American National Standard Specifications for the Installation of Ceramic Tile

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American National Standard Specifications for the Installation of Ceramic Tile

Secretariat
Tile Council of North America, Inc.

Approved
American National Standards Institute, Inc. (ANSI)

Abstract
This publication is a compilation of voluntary standards for the installation of ceramic tile. American National Standard specifications A108.01, .02, .1A, .1B, .1C, .4, .5, .6, .8, .9, .10, .11, .12, .13, .14, .15, .16, and .17 define the installation of ceramic tile. A118.1, .3, .4, .5, .6, .7, .8, .9, .10, .11, .12, .13, .15, and A136.1 define the test methods and physical properties for ceramic tile installation materials. These standards are intended to be referenced or included in the ceramic tile sections of project specifications.
American National Standards

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Foreword

This foreword is not part of American National Standard A108, A118, or A136.

These voluntary standards define the installation of ceramic tile as well as the test methods and physical properties for ceramic tile installation materials. They are intended to serve as a guide to the general public, manufacturers, distributors, specifiers, architects, tile contractors, testing laboratories, and other businesses and professionals in the tile industry.

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7.5 Evaluation and expression of results

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8.1 Robinson floor test of dry-set mortars for large and heavy tile

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9.1 Application

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2.0 Definitions

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   2.2 Ceramic tile

3.0 Sampling and testing procedures

   3.1 Sample

   3.2 Test environment

   3.3 Test value

4.0 Preparation of modified epoxy emulsion mortar/grout

   4.1 Mixing

5.0 Tests for application properties

   5.1 Water cleanability

   5.2 Initial set

   5.3 Final set

   5.4 Bond strength to quarry tile

   5.5 Shear strength of mortars to glazed wall tile

   5.6 Shear strength of mortars to impervious ceramic mosaic tile

   5.7 Support for shear specimens

   5.8 Comprehensive strength of the cured material

   5.9 Tensile strength of the cured material

   5.10 Flexural strength

   5.11 Water absorption

A118.9 American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units — 2019

1.0 Scope

2.0 Definitions

   2.1 Cementitious backer unit (CBU)

3.0 Sampling and testing procedures

   3.1 Sampling

   3.2 Test environment

   3.3 Test values

4.0 Test for physical properties

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   4.2 Compression indentation

   4.3 Facial dimensions

   4.4 Falling ball impact

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   4.8 Linear expansion with change in moisture content
4.9 Fungus resistance
4.10 Squareness
4.11 Thickness
4.12 Freeze-thaw resistance
4.13 Warm water resistance

5.0 General requirements

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1.0 Scope

2.0 Definitions

2.1 Latex-portland cement mortar
2.2 Ceramic tile

3.0 Sampling and testing procedures

3.1 Sampling
3.2 Temperature
3.3 Recording test values

4.0 Tests for material properties

4.1 Fungus and micro-organism resistance
4.2 Seam strength
4.3 Breaking strength
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5.0 Shear strength to ceramic tile and cement mortar

5.1 Concrete test substrate
5.2 Preparation of shear bond assemblies
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6.0 System performance

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Introduction

1.0 Scope

1.1 Standards

2.0 Definitions

2.1 EGP (exterior glue plywood) modified dry-set mortar
2.2 Ceramic tile
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5.0 Tests for system performance
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A118.15 American National Standard Specifications for Improved Modified Dry-Set Cement Mortar — 2019

Introduction

1.0 Scope

2.0 Definitions
   2.1 Improved modified dry-set cement mortar
   2.2 Ceramic tile

3.0 Property requirements for improved performance modified mortars
   3.1 Property requirements for fast-setting improved modified dry-set mortars
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   3.2 Property requirements for improved modified dry-set mortar for large and heavy tile (in addition to performance requirements listed in Section 3.0)
   3.3 Optional property requirements for improved modified dry-set mortars in addition to performance requirements listed in Section 3.0 (may be combined with Sections 3.1 and 3.2)

4.0 Sampling and testing procedures
   4.1 Sample
   4.2 Temperature
   4.3 Recording test values

5.0 Tests for application properties
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   5.2 Final set for fast-setting improved modified dry-set cement mortars only
   5.3 Open time

6.0 Sag resistance on vertical surfaces (required for mortars designated for vertical applications)
   6.1 Test materials

7.0 Shear strength to ceramic tile
   7.1 Shear strength of improved modified dry-set cement mortars to glazed wall tile
   7.2 Shear strength of mortars to porcelain mosaic tile
   7.3 Shear strength of mortars to quarry tile
   7.4 Support for shear specimens
   7.5 Shear strength of fast-setting improved modified dry-set cement mortars
   7.6 Evaluation and expression of results

8.0 Robinson Floor Test
   8.1 Robinson floor test of improved modified dry-set cement mortars for large and heavy tile
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1.0 Introduction

1.1 The applicable ANSI specifications for ceramic tile installed with portland cement mortar, dry-set or latex-portland cement mortar, organic adhesive, epoxy adhesive, chemical resistant water cleanable tile-setting and -grouting epoxy, chemical resistant furan mortar and grout, modified epoxy emulsion mortar, and the ANSI specifications for the installation of ceramic tile grouts should be made a part of a project specification by reference or by copying the applicable parts of the ANSI specification and including into the ceramic tile sections of a project specification. In either case, augment the ANSI specifications and modify the specific project conditions.

NOTE: If ceramic tiles irregular in size and/or thickness (not conforming to ANSI A137.1) are specified and specialized methods are required for installation, labor and material costs will be increased.

1.2 American National Standard specifications A118.1, .3, .4, .5, .6, .7, .8, .9, .10, .11, .12, .13, .15 and .16 and A136.1 for ceramic tile installation materials are included with these ANSI specifications as separate documents and should also be referenced or included in project specifications.

1.3 The term “thin-set” is not specific. “Thin-set” describes a family of products manufactured to be used as setting and/or bonding coats. When a thin-set method is desired for which there is a specification, the appropriate ANSI specification should be referenced by both number and title.

2.0 Notes for tile material, accessories, and definitions

2.0.1 Include a full description of each type of tile to be used in project specification. Refer to A108.02–3.1.1 of the standard specifications herein in addition to grade markings on tile containers. When specified by the architect, Master Grade Certificates will be issued at the time of shipment. The covering order is required to show the names of the architect and owner and the name and location of the project. Specimens of the Master Grade Certificate and applicable labels are shown in ANSI A137.1.

2.0.2 For each specialty tile being chosen, review installation guidelines supplied by the manufacturer/distributor of the specialty tiles and/or adhesive manufacturer. Specialty tiles include but are not limited to tiles made from non-ceramic materials.

2.1 Exteriors

On exteriors, use only tile recommended by the manufacturer as suitable for the climatic conditions of the locality.

2.2 Interiors

Use only tile types recommended by the manufacturer as suitable for walls and/or floors (traffic areas).

2.2.1 CAUTION: Although organic adhesives provide a good bond for floor tile to substrate, they may provide insufficient support under nonresidential loads, resulting in the cracking of tile. ANSI A118.1 Dry-set Portland Cement Mortars, ANSI A118.4 Latex-portland Cement Mortars, ANSI A118.3 Epoxy Mortars, and ANSI A118.11 EGP (Exterior glue plywood) Latex-portland Cement Mortars are preferable setting systems for floor tile installations.

2.3 Inspection

If desired, specify inspection or approval of the tile as in A108.02–3.1.1 of the standard specifications herein and the procedure that is to be followed to inspect and approve tile before installation.

2.4 Tile accessories

Show location of accessories such as towel bars, paper, soap, and tumbler holders and grab rail on drawings and specify types in project specifications.

2.5 Specifying organic adhesive

Specify type of adhesive in accordance with ANSI A136.1 Standard Specifications for organic adhesives for installation of ceramic tile Type I or Type II. This American National Standard is included herein.