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Standard Specification for Atactic Polypropylene (APP) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements¹

This standard is issued under the fixed designation D 6223; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

~~ϵ^1 NOTE—Editorial changes were made throughout in July 2005.~~

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ϵ^2 NOTE—Section 3 and subsection 9.2 were editorially corrected in March 2008.

1. Scope

1.1 This specification covers prefabricated modified bituminous sheet materials reinforced with a combination of polyester fabric and glass fiber, with or without granules, that use atactic polypropylene (APP) as the primary modifier and are intended for use in the fabrication of multiple ply roofing and waterproofing membranes.

1.2 This specification is intended as a material specification only. Issues regarding the suitability of specific roof constructions or application techniques are beyond the scope of this specification.

1.3 The specified tests and property limits used to characterize the sheet materials covered by this specification are intended to establish minimum properties. In-place roof system design criteria such as fire resistance, field strength, impact/puncture resistance, material compatibility, uplift resistance, the need for field applied coatings, and others, are factors beyond the scope of this material specification.

1.4 The values stated in SI units are to be regarded as the standard. The inch-pound units given in parentheses are for information only.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

[ASTM D6223-02e2](https://standards.iteh.ai/catalog/standards/sist/8b4047dd-5596-4a3d-98e4-ec2c86085eb4/astm-d6223-02e2)

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¹ This specification is under the jurisdiction of ASTM Committee D08 on Roofing and Waterproofing and is the direct responsibility of Subcommittee D08.04 on Felts and Fabrics.

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2. Referenced Documents

2.1 ASTM Standards:²

- D 1079 ~~Terminology Relating to Roofing, Waterproofing, and Bituminous Materials~~ Terminology Relating to Roofing and Waterproofing
 D 5147 Test Methods for Sampling and Testing Modified Bituminous Sheet Material
 D 5636 Test Method for Low Temperature Unrolling of Felt or Sheet Roofing and Waterproofing Materials

3. Terminology

3.1 Definitions:

3.1.1 For definitions of terms used in this specification, refer to Terminology D 1079.

~~3.2 Definitions of Terms Specific to This Standard:~~

~~3.2.1 elongation at 5% of maximum load—the elongation measured on the load–elongation curve at which point the load has dropped to 5% of its maximum value.~~

4. Classification

4.1 Type I and II modified bituminous sheet materials reinforced with a combination of polyester fabric and glass fiber reinforcements, are covered by this specification (see Table 1).

4.2 The following grades are used to describe the material surfacing:

4.2.1 *Grade G*—Granule surfacing.

4.2.2 *Grade S*—Smooth surfacing.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

TABLE 1 Physical Properties of APP Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements^A

Property	Type I	Type II
Peak load at 23 ± 2°C (73.4 ± 3.6°F) MD and XMD, before and after heat conditioning, kN/m (lbf/in.), minimum	11.4 (65)	17.5 (100)
Elongation at 23 ± 2°C (73.4 ± 3.6°F) MD and XMD, before and after heat conditioning, at peak load, % minimum	3	3
Peak load at -18 ± 2°C (0 ± 3.6°F) MD and XMD, kN/m (lbf/in.), minimum	26.3 (150)	35 (200)
Elongation at -18 ± 2°C (0 ± 3.6°F) MD and XMD, at peak load, % minimum	3	3
Tear Strength at 23 ± 2°C (73.4 ± 3.6°F) <i>N</i> (lbf), minimum	533 (120)	800 (180)
Low temperature flexibility, before and after heat conditioning, °C (°F), maximum	+ 0 (32)	+ 0 (32)
Dimensional stability, % change, maximum	1	1
Compound stability, °C (°F) minimum	110 (230)	110 (230)
Granule embedment, Grade G only, maximum loss, grams	2	2
Water absorption, % maximum	3.2	3.2
Moisture content, % maximum	1	1
Low temperature unrolling, °C (°F), maximum	5 (41)	5 (41)

^A The properties in this table are "as manufactured" unless otherwise noted.