



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

This standard is issued under the fixed designation C 732; 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 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 metric (SI) units are to be regarded as the standard. The values given in parentheses are for information only.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

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

## 2. Referenced Documents

### 2.1 ASTM Standards:

C 717 Terminology of Building Seals and Sealants<sup>2</sup>

G 23 Practice for Operating Light-Exposure Apparatus (Carbon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials<sup>3</sup>

G 26 Practice for Operating Light-Exposure Apparatus (Xenon-Arc Type) With and Without Water for Exposure of Nonmetallic Materials<sup>3</sup>

## 3. Terminology

### 3.1 Definitions:

3.1.1 Definitions of the following terms are found in Terminology C 717: adhesive failure (loss of adhesion); latex sealant; sealant.

## 4. Summary of Test Method

4.1 The sealant is placed in a specially constructed wood-and-metal fixture and exposed for 500 h to specified

alternate wet and dry cycles in an accelerated weathering unit, then 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 Unit*—One of the units either of the Type D through F as described in Practice G 23 or Type A through BH as described in Practice G 26, plus a 102-18 cycling cam and black panel accessories.

6.2 *Q-Panel 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 by 70 by 175-mm (1 by 2 $\frac{3}{4}$  by 7-in.) wood-and-metal 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 Spacer* of low-density film approximately 5 mils (0.13 mm) thick.

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

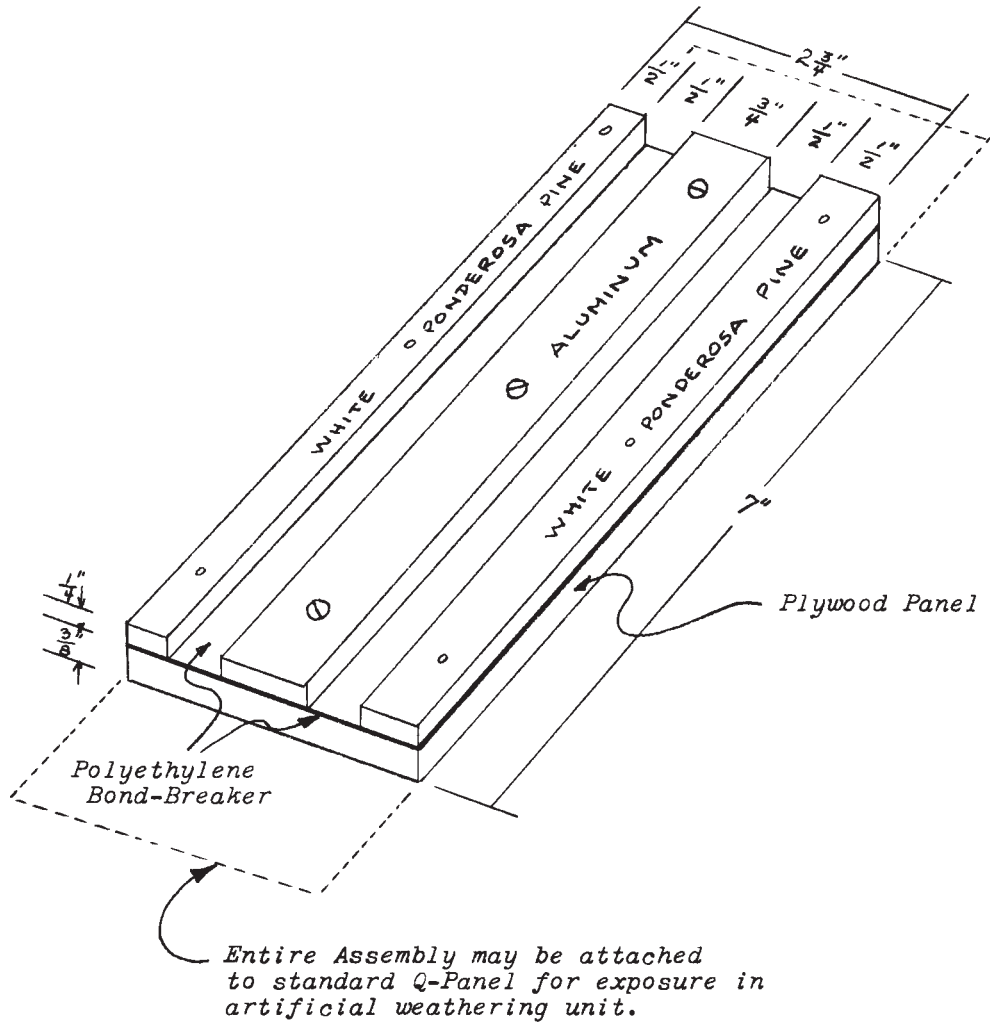
8.2 Using a gun or knife, completely fill the two 7 by 13-mm ( $\frac{1}{4}$  by  $\frac{1}{2}$ -in.) channels in both panels with sealant, striking off the excess from the top and ends so that it is flush with the panel surfaces.

<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> *Annual Book of ASTM Standards*, Vol 04.07.

<sup>3</sup> *Annual Book of ASTM Standards*, Vol 14.02.



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 Q-Panel

FIG. 1 Q-Panel Sample Holder

**9. Conditioning**

9.1 Condition both specimens for 7 days at 23 ± 1°C (73.4 ± 2°F) and 50 ± 5 % relative humidity.

**10. Procedure**

10.1 Secure one test specimen in the artificial weathering unit and cycle for 500 h, beginning with the start of the light cycle. Light temperature 60 ± 1°C (140 ± 2°F); water temperature 23 ± 1°C (73.4 ± 2°F).

10.2 Maintain a control specimen at 23 ± 1°C (73.4 ± 2°F) until 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 23 ± 1°C (73.4 ± 2°F).

Examine it visually for wash-out, slump, cracking, loss of adhesion to wood or aluminum, and discoloration.

**11. Report**

11.1 Compare the exposed specimen with the control specimen, and report any changes in wash-out, slump, cracking, loss of adhesion, or discoloration.

**12. Precision and Bias**

12.1 No statement is made about either the precision or the bias of this test method for measuring wash-out, slump, cracking, or loss of adhesion since the result merely states whether there is conformance to the criteria for success specified in the procedure.

### 13. Keywords

#### 13.1 artificial weathering; latex sealant

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