Designation: D5973 – 97 (Reapproved 2017)

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 D5973; 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.

1.3 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A36/A36M Specification for Carbon Structural Steel

A572/A572M Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

A588/A588M Specification for High-Strength Low-Alloy Structural Steel, up to 50 ksi [345 MPa] Minimum Yield Point, with Atmospheric Corrosion Resistance

D395 Test Methods for Rubber Property—Compression Set

D412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension

D471 Test Method for Rubber Property—Effect of Liquids

D518 Test Method for Rubber Deterioration—Surface Cracking (Withdrawn 2007)[3]

D573 Test Method for Rubber—Deterioration in an Air Oven

D1149 Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment

D2240 Test Method for Rubber Property—Durometer Hardness

D2628 Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements

D4070 Specification for Adhesive Lubricant for Installation of Preformed Elastomeric Bridge Compression Seals in Concrete Structures

2.2 *Other Document:*[4]

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.

[1] This specification is under the jurisdiction of ASTM Committee D04 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] 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.

[3] The last approved version of this historical standard is referenced on www.astm.org.

[4] Available from the Federal Highway Administration, Bridge Division, 400 7th Street SW, Washington, DC 20590, www.fhwa.dot.gov.