



Designation: C898/C898M – 09 (Reapproved 2024)

Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Separate Wearing Course¹

This standard is issued under the fixed designation C898/C898M; 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.

1. Scope

1.1 This guide describes the use of a high solids content, cold liquid-applied elastomeric waterproofing membrane that meets the criteria in Specification [C836/C836M](#), in a waterproofing system subject to hydrostatic pressure for building decks over occupied space where the membrane is covered with a separate protective wearing course.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with 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

- [C33/C33M](#) Specification for Concrete Aggregates
- [C578](#) Specification for Rigid, Cellular Polystyrene Thermal Insulation
- [C717](#) Terminology of Building Seals and Sealants

¹ This guide is under the jurisdiction of ASTM Committee [D08](#) on Roofing and Waterproofing and is the direct responsibility of Subcommittee [D08.22](#) on Waterproofing and Dampproofing 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.

[C836/C836M](#) Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course

[C920](#) Specification for Elastomeric Joint Sealants

[C1193](#) Guide for Use of Joint Sealants

[C1299](#) Guide for Use in Selection of Liquid-Applied Sealants (Withdrawn 2012)³

[C1471/C1471M](#) Guide for the Use of High Solids Content Cold Liquid-Applied Elastomeric Waterproofing Membrane on Vertical Surfaces

[C1472](#) Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width

[D1056](#) Specification for Flexible Cellular Materials—Sponge or Expanded Rubber

[D1751](#) Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Asphalt Types)

[D1752](#) Specification for Preformed Sponge Rubber, Cork, and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction

[D5295/D5295M](#) Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems

[D5957](#) Guide for Flood Testing Horizontal Waterproofing Installations

[D6134/D6134M](#) Specification for Vulcanized Rubber Sheets Used in Waterproofing Systems

[D6451/D6451M](#) Guide for Application of Asphalt-Based Protection Board

[D6506/D6506M](#) Specification for Asphalt Based Protection Board for Below-Grade Waterproofing

[E1907](#) Guide to Methods of Evaluating Moisture Conditions of Concrete Floors to Receive Resilient Floor Coverings (Withdrawn 2008)³

2.2 American Concrete Institute Standard:⁴

[ACI 301](#) Specifications for Structural Concrete for Buildings

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from ACI International, P.O. Box 9094, Farmington Hills, MI 4833-9094.

3. Terminology

3.1 For definitions of terms used in the guide, refer to Terminology C717.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *cold-applied*—capable of being applied without heating as contrasted to hot-applied. Cold-applied products are furnished in a liquid state, whereas hot-applied products are furnished as solids that must be heated to liquefy them.

3.2.2 *curing time*—the period between application and the time when the material reaches its design physical properties.

3.2.3 *deflection*—the deviation of a structural element from its original shape or plane due to physical loading, temperature gradients, or rotation of its supports.

3.2.4 *drainage board*—see *prefabricated drainage composite*, the preferred term.

3.2.5 *drainage course*—see *percolation layer* and Fig. 1.

3.2.6 *flashing*—a generic term describing the transitional area between the waterproofing membrane and surfaces above the wearing surface of the building deck; a terminal closure or barrier to prevent ingress of water into the system.

3.2.7 *freeze-thaw cycle*—the freezing and subsequent thawing of a material.

3.2.8 *percolation layer (drainage course)*—a layer of washed gravel or of a manufactured drainage media that allows water to filter through to the drain (see Fig. 1).

3.2.9 *prefabricated drainage composite*—proprietary devices to facilitate drainage, usually a composite laminate of more than one material including filter fabric.

3.2.10 *structural slab*—a horizontal, supporting, cast-in-place, concrete building deck. See Fig. 1.

3.2.11 *troweled finish*—a concrete finish provided by smoothing the surface with power-driven or hand trowels or both, after the float finishing operation. A troweled finish is smoother than the floated finish. For specifications, see ACI 301.

3.2.12 *wearing surface*—a surface exposed to traffic, either pedestrian or vehicular, also described as finish wearing surface.

3.2.13 *wet film thickness*—the thickness of a liquid coating as it is applied.

3.2.14 *wet film gage*—a gage for measuring the thickness of a wet film.

4. Significance and Use

4.1 Designers and installers of waterproofing systems may consult this guide for a discussion of important elements of the use of cold liquid-applied waterproofing membranes and associated elements of construction. This guide is not intended to serve as a specification for waterproofing installation.

4.2 Long-term performance of waterproofing with a separate wearing course is important because of the substantial difficulty in determining the location of leakage and in removing overlying materials to make repairs.

4.3 Refer to Guide C1471/C1471M for application on below grade walls and vertical surfaces.

5. General

5.1 *Major Components, Subsystems, and Features*—The major components to be considered for a building deck waterproofing system are the structural building deck or substrate to be waterproofed, waterproofing membrane, protection of the membrane, drainage, insulation, and wearing course (see Fig. 1). Additional features to be considered are membrane terminal conditions and expansion joints.

5.2 *Compatibility*—It is essential that all components and contiguous elements be compatible and coordinated to form a totally integrated waterproofing system.

6. Substrate

6.1 *General*—The building deck or substrate referred to in this guide is reinforced cast-in-place structural concrete. Precast concrete slabs pose more technical problems than cast-in-place concrete, and the probability of lasting watertightness is greatly diminished and difficult to achieve because of the multitude of joints which have the capability of movement and must be treated accordingly. Moving joints are critical features of waterproofing systems and are more critical when sealed at the membrane level than at a higher level with the use of integral concrete curbs. Such curbs are impractical with precast concrete slabs and necessitate an even more impractical drain in each slab. Other disadvantages of precast concrete slabs are their inflexibility in achieving contoured slope to drains and the difficulty of coordinating the placement of such drains.

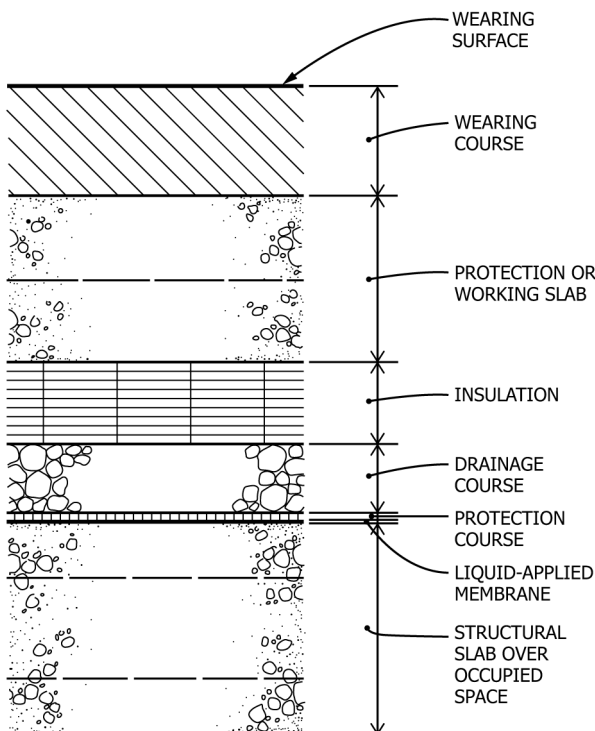


FIG. 1 Basic Components of Cold Liquid-Applied Elastomeric Membrane Waterproofing System with Separate Wearing Course