Bureau of Indian Standards

IS 14715 (Part 1) : 2016 Jute geotextiles (Part 1) Strengthening of sub-grade in roads — Specification (Second Revision)

Jute geotextiles (JGT) act as a barrier, preventing the sub-base course from mixing with the sub-grade while reducing the required pavement depth. It also promotes effective drainage by allowing surface water and trapped moisture within sub-surface layers to filter through. This filtration improves the California Bearing Ratio (CBR) of the sub-grade, enhancing its stability and load-bearing capacity.

To ensure geotextiles can withstand stress, filter water effectively, and maintain structural integrity over time, jute geotextiles should be durable, have high filtration efficiency, and provide effective soil stabilization. Key quality parameters, including tensile strength, elongation at break, puncture strength, burst strength, and permittivity, collectively ensure the material's performance. Additionally, consumers look for a specified apparent opening size to enable efficient filtration and drainage, preventing soil clogging while allowing moisture to escape. For road construction applications, consistency in material weight, such as 724 gsm for woven and 500 gsm for non-woven JGT, is vital for reliable performance.

Comparatively low elongation at break of jute also helps in enhancing the membrane effect and causes an upward reaction to develop to counteract the downward moving load of the road. Non-woven JGT can be used to advantage as concealed drains encapsulating rubble for facilitating road side drainage. Such drains are especially suitable for hill roads.

This standard (Part 1) specifies requirements for woven jute geotextiles of 724 gsm and non-woven jute geotextiles of 500 gsm, used for road sub-grade strengthening.

The above specified parameters ensure that JGTs provide effective soil stabilization, filtration, and drainage, enhancing the structural performance of roadways and supporting civil engineering applications.