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Cotton Module Cover Material Performance

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1 Scope

1.1 This standard was developed and applies to material covers for rectangular-shaped and cylindrical cotton modules.

1.2 This performance standard applies to materials used to manufacture covers intended to protect cotton modules after harvest from rain and wind exposure during outdoor storage by minimizing the fiber quality damage and fiber loss that can occur under poor storage conditions.

1.3 Rectangular module covers are typically used over multiple harvest seasons where they experience exposure to wind and ultraviolet (UV) radiation (sunlight). For rectangular module covers, mechanical motion from wind and other sources has been found to be the dominant factor contributing to material degradation. This standard specifies a minimum ability to maintain water penetration resistance following mechanical flexing for rectangular module covers.

1.4 Rectangular module cover materials may be constructed of natural or man-made fibers, tapes, film (woven or extruded) or a combination of fibers that may be coated and have UV inhibitors added. Although some covers will include sections of materials that are connected by seams, reinforcements, and/or have fused intersections and have grommets inserted to tie down or secure the cover onto a cotton module with ropes or cords, this performance standard only applies to the material used to form the top surface of the rectangular module cover. For cylindrical module covers, this performance standard applies to single layer and combined layer, natural or man-made materials as specified.

1.5 The physical test requirements for materials used in rectangular module covers are those that can predict functional protection and reasonable durability for extended periods of use. The tests for rectangular covers are intended to evaluate the degradation of resistance to water penetration after repeated mechanical flexing (similar to wind motion).

1.6 Plastic film covers used on cylindrical modules are single use covers that are applied under tension to protect and restrain the cotton in cylindrical form. Unlike rectangular module covers, degradation due to wind exposure is not a primary concern for cylindrical module covers. For cylindrical module covers, the primary focus is on puncture, tear, impact resistance, and the ability to provide structural stability to the module.

1.7 For cylindrical module covers, this performance standard is focused on single use plastic film covers. The use of other materials is not prohibited; however, the testing protocols in this standard may not be appropriate for other materials.

1.8 The laboratory testing methods specified for cylindrical module covers are intended to evaluate tear, puncture, and impact resistance of the material in multi-layer combinations as applied to a cylindrical module, as these have been common modes of failure for the multi-layer film materials in current use. In-field testing of module cover materials applied to cylindrical cotton modules is intended to evaluate the ability for the cover material system to protect and restrain the cotton under prolonged exposure to environmental effects.