Standard Specification for
Liquid Applied Acrylic Coating Used in Roofing

This standard is issued under the fixed designation D6083; 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.

ε1 NOTE—An editorial change to subsection 7.3 was made in June 2005.

1. Scope

1.1 This specification covers liquid-applied water-dispersed acrylic latex elastomeric protective roof coatings.

1.2 This specification does not provide guidance for application.

1.3 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 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.

2. Referenced Documents

2.1 ASTM Standards: 2

C794 Test Method for Adhesion-in-Peel of Elastomeric Joint
Sealants
D16 Terminology for Paint, Related Coatings, Materials, and
Applications
D471 Test Method for Rubber Property—Effect of Liquids
D522 Test Methods for Mandrel Bend Test of Attached
Organic Coatings
D562 Test Method for Consistency of Paints Measuring
Krebs Unit (KU) Viscosity Using a Stormer-Type Viscometer
D624 Test Method for Tear Strength of Conventional Vul-
canized Rubber and Thermoplastic Elastomers
D903 Test Method for Peel or Stripping Strength of Adhe-
sive Bonds
D1079 Terminology Relating to Roofing and Waterproofing

D1644 Test Methods for Nonvolatile Content of Varnishes
D1653 Test Methods for Water Vapor Transmission of Or-
ganic Coating Films
D2196 Test Methods for Rheological Properties of Non-
Newtonian Materials by Rotational (Brookfield type)
Viscometer
D2370 Test Method for Tensile Properties of Organic Coat-
ings
D2697 Test Method for Volume Nonvolatile Matter in Clear
or Pigmented Coatings
D4798 Practice for Accelerated Weathering Test Conditions
and Procedures for Bituminous Materials (Xenon-Arc
Method)
G21 Practice for Determining Resistance of Synthetic Poly-
meric Materials to Fungi

3. Terminology

3.1 For definitions of terms used in this specification, see Terminologies D16 and D1079.

4. Packaging and Materials

4.1 Shipping containers shall be marked with the name of

the material, the stock number, lot number, ASTM designation
number and year of issue, quantity therein, shelf-life date, and
the name of the manufacturer or supplier.

5. Materials and Manufacture

5.1 Composition—The product, as manufactured, shall be in

liquid form for application to the roof surface by brushing,
squeegeeing, rolling, or spraying. The product shall be com-
posed of a water-based acrylic latex elastomeric emulsion
polymer, to which various pigments and other additives have
been added to give the required physical properties.

6. Liquid and Cured Film Physical Properties

6.1 Although the product is supplied as a liquid, its perform-

ance is based on the functional properties of the cured
material in film form. The coating is formed into a film fully
adhered to the substrate.

6.2 Liquid Property Requirements —The liquid coating
shall comply with the property requirements in Table 1.
6.3 Film Physical Property Requirements—The cured film shall comply with the requirements listed in Table 2.

7. Test Methods

7.1 Specimen Preparation—Prepare coating films by applying 2 coats, with a minimum of 4 h drying period between coats, to a suitable release surface so film will not tear upon removal (see Test Method D2370) to give a total dry mil thickness of 0.50 ± 0.05 mm (0.02 ± 0.002 in.). The film is allowed to thoroughly cure at 23 ± 2°C (73.4 ± 3.6°F) and 50 ± 10% relative humidity for 336 ± 12 h. The film shall be removed from the release paper and turned over after the first 168 h to allow for complete curing.

7.2 Elongation and Tensile Strength (Test Method D2370):
7.2.1 Test conditions: 23 ± 2°C (73.4 ± 3.6°F) at 50 ± 10% RH.
7.2.2 Cut specimen measuring 75 mm (3 in.) long by 13 mm (0.5 in.) ± 10% wide.
7.2.3 Test Type or Functional Equivalent:
- Cross head speed: 25 ± 0.5 mm/min (1.0 in./min)
- Gage length: 25 ± 0.5 mm (1.0 in.)

7.3 Accelerated Weathering (Practice D4798):
- Cycle employed: A
- Uninsulated black panel temperature: 63 ± 3°C
- Filter: Daylight filter
- Total radiant energy (minimum):
  - 1290 kJ/(m²·nm) at 340 nm
  - 151.2 MJ/m² at 300 to 400 nm
  - (1000 h at the irradiance level of 0.35 W/(m²·nm) at 340 nm specified in Test Method D4798)

7.4 Permeance (Test Methods D1653)—A 0.5 mm (0.02 in.) ± 10% film shall be used.
7.4.1 Test conditions: 23 ± 2°C (73.4 ± 3.6°F) at 50 ± 10% RH.
7.4.2 Test is run in the inverted position with water in contact with the film.
7.4.3 Value is reported in SI and inch-pound units.
7.5 Water Swelling (Test Method D471)—The test shall be conducted at 23 ± 2°C (73.4 ± 3.6°F) using a 0.5 mm (0.020 in.) ± 10% film submerged in distilled water for a period of 168 ± 4 h. At that time, the weight value is determined.
7.6 Adhesion to Specified Substrate (Test Method C794 or D903):
7.6.1 Cross head speed: 50 mm/min (2 in./min).
7.6.2 Specimens are prepared by brush applying two coats to a galvanized panel substrate (unless otherwise specified) with the cloth strip (in accordance with Test Methods C794 and D903) embedded between the coats to give a total dry film thickness of 0.5 mm (0.02 in.) ± 10%. The panels are allowed to dry for 336 ± 12 h at 23 ± 2°C (73.4 ± 3.6°F) and 50 ± 10% relative humidity prior to testing for wet adhesion. If a primer is specified, it shall be applied per the manufacturer’s or supplier’s direction.
7.6.3 Specimens shall be submerged for 168 ± 6 h in tap water at 23 ± 2°C (73.4 ± 3.6°F) prior to testing for wet adhesion. Samples are tested immediately after soaking.
7.7 Tear Resistance (Test Method D624)—Die C.
7.8 Low Temperature Flexibility (Test Method D522, Method B)—Apply product at uniform thickness to aluminum substrate to result in a dry film thickness of 0.36 mm (0.014 in.) ± 10% and allow to cure 72 h at 23 ± 2°C (73.4 ± 3.6°F) and 50 ± 10% relative humidity followed by 120 h at 50°C (122°F) prior to testing.
7.9 Viscosity (Test Method D2196)—Test specimen with Brookfield LVT Viscometer No.4 spindle, 6 RPM.

8. Inspection
8.1 Inspection of the material shall be as agreed by involved parties.

9. Rejection and Resubmittal
9.1 Failure to conform to any one of the requirements prescribed in this specification shall constitute grounds for rejection. The seller shall have the right to inspect the rejected shipment and resubmit the lot after removal of those packages not conforming to the specified requirements.

10. Keywords
10.1 acrylic; elastomeric coating; roof