

IS 14402:1996

Glass Fibre Reinforced Plastics (GRP) Pipes, Joints and Fittings for use for Sewerage, Industrial Waste and Water (other than potable) – Specification

Glass Fibre Reinforced Plastics (GRP) pipes are composite pipes made of a polymer matrix reinforced with glass fibres. Glass reinforced plastics are known for high corrosion resistance, light weight, dimensional stability and low maintenance costs. These qualities make GRP a preferred choice of material for construction of pipes, joints and fittings intended for use with sewerage, industrial waste and water.

The pipes, joints and fittings used for these functions are subject to external stresses, elevated internal pressures and corrosive substances. It is essential that these components perform their intended functions safely and reliably over a sustained period. The standard lays down a comprehensive set of tests to ensure the same. Key requirements include pipe stiffness test, soundness test, longitudinal strength test, hoop tensile strength test, long term hydrostatic test and chemical resistance test. These tests are designed to check the performance of components under elevated working pressures, external loads, temperature variations and corrosive chemicals over a long-term. Components made by different manufacturers need to be compatible with each other so that components from different manufacturers can be integrated into a single system. And they also need to be interchangeable for ease of maintenance. With these objectives, the standard prescribes a set of dimensions for the pipes and their corresponding tolerances. Additionally, to assist the users in selecting the right component for their systems, the standard also prescribes a classification system which is based on the stiffness and pressure requirements of the system.