subjected to various tests to ensure that only good quality pipes and fittings are delivered. Some of the tests performed are Strain corrosion test, Hydrostatic Design Basis, Long term stiffness.



Hydrostatic Design Based Test



Strain Corrosion Test



Loss of Ignition Test



UTM Machine

FRP / GRP Pipes & Fittings

Tests on Finished Products

- Hydrostatic pressure test
- Axial tensile strength test
- Curing test – Barcol hardness
- Visual inspection & Dimensional control
- Stiffness test
- Impact resistance
- Joint tightness test
- Loss on ignition test
- Hoop tensile (burst) strength test

Tests on Raw Materials

- Resin : Reactivity and Viscosity, Solid contents
- Glass : Texture, Moisture content, Loss on ignition

FRP / GRP Pipes Process

Standard pipe manufacturing uses Dual Helical Filament Winding process in which fiber glass roving is wetted with resin & is wound on steel mandrel /FRP mandrel /wooden mandrel at pre-calculated winding angles. Dual helical winding pattern is responsible for providing composite product with maximum mechanical durability.

Chemical Barrier / Liner Layer	Mechanical Barrier / Structural Layer	Final Barrier / Outer Layer
The inner-most layer mostly impregnated with Unsaturated Polyester Resin (90%) to provide maximum chemical resistance. The resin used will decide the extent of its chemical and temperature resistance.	The structural wall is mostly 70% glass & 30% resin providing it the optimum mechanical strength. The entire process is controlled via software in which we determine the winding angles and the number of layers to be wound on to product. Use of ovens help in fastening curing process & makes sure bonding takes place well. Once pipes are extracted, they are calibrated at the ends if required (flexible joint).	The outer layer mostly impregnated with Unsaturated Polyester Resin Rich Coat along with U. V. Inhibitor for the U.V. Protection along with good esthetic look.

Diameter in mm	Pressure Rating	Stiffness Class	Standard Length of Pipe	Reference Standard
100	PN 3, PN 6, PN 9, PN 12, PN 15 (Intermediate and higher pressure classes are considered on request)	1250, 2500, 5000 and 10000 N/m ²	3 Mtr / 6 Mtr / 9 Mtr / 12 Mtr (As Per Indian Standard) 5.8 Mtr / 11.8 Mtr (For Export – Suitable to Containers)	IS, AWWA, DIN, ASTM, BS, BS EN, ISO 14692:2002 and many other International Standards are applicable
150				
200				
250				
300				
350				
400				
500				
600				
700				
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1100				
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