



## Designation: C732 – 17 (Reapproved 2022)

# Standard Test Method for Aging Effects of Artificial Weathering on Latex Sealants<sup>1</sup>

This standard is issued under the fixed designation C732; 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 ( $\epsilon$ ) 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 test method covers a laboratory procedure for the determination of aging effects of artificial weathering on latex sealants.

1.2 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered 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.*

NOTE 1—Currently there is no ISO standard similar to this test method.

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:*<sup>2</sup>

**C717 Terminology of Building Seals and Sealants**

**C1442 Practice for Conducting Tests on Sealants Using Artificial Weathering Apparatus**

## 3. Terminology

3.1 *Definitions:*

3.1.1 Definitions of the following terms are found in Terminology **C717**: adhesive failure (loss of adhesion); latex sealant; sealant, standard conditions.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee **C24** on Building Seals and Sealants and is the direct responsibility of Subcommittee **C24.40** on Weathering.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

## 4. Summary of Test Method

4.1 The sealant is placed in a specially constructed wood-and-aluminum fixture (referred to as a “channel panel”) and exposed for intervals of 500 h to specified alternate wet and dry cycles in an accelerated weathering unit, then periodically examined for evidences of deterioration.

## 5. Significance and Use

5.1 Accelerated weathering exposure serves to indicate long-term exterior durability of the sealant. In this test method, durability is tested when the sealant is used with wood or aluminum.

## 6. Apparatus

6.1 *Accelerated Weathering Device*—One of the units as described in Practice **C1442**. Because of differences in spectral power distributions of the exposure sources and exposure parameters used in the different types of devices described in Practice **C1442**, test results may differ with the type of accelerated weathering device. Choice of type of device shall be by mutual agreement among the interested parties.

6.2 *Channel Panel attached to a Sample Holder*, as shown in **Fig. 1**.

6.3 *Knife*, for tooling.

## 7. Sampling

7.1 Use the sealant to be tested directly from the container as commercially supplied by the manufacturer.

## 8. Test Specimens

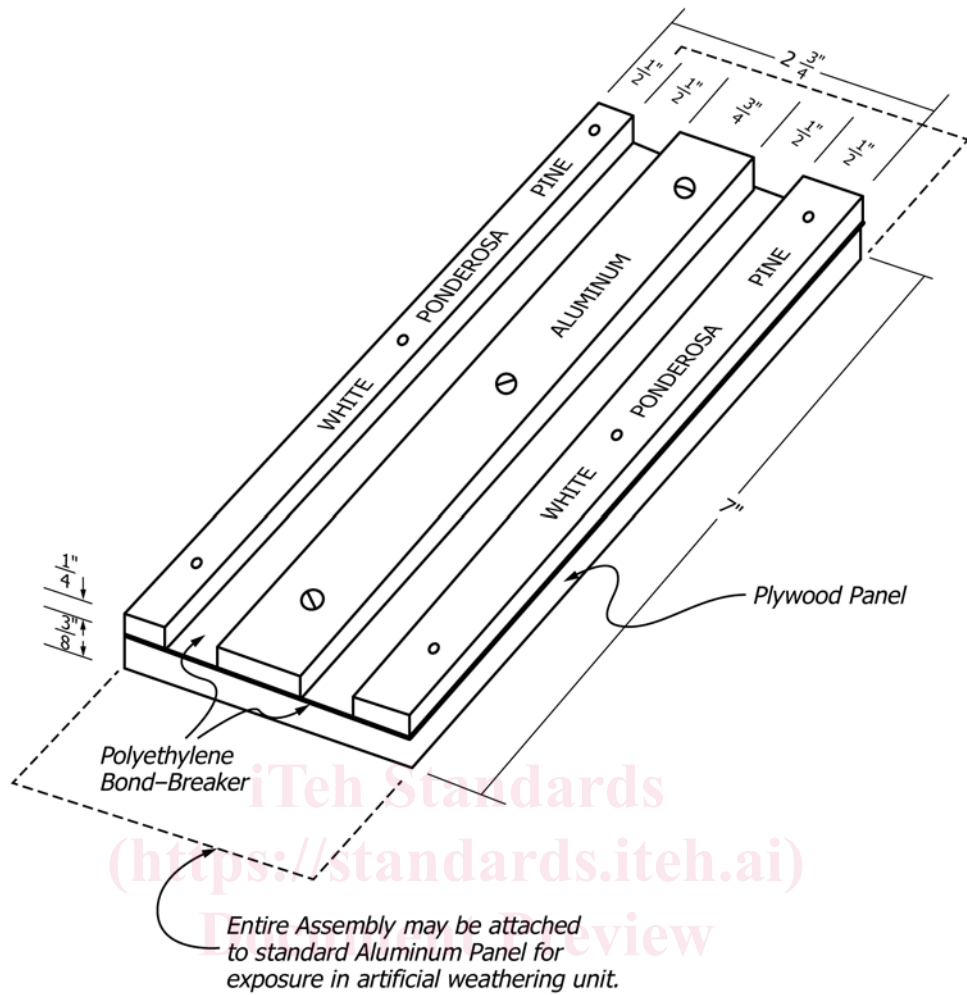
8.1 Prepare two 25 mm by 70 mm by 175 mm (1-in. by 2¾-in. by 7-in.) wood-and-aluminum channel panels as shown in **Fig. 1**, using the following materials:

8.1.1 *Exterior Fir Plywood*, with a water-resistant thermoset glue such as urea or melamine-formaldehyde type.

8.1.2 *Ponderosa Pine Sapwood*, white kiln dried and free of knots or imperfections.

8.1.3 *Aluminum Alloy 6063-T5 or 6061-T6*, clear, anodized a minimum of 30 min over a scale-free finish.

8.1.4 *Polyethylene Bond-Breaker* of low-density film approximately 5 mils (0.13 mm) thick.



Entire Assembly may be attached to standard Aluminum Panel for exposure in artificial weathering unit.

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Metric Equivalents			
in.	mm	in.	mm
1/4	6.4	3/4	19.1
3/8	9.5	2 3/4	69.9
1/2	12.7	7	177.8

Materials:

- 1—3/8 by 2 3/4 by 7-in. plywood
- 1—1/4 by 3/4 by 7-in. aluminum
- 2—1/4 by 1/2 by 7-in. ponderosa white pine
- 1—2 3/4 by 7-in. sheet untreated polyethylene
- 3 Screws
- 6 Nails
- 1 Aluminum Panel

FIG. 1 Channel Panel attached to a Sample Holder

8.1.5 Screws and Nails, zinc-coated or nonrusting type.

8.2 Using a gun or knife, completely fill the two 7 mm by 13 mm (1/4-in. by 1/2-in.) channels in both panels with sealant, striking off the excess from the top and ends so that it is flush with the panel surfaces.

NOTE 2—The length dimension of the channel may be reduced as needed to accommodate the specimen holder requirements of the artificial weathering device available for use.

9. Conditioning

9.1 Condition both specimens for 7 days at standard conditions.

10. Procedure

10.1 Secure one or more test specimen(s) in the artificial weathering unit and cycle for intervals of 500 h, beginning

with the start of the light cycle. Refer to Practice C1442 for the artificial weathering unit operating conditions. Expose specimens in the xenon arc device for a minimum of 500 h at an irradiance level of 0.51 W/(m<sup>2</sup> · nm) at 340 nm. The radiant exposure for this is 918 kJ/(m<sup>2</sup> · nm) at 340 nm. To determine the exposure time required to obtain the same radiant exposure at other irradiance levels specified in Practice C1442, see Annex A1 in C1442.

10.2 Maintain an unexposed file specimen at standard conditions until the accelerated weathering exposure is complete.

10.3 After the test specimen has been exposed as specified in 10.1, remove it, allow it to cool to standard conditions. Examine it visually for wash-out, slump, cracking, loss of adhesion to the wood or aluminum, and discoloration.