IS 18158:2023

Textile Floor Covering — Artificial Grass Carpet made of Synthetic Yarn for Landscape

The Indian Standard IS 18158:2023, "Textile Floor Covering — Artificial Grass Carpet Made of Synthetic Yarn for Landscape — Specification," provides guidelines for manufacturing artificial grass carpets for landscaping. Artificial grass carpets are becoming increasingly popular due to their low maintenance and durability. These artificial grass carpet also stays green and closely resemble a real lawn. To ensure the appearance retention of pile yarn in artificial grass carpet, the assessment of change in appearance is of significant important. Accordingly, changes in appearance by means of hexapod tumbler test has also been specified.

Construction

The standard specifies the requirements of materials for the backing and the pile yarn. The backing can be synthetic woven or non-woven fabric, fleece, or any other appropriate material. The pile yarn, designed to look like natural grass, must be made from polypropylene fibrillated yarn, polyethylene monofilament yarn, or a blend of both.

Performance Requirements

The standard outlines essential performance requirements to ensure the longevity and safety of carpets. Key tests include water permeability, assessed using a double-ring infiltrometer to determine the carpet's drainage capacity; colour fastness, which evaluates resistance to fading from light, shampooing, and water; and dimensional stability, confirming that the carpet maintains its shape and size despite variations in water and heat.

Additionally, the tuft withdrawal force test measures the force needed to pull out a tuft, indicating structural integrity, while flame retardancy is assessed through a tablet test to ensure resistance to burning, which is a crucial safety feature. The standard also specifies that holes must be punched into the backing for water drainage, with a maximum spacing of 14 cm.

Given that artificial grass is exposed to UV rays for extended periods, the standard includes requirements for colour change due to UV exposure, in addition to general colour fastness to light. Furthermore, to ensure the appearance retention of pile yarn in artificial grass carpets, an assessment of changes in appearance is deemed significant, leading to the specification of the hexapod tumbler test to measure such changes.