



## Standard Specification for Coal Tar Adhesive<sup>1</sup>

This standard is issued under the fixed designation D6753/D6753M; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers coal tar adhesive with or without polymer modification suitable for brush, spray, squeegee and trowel application to coal tar built up and coal tar modified bitumen membrane roofings and flashings.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.3 *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 requirements prior to use.*

### 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

**D903 Test Method for Peel or Stripping Strength of Adhesive Bonds**

**D6511/D6511M Test Methods for Solvent Bearing Bituminous Compounds**

### 3. Classification

3.1 *Type I*—Brush, squeegee, or spray consistency intended for use in the application of field sheet membranes.

3.2 *Type II*—Heavy brushing or trowel consistency intended for use in the repair of coal tar roofing and flashings and installation of flashings.

### 4. Materials and Manufacture

4.1 Coal tar adhesive shall consist of a processed coal tar base, volatile solvents, mineral stabilizers, with or without polymer modifiers excluding asbestos, mixed to a smooth consistency.

### 5. Physical Requirements:

5.1 The material shall conform to the requirements prescribed in **Table 1**.

5.2 *Uniformity*—A thoroughly stirred sample shall show no separation of solvent or settling that cannot be overcome by moderate stirring after standing for 72 h at room temperature in a closed container.

### 6. Sampling and Test Methods

6.1 *Test Methods* **D6511/D6511M**:

6.2 *Strength of Lap*—Test Methods **D6511/D6511M** as modified below:

6.2.1 Three sets of four specimens shall be prepared, conditioned, and tested at three different temperatures for lap shear strength.

6.2.2 Temperatures are to be 10, 25, and 60°C [50, 77, and 140°F], for conditioning and 10, 25, and 32°C [50, 77, and 90°F] for testing. Preparation of specimens shall be done at a laboratory temperature of  $23 \pm 1.8^\circ\text{C}$  [ $73.4 \pm 3.6^\circ\text{F}$ ].

6.2.3 *Test Specimen and Sample*:

6.2.3.1 Use a sample of the actual roofing membrane intended for use with the adhesive.

6.2.3.2 For each specimen, cut a 1- by 12-in. [25- by 305-mm] transverse strip of membrane that includes the selvage; then cut this strip in half so that one piece contains the selvage and the other is plain.

6.2.3.3 Spread the amount of coal tar adhesive recommended by the manufacturer evenly over the selvage and then place the reverse side of the plain half over the adhesive coated selvage in the same manner as a field lap would be made.

6.2.3.4 Place a 10-lb [4.5-kg] mass over the lap. The mass shall be large enough to cover the area containing adhesive. After 2 min, remove the mass and condition the specimens as prescribed in **Table 1**. Use care when handling or moving samples.

6.2.4 *Procedure*—Test each specimen immediately after the specified conditioning period in accordance with Test Methods

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto: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 Requirements for Coal Tar Adhesive<sup>A</sup>**

	Type I				Type II			
Non-volatile matter, % min	73				60			
Water, % max.	2.0				3			
Ash (% of nonvolatile matter), min.	4				12			
Lap shear strength, min, kN/m	24 h	72 h	7 days	28 days	24 h	72 h	7 days	28 days
Conditioned and tested at 10°C [50°F]	25	60	MF <sup>B</sup>	MF	60	65	MF	MF
Conditioned and tested at 25°C [77°F]	15	40	70	MF	70	75	MF	MF
Conditioned at 60°C [140°F] and tested at 32°C [90°F]	6	15	20	MF	25	30	MF	MF
Peel strength min, kN/m	24 h	72 h	7 days	28 days	24 h	72 h	7 days	28 days
Conditioned and tested at 10°C [50°F]	0.25	0.45	0.81	1.75	0.50	0.70	2.80	2.90
Conditioned and tested at 25°C [77°F]	0.20	0.50	0.95	2.50	0.80	2.0	5.50	7.0
Conditioned at 60°C [140°F] and tested at 32°C [90°F]	0.40	1.36	2.0	2.10	2.40	2.50	2.80	3.00

<sup>A</sup> Values in table developed with a coal tar modified bitumen sheet adhered to itself.

<sup>B</sup> MF denotes substrate failure.

**D6511/D6511M.** If any specimen fails to meet the minimum values specified in **Table 1**, report the material as failing the lap strength.

### 6.3 Peel Strength:

6.3.1 Test each specimen immediately after the specified conditioning period in accordance with Test Method **D903**. Specimens prepared as in **6.2.3**. If any specimen fails to meet the minimum values specified in **Table 1**, report the material as failing the peel strength.

## 7. Inspection

7.1 Inspection of the material shall be as agreed upon between the purchaser and the supplier as part of the purchase contract.

## 8. Rejection and Resubmittal

8.1 Failure to conform to any of the requirements prescribed in this specification may constitute grounds for rejection. In the case of rejection, the seller shall have the right to reinspect the rejected material and resubmit the lot after removal of those packages not conforming to the requirements.

## 9. Packaging and Package Marking

9.1 Unless otherwise agreed upon, all products shall be packaged and labeled in accordance with applicable regulations. Each package shall be marked to indicate the applicable type and ASTM specification.

## 10. Keywords

10.1 adhesive; coal tar; peel strength; shear strength

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