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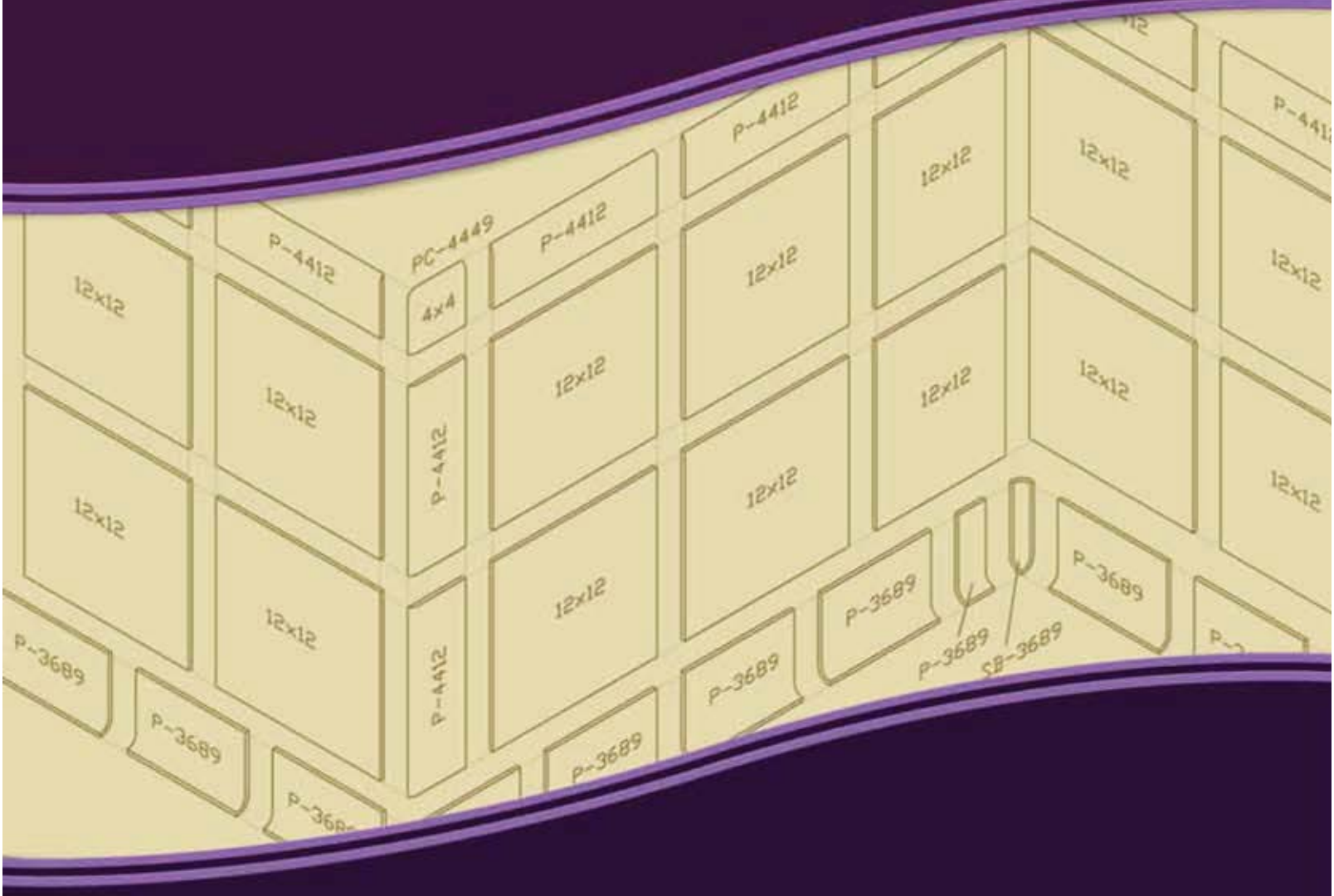

AMERICAN NATIONAL STANDARD SPECIFICATIONS FOR CERAMIC TILE

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American National Standard Specifications for Ceramic Tile

Secretariat
Tile Council of North America, Incorporated

Approved
American National Standards Institute, Inc.

Abstract
This publication presents voluntary standard specifications for ceramic tile. It lists and defines various types, sizes, physical properties, and grading procedures for ceramic tile, including mosaic tile, quarry tile, pressed floor tile, glazed wall tile, porcelain tile, trim units, and specialty tile. This standard provides quality criteria for buyers, specifiers, installers, manufacturers, and the public in general. It is intended for reference or inclusion in the ceramic tile section of project specifications and contracts.

American National Standard

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NOTICE OF DISCLAIMER AND LIMITATION OF LIABILITY

Foreword

This voluntary standard lists and defines various types, sizes, physical properties and grading procedures for ceramic tile. It is intended as a guide to aid the general public, manufacturers, distributors, specifiers, architects, tile contractors, and other businesses and professionals in the tile industry.

While the existence of the standard does not in any respect preclude anyone, including those who have accepted it, from manufacturing, marketing, purchasing or using products, processes or procedures not conforming to this standard, producers of ceramic tile made in conformance with this standard are encouraged individually to indicate such conformance in advertising, promotion, and on tags and labels.

These standards were processed and approved for submittal to ANSI by the Accredited Standards Committee (ASC) on Ceramic Tile A108. Committee approval of a standard does not necessarily imply that all committee members voted for its approval. The A108 Committee had the following members at the time it approved these standards:

Committee Members

Organization Represented	Name of Representative
APA – The Engineered Wood Association	B.J. Yeh
ARCOM, Inc.	Eugene “Buz” Groshong
Artcraft Granite Marble and Tile	James Woelfel
Atlas Minerals and Chemicals	Steve Abernathy
Bonsal American	Tom Cassutt
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Ceramic Tile and Stone Association of Arizona	Sam Hibbs
Ceramic Tile and Stone Consultants	Donato Pompo
Ceramic Tile Distributors Association	Sam Widener
Ceramic Tile Education Foundation	Scott Carothers
Ceramic Tile Institute of America, Inc.	Gray Lafortune
Chicago Tile Institute	Scott Conwell
Construction Specifications Institute	Howard Pryor
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Great Lakes Ceramic Tile Council	Gerald Chioini
Gypsum Association	Robert Wessel
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International Union of Bricklayers and Allied Craftworkers	John Mason
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Michael Byrne Associates	Michael Byrne
National Association of Home Builders	Gary Ehrlich

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NSF International	Mindy Costello
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UL Environment	Josh Jacobs
United Brotherhood of Carpenters	Greg Hefele
United States Gypsum Corporation	Steve Rausch
US TAG to ISO TC-189 WG3	Greg Schad
Wood Construction and Engineering Consultant	Frank Woeste

Standards

The following standards are referred to in the body of this standard by ASTM designation only and by reference are incorporated in this American National Standard. Dates following ASTM designation indicate date of publication or latest revision. Dates in parentheses indicate date on which standard was reaffirmed. Current edition of these standards should be utilized at all times.

Standard Designation	Title
ASTM C370-88 (2012)	Standard Test Method for Moisture Expansion of Fired Whiteware Products
ASTM C372-94 (2007)	Standard Test Method for Linear Thermal Expansion of Porcelain Enamel and Glaze Frits and Fired Ceramic Whiteware Products by the Dilatometer Method
ASTM C373-88 (2006)	Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products
ASTM C424-93 (2006)	Standard Test Method for Crazing Resistance of Fired Glazed Whitewares by Autoclave Treatment
ASTM C482-02 (2009)	Standard Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste
ASTM C484-99 (2009)	Standard Test Method for Thermal Shock Resistance of Glazed Ceramic Tile
ASTM C485-09	Standard Test Method for Measuring Warpage of Ceramic Tile
ASTM C499-09	Standard Test Method for Facial Dimensions and Thickness of Flat, Rectangular Ceramic Wall and Floor Tile
ASTM C502-09	Standard Test Method for Wedging of Flat, Rectangular Ceramic Wall and Floor Tile
ASTM C609-07	Standard Test Method for Measurement of Light Reflectance Value and Small Color Differences Between Pieces of Ceramic Tile
ASTM C648-04 (2009)	Standard Test Method for Breaking Strength of Ceramic Tile
ASTM C650-04 (2009)	Standard Test Method for Resistance of Ceramic Tile to Chemical Substances
ASTM C1026-10	Standard Test Method for Measuring the Resistance of Ceramic Tile to Freeze-Thaw Cycling
ASTM C1027-09	Standard Test Method for Determining Visible Abrasion Resistance of Glazed Ceramic Tile
ASTM C1028-07	Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
ASTM C1243-93 (2009)	Standard Test Method for Relative Resistance to Deep Abrasive Wear of Unglazed Ceramic Tile by Rotating Disc
ASTM C1378-04 (2009)	Standard Test Method for Determination of Resistance to Staining

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American National Standard Specifications for Ceramic Tile
ANSI A137.1 – 2012 [Revised]

1.0 Purpose

These specifications serve as a reference standard for buyers and specifiers of Standard Grade and Second Grade ceramic tile, Decorative Tile, and Specialty Tile. These specifications are also a guide to producers in maintaining quality control of the manufacture of such ceramic tile.

2.0 Scope

These Specifications describe the normally available sizes and shapes of ceramic tile: the physical properties of Standard Grade and Second Grade Ceramic Tile, Decorative Tile and Specialty Tile; the basis for acceptance and methods of testing prior to installation; the marking and certification of ceramic tile; and the definitions of terms employed in these specifications.

3.0 Definition of Terms

Aesthetic Class: A value assigned by the producer to a tile series (V0, V1, V2, V3, or V4). The letter 'V' indicates "variation," with the numbers quantifying the degree of variation of overall color and/or texture. The color can vary in intensity, brightness, hue, and saturation, or by pattern variation. This value is intended to give an indication of what a consumer can visually expect for a specific product. See Table 3.

Basis for Acceptance: The method of determining whether a lot of ceramic tile is acceptable under these specifications.

Caliber Range: An acceptable size range for tiles to be used in the same installation.

Calibrated Tile: Tiles that have been sorted to meet a manufacturer's stated caliber range.

Ceramic Mosaic Tile: Tile, usually ¼ inch (6.35 mm) to 3/8 inch thick (9.53 mm), and having a facial area of less than 9 inch^2 (5806 mm^2). Such tiles are typically mounted in sheets or strips with other mosaic tiles.

Ceramic Tile: See definition for Tile.

Commercial: Flooring areas that are subjected to considerable traffic and abrasive soil. Some examples of these would be: entrances, workrooms, inns, exhibition halls, and salesrooms.

Decorative Tile: A tile that is suitable for decorative use where the aesthetic value may outweigh one or more physical properties including, but not limited to: breaking strength, chemical resistance, or crazing resistance. Such a tile is generally used for interior decorative wall applications.

Dynamic Coefficient of Friction (DCOF): Sometimes called kinetic coefficient of friction. This is the ratio of the force necessary to keep a surface already in motion sliding over another divided by the weight (or normal force) of an object. This force is a materials property of the two surfaces. DCOF is usually less than SCOF for the same materials. Contaminants such as dirt, water, soap, oil, or grease can change this value.

Edge-bonded Tile: See definition for Pre-grouted Tile.

Facial Defect: The portion of the facial surface of the tile which is readily observed to be nonconforming and which will detract from the appearance or serviceability of the installed tile. Examples of such defects include, but are not limited to: pinholes, contaminants, chips, cracks, scratches, and glaze application errors.

Field Tile: A general term for the tile used in the majority of an installation.

Floor Tile: A manufacturer specified ceramic tile primarily for use on floors, but also suitable for use on walls and countertops, and having a facial area of 9 inch^2 (5806 mm^2) or more.

Floor-Wall Coordinating Tile: Wall tile designed to the same basic visual characteristics as corresponding floor tile, intended for use in the same installation.