



Designation: C 981 – 95

Standard Guide for Design of Built-Up Bituminous Membrane Waterproofing Systems for Building Decks¹

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1. Scope

1.1 This guide describes the design and installation of bituminous membrane waterproofing systems for plaza deck and promenade construction over occupied spaces of buildings where covered by a separate wearing course.

1.2 *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:

- C 33 Specification for Concrete Aggregates²
- C 136 Test Method for Sieve Analysis of Fine and Coarse Aggregates²
- C 208 Specification for Cellulosic Fiber Insulating Board³
- C 717 Terminology of Building Seals and Sealants⁴
- C 755 Practice for Selection of Vapor Barriers for Thermal Insulation³
- D 41 Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing⁵
- D 43 Specification for Coal Tar Primer Used in Roofing, Dampproofing, and Waterproofing⁵
- D 173 Specification for Bitumen-Saturated Cotton Fabrics Used in Roofing and Waterproofing⁵
- D 226 Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing⁵
- D 227 Specification for Coal-Tar Saturated Organic Felt Used in Roofing and Waterproofing⁵
- D 312 Specification for Asphalt Used in Roofing⁵
- D 449 Specification for Asphalt Used in Dampproofing and Waterproofing⁵
- D 450 Specification for Coal-Tar Pitch Used in Roofing, Dampproofing, and Waterproofing⁵

- D 1327 Specification for Bitumen-Saturated Woven Burlap Fabrics Used in Roofing and Waterproofing⁵
- D 1668 Specification for Glass Fabrics (Woven and Treated) for Roofing and Waterproofing⁵
- D 2178 Specification for Asphalt Glass Felt Used in Roofing and Waterproofing⁵
- D 2626 Specification for Asphalt-Saturated and Coated Organic Felt Base Sheet Used in Roofing⁵
- D 2822 Specification for Asphalt Roof Cement⁵
- D 4022 Specification for Coal Tar Roof Cement, Asbestos Containing⁵
- D 4586 Specification for Asphalt Roof Cement, Asbestos Free⁵
- D 4601 Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing⁵
- D 4990 Specification for Coal Tar Glass Felt Used in Roofing and Waterproofing⁵
- D 5295 Guide for Preparation of Concrete Surfaces for Adhered (Bonded) Membrane Waterproofing Systems⁵

3. Terminology

3.1 *Definitions*—The definitions of the following terms used in this guide are found in Terminology C 717: creep; cold joint; compatibility; construction joint; hydrostatic pressure; laitance; reglet; spalling; waterproofing.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *cellular (adj)*.—having a composition of plastic or rubber with relative density decreased by the presence of cells disposed throughout its mass. In closed-cell materials, the cells are predominantly separate from each other. In open-cell materials, the cells are predominantly interconnected.

3.2.2 *construction joint*—a butt joint formed in a structural slab in order to end one pour and start another pour later. The joint is usually a cold joint and may be held together with reinforcing steel in the slab, or the steel may be discontinuous by design.

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

3.2.4 *deck*—the horizontal structural substrate supporting the plaza deck system. See also *structural slab*.

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

¹ This guide is under the jurisdiction of ASTM Committee C-24 on Building Seals and Sealants and is the direct responsibility of Subcommittee C24.80 on Building Deck Waterproofing Systems.

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² *Annual Book of ASTM Standards*, Vol 04.02.

³ *Annual Book of ASTM Standards*, Vol 04.06.

⁴ *Annual Book of ASTM Standards*, Vol 04.07.

⁵ *Annual Book of ASTM Standards*, Vol 04.04.