



Designation: E1800 – 21

Standard Specification for Adhesive for Bonding Foam Cored Sandwich Panels (160 °F Elevated Humidity Service), Type I Panels¹

This standard is issued under the fixed designation E1800; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers two-part paste adhesives for bonding foam core sandwich panels. The adhesive may be used for new production or depot maintenance. The adhesive should be suitable for forming bonds that can withstand long term exposure to temperatures from –55 °C to 71 °C (–67 °F to 160 °F) and also withstand combinations of stress, temperature, and humidity expected to be encountered in service. The adhesives shall be used for bonding aluminum alloy facing to foam core, inserts, internal aluminum framing members, and other components of a foam cored sandwich panel.

1.2 The values stated in SI units are to be regarded as the standard where only SI units are given or where SI units are given first followed by inch-pound units; where inch-pound units are given first followed by SI units, the inch-pound units are to be regarded as 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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

¹ This specification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.53 on Materials and Processes for Durable Rigidwall Relocatable Structures.

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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.

[B209/B209M Specification for Aluminum and Aluminum-Alloy Sheet and Plate](#)

[D1002 Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading \(Metal-to-Metal\)](#)

[E631 Terminology of Building Constructions](#)

[E864 Practice for Surface Preparation of Aluminum Alloys to Be Adhesively Bonded in Honeycomb Shelter Panels](#)

[E1749 Terminology Relating to Rigid Wall Relocatable Shelters](#)

2.2 *Military Standard:*³

[MIL-STD-202F Test Methods for Electronic and Electrical Component Parts](#)

2.3 *Federal Specification:*³

[QQ-A-250/11d Aluminum Alloy 6061 T6 Plate and Sheet](#)

3. Terminology

3.1 Definitions:

3.1.1 For definitions of general terms related to building construction used in this specification, refer to Terminology [E631](#), and for general terms related to rigid wall relocatable shelters, refer to Terminology [E1749](#).

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *adhesive life*—the maximum time that an adhesive, when mixed in a prescribed quantity, can set at a designated temperature, after which the adhesive, when used to prepare specimens, will deliver the required properties.

4. Requirements

4.1 *Material*—The adhesive shall be a two-part thermosetting epoxy paste containing no asbestos and, when tested using the test methods described in Section 6, shall meet the requirements of Section 4. The adhesive shall not have a detrimental effect on the components being bonded over the range of temperatures at which the adhesive will be used.

³ Available from DLA Document Services, Building 4-D, 700 Robbins Avenue, Philadelphia, PA 19111, <http://quicksearch.dla.mil/>.