Designation: D 6753 – 02

# Standard Specification for Coal Tar Adhesive[1]

This standard is issued under the fixed designation D 6753; 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.

## 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 SI units are to be regarded as the standard. The values given in parentheses are for information purposes only.

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:*

D 903 Test Method for Peel or Stripping Strength of Adhesive Bonds[2]

D 6511 Test Methods for Solvent Bearing Bituminous Compounds[3]

## 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 D 6511*:

6.2 *Strength of Lap*—Test Methods D 6511 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 ± 1.8°C (73.4 ± 3.6°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 D 6511. 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 D 903.

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[1] This specification is under the jurisdiction of ASTM Committee D08 on Roofing, Waterproofing, and Bituminous Materials and is the direct responsibility of Subcommittee D08.05 on Solvent-Bearing Bituminous Compounds for Roofing and Waterproofing.

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[2] *Annual Book of ASTM Standards*, Vol 15.06.

[3] *Annual Book of ASTM Standards*, Vol 04.04.

**TABLE 1 Requirements for Coal Tar Adhesive[A]**

| | 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[B] | 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 |

[A] Values in table developed with a coal tar modified bitumen sheet adhered to itself.
[B] MF denotes substrate failure.

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 suppler 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