



Standard Specification for Structural Standing Seam Aluminum Roof Panel Systems¹

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1. Scope

1.1 This specification covers the design, construction, and weatherability of structural standing seam aluminum roof panel systems. It includes performance requirements for the following elements only: panels, concealed panel clips, panel/clip anchorage, and panel joint sealers.

NOTE 1—These systems are used on both low-slope and steep-slope roof applications. They also are used with or without an underlying deck or sheathing.

1.2 The objective of this specification is to provide for the overall performance of the structural standing seam aluminum roof panel system as defined in 3.2.6 during its service life in order to provide weather protection, carry the specified design loads, and allow proper access over the roof surface in order to provide for periodic maintenance of the equipment by the building owner.

1.3 In addition to structural characteristics, the specifier shall evaluate other characteristics beyond the scope of this specification that affect the final choice of roof construction. These include, but are not limited to, functional, legal, insurance, and economic considerations. See Appendix X1 for the specifier's checklist.

1.4 This specification is not intended to exclude products or systems not covered by the referenced documents.

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

1.6 The text of this specification contains notes and footnotes that provide explanatory information and are not requirements of this specification.

2. Referenced Documents

2.1 ASTM Standards:

B 209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate²

C 711 Test Method for Low-Temperature Flexibility and Tenacity of One-Part, Elastomeric, Solvent-Release Type Sealants²

C 765 Test Method for Low-Temperature Flexibility of Preformed Tape Sealants²

C 879 Test Method for Release Papers Used with Preformed Tape Sealants²

D 1667 Specification for Flexible Cellular Materials—Vinyl Chloride Polymers and Copolymers (Closed-Cell Form)²

D 3310 Test Method for Determining Corrosivity of Adhesive Metals²

E 631 Terminology of Building Constructions²

E 1592 Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference²

E 1646 Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference²

E 1680 Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems²

G 21 Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi²

2.2 *Factory Mutual Research Corporation Standard:*
Approval Standard Class 1 Panel Roofs Class No. 4471³

2.3 *Underwriters Laboratories Standard:*
UL 580, Standard for Safety, Tests for Uplift Resistance of Roof Assemblies⁴

2.4 *Aluminum Association Document:*
Aluminum Design Manual, Latest Edition⁵

2.5 *AISI Document:*
Cold-Formed Steel Design Manual, Latest Edition⁶

2.6 *MBMA Document:*
MBMA Low Rise Building Systems Manual, Latest Edition⁷

¹ This specification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.57 on Performance of Metal Roof 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 Available from Factory Mutual Research Corp., P.O. Box 688, Norwood, MA 02062.

⁴ Available from Underwriters' Laboratories, 333 Pfingsten Rd., Northbrook, IL 60062.

⁵ Available from Aluminum Assn., 818 Connecticut Ave., NW, Washington, DC 20006.

⁶ Available from American Iron and Steel Institute (AISI), 1101 17th St., NW, Suite 1300, Washington, DC 20036.

⁷ Available from Metal Building Manufacturers Assn., Inc., 1300 Summer Avenue, Cleveland, OH 44115-2851.

