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FORMAT FOR SYNOPSIS OF INDIAN STANDARDS

Number and Title of the Indian Standard: IS 17365:2020 Guidelines for the determination of the long-term strength of geosynthetics for soil reinforcement [Doc. TXD 30 (14168)]

Scope:

This Technical Report provides guidelines for the determination of the long-term strength of geosynthetics for soil reinforcement.

This Technical Report describes a method of deriving reduction factors for geosynthetic soil-reinforcement materials to account for creep and creep rupture, installation damage and weathering, and chemical and biological degradation. It is intended to provide a link between the test data and the codes for construction with reinforced soil.

The geosynthetics covered in this Technical Report include those whose primary purpose is reinforcement, such as geogrids, woven geotextiles and strips, where the reinforcing component is made from polyester (polyethylene terephthalate), polypropylene, high density polyethylene, polyvinyl alcohol, aramids and polyamides 6 and 6,6. This Technical Report does not cover the strength of joints or welds between geosynthetics, nor whether these might be more or less durable than the basic material. Nor does it apply to geomembranes, for example, in landfills. It does not cover the effects of dynamic loading. It does not consider any change in mechanical properties due to soil temperatures below 0 °C, nor the effect of frozen soil. The Technical Report does not cover uncertainty in the design of the reinforced soil structure, nor the human or economic consequences of failure.

Any prediction is not a complete assurance of durability.

a) Salient features of content: The design of reinforced soil structures generally requires consideration of the following two issues:

- a) the maximum strain in the reinforcement during the design lifetime;
- b) the minimum strength of the reinforcement that could lead to rupture during the design lifetime.

In civil engineering design, these two issues are referred to as the serviceability and ultimate limit state respectively. Both factors depend on time and can be degraded by the environment to which the reinforcement is exposed.

b) Types/Grades/classes, if any covered in the standard: NA