

## **IS 18309:2023 - Geosynthetics: Prefabricated Vertical Drains for Quick Consolidation of Very Soft Plastic Soil - Specification**

Prefabricated vertical drains (PVDs) are geosynthetic products specifically designed to accelerate the consolidation process in very soft, saturated and compressible soils. The drainage function of PVDs reduces pore water pressure and allows for a quicker settlement process by providing a channel for water to escape, improving soil stability in projects such as road embankments, land reclamation, and foundation support in low-strength soils. These drains typically consist of a plastic core surrounded by a geotextile filter, allowing for controlled filtration and drainage.

Consumers expect PVDs to have high-quality parameters that ensure durability, effectiveness, and reliability in drainage performance. Important quality parameters for overall drain include **tensile strength**, elongation at 1 kN, elongation at break, **discharge capacity** and dimensional tolerances. Additionally, the filter material should allow water flow while preventing soil particles from clogging the drainage channels. Important quality parameters for filters include mass per unit area, tensile strength, **puncture strength**, **permeability**, pore size, etc.

The IS 18309:2023 standard provides a comprehensive set of specifications that address these consumer expectations, ensuring that PVDs meet the desired quality parameters like tensile strength, discharge capacity, **pore size**, permeability, etc. to ensure they can perform effectively in very soft soil conditions. Furthermore, the standard specifies acceptable **dimensional tolerances** and testing methods to verify material properties and performance criteria.

This standard IS 18309:2023 provides consistency, reliability, and confidence in PVD products used in soil consolidation, assisting both manufacturers in quality control and consumers in selecting high-performing products.