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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Specification for Elastomeric Strip Seals with Steel Locking Edge Rails Used in Expansion Joint Sealing[1]

This standard is issued under the fixed designation D 5973; 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 the material requirements for preformed elastomeric strip seals and the corresponding steel locking edge rail used in expansion joint sealing. The scope of this specification is limited to preformed non-reinforced strip seals that mechanically lock into structural steel locking lugs. The sealing element can consist of a single layer strip or have multiple webs depending on individual project requirements. The structural steel locking edge rail shall be anchored into the structure in accordance with the purchaser's specific details. While the scope of this specification is limited to the materials used in fabrication of strip sealing systems, it is recommended that a practical means of testing the watertightness aspects of the individual systems either in the field or at a testing laboratory be developed. When used on highway bridges, limits on maximum joint opening and minimum steel thicknesses need to be addressed.

1.2 The values stated in the inch-pound system shall be considered as standard.

2. Referenced Documents

2.1 *ASTM Standards:*

A 36 Specification for Carbon Structural Steel[2]

A 572 Specification for High-Strength, Low-Alloy Columbium-Vanadium Steel of Structural Quality[2]

A 588 Specification for High-Strength, Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4 in. (100 mm) Thick[3]

D 395 Test Methods for Rubber Property—Compression Set[3]

D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoplastic Elastomers—Tension[3]

D 471 Test Method for Rubber Property—Effects of Liquids[3]

D 518 Test Method for Rubber Deterioration—Surface Cracking[3]

D 573 Test Method for Rubber—Deterioration in an Air Oven[3]

D 1149 Test Method for Rubber Deterioration—Surface Ozone Cracking in a Chamber[3]

D 2240 Test Method for Rubber Property—Durometer Hardness[3]

D 2628 Specification for Performed Polychloroprene Elastomeric Joint Seals for Concrete Pavements[4]

D 4070 Specifications for Adhesive-Lubricant for Installation of Preformed Elastomeric Bridge Compression Seals in Concrete Structures[5]

2.2 *Other Document.*[6]

FHWA Technical Advisory T 5140.22 Uncoated Weathering Steel in Structures

3. Terminology

3.1 *Acronyms:*

3.1.1 *AICS, n*—American Institute of Steel Construction

3.1.2 *AWS, n*—American Welding Society

3.1.3 *FHWA, n*—Federal Highways Administration

3.1.4 *RMA, n*—Rubber Manufacturers Association

4. Materials and Manufacture

4.1 The seals shall be preformed and manufactured from an elastomeric compound.

4.2 The locking edge rail shall be manufactured from structural steel.

4.3 The adhesive-lubricant used to install the preformed seal into the steel locking edge rail shall be a one part moisture curing polyurethane compound. The watertightness of the seal shall not depend on the adhesive.

5. Physical Properties

5.1 The elastomeric seals shall conform to the physical properties prescribed in Table 1.

5.2 The structural steel locking edge rail shall conform to Specifications A 588,[7] A 36, A 572, or as specified by the purchaser.

5.3 The adhesive-lubricant shall conform to Specification D 4070.

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[1] This specification is under the jurisdiction of ASTM Committee D-4 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.34 on Preformed Joint Fillers, Sealers and Sealing Systems.

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[2] *Annual Book of ASTM Standards*, Vol 01.04.

[3] *Annual Book of ASTM Standards*, Vol 09.01.

[4] *Annual Book of ASTM Standards*, Vol 04.03.

[5] *Annual Book of ASTM Standards*, Vol 04.01.

[6] Available from the Federal Highway Administration, Bridge Division, 400 7th Street SW, Washington, DC 20590.

[7] The specifier should be aware of FHWA Technical Advisory T 5140.22 when specifying A 588 Steel.