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Standard Terminology for Fiber-Reinforced Cement Products¹

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1. Scope*

1.1 This standard covers definitions pertaining to fiber-reinforced cement products under the jurisdiction of Committee C17.

1.2 *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

- C150/C150M Specification for Portland Cement
- C595/C595M Specification for Blended Hydraulic Cements
- C966 Guide for Installing Asbestos-Cement Nonpressure Pipe (Withdrawn 2019)³
- C1185 Test Methods for Sampling and Testing Fiber-Cement Flat Sheet, Roofing and Siding Shingles, and Clapboards
- C1186 Specification for Flat Fiber-Cement Sheets
- C1449/C1449M Specification for Non-Asbestos Fiber-Cement Nonpressure Sewer Pipe
- D1118/D1118M Test Method for Magnetic Rating of Asbestos Fiber and Asbestos Textiles (Withdrawn 2022)³

3. Terminology

accessories, *n*—subordinate material such as fasteners, backer strips, closure strips, ridge and corner rolls, roofing starters and finishing pieces, couplings, gaskets, pipe fittings or other supplementary material necessary for the proper application of primary fiber-reinforced cement products.

American method, *n*—*in shingles*, a method of application for roofing shingles, generally rectangular in shape, to provide double coverage with head lap and no side lap.

AOQL, *n*—The average outgoing quality limit of a sampling plan is the maximum value of the proportion defective accepted on average by that plan. AOQL is the maximum value of the multiplicand of the proportion nonconforming and the probability of acceptance from the sampling plan operating characteristic.

asphalt felt, breather type, *n*—an underlayment sheet material saturated with asphalt, which allows the transmission of water vapor.

autoclaved products, *n*—those that have been treated in a saturated steam atmosphere at between 620 and 1517 kPa (90 and 220 psi.) for at least 6 h, and that contain calcium silicate based binder, including portland cement as defined in Specification C150/C150M or portland-limestone cement, Type IL, as defined in Specification C595/C595M together with silica that can react to form hydrated calcium silicate reaction products.

backer strips, *n*—*in shingles*, water-repellent strips of asphalt-coated felt applied behind each joint where the vertical edges of two shingles meet.

batten, *n*—a long narrow strip, either flat or corrugated, used to conceal the joints in butt joint application of flat or corrugated sheets.

caulking, *n*—a material ranging in physical characteristics from plastic, to solid, to preformed, used to seal and waterproof joints and overlaps in structures, other assemblies, or portions thereof where movement may occur.

cement-bonded particle board, *n*—manufactured flat sheets of hydraulic cementitious matrices and fibrous wood particles.

clip, *n*—*in shingles*—See **storm anchor**.

closure strip, *n*—an asphalt or rubber preformed filler strip having the same shape and pitch as the corrugated product, used to close openings in the corrugated sheets at window beads, eaves, lower edge of siding, and similar places.

compacted backfill, *n*—*in pipe laying*, backfill material which has been compacted to the density specified by the engineer.

¹ This terminology is under the jurisdiction of ASTM Committee C17 on Fiber-Reinforced Cement Products and is the direct responsibility of Subcommittee C17.03 on Terminology and Harmonization.

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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.

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

*A Summary of Changes section appears at the end of this standard

conduit, *n*—pipe used to protect wires for electric-power or communication systems, for both underground and exposed situations.

constructor, *n*—*in pipe laying*, the party that furnishes the work and materials for placement and installation.

corner rolls, *n*—half-round units used to trim and flash corners in corrugated application.

corrugated, *adj*—pertaining to a sheet product having a design of sinusoidal alternating ridges and valleys manufactured according to a specific pitch.

coupling, *n*—*in fiber-cement nonpressure sewer pipe*, a section for joining nonpressure sewer pipe, that when properly installed with the proper accessories, develops an assembled joint equivalent in serviceability and strength to the pipe sections, when tested in accordance with 6.3.1 of Specification **C1449/C1449M**.

coupling, *n*—*in fiber-cement conduit, underdrain and storm drain pipe*, component made from a larger diameter pipe of the same type or class, or of Type II and a higher class, or produced otherwise to yield at least equal performance, for joining fiber-cement pipe that when properly installed, forms a silt tight joint, allows alignment corrections and slight changes in direction, and provides an assembled joint equivalent in serviceability and strength to the pipe sections. Alternatively, for storm drain couplings, sleeves made from other materials that, when properly installed, develop sufficient tightness to prevent the surrounding soil from entering the drain, may be used as couplings.

crushing strength, *n*—*for pipes*, a property of solid material that indicates its ability to withstand collapse from external, compressive loads.

cure, *n*—the reaction mechanism in which the physical, chemical and mechanical properties of a hydraulic cement change through the phases of slurry-paste-solid with time, with or without external heat, in the presence of water.

cure, air or ambient, *n*—the method of setting or hardening products wherein the portland cement is allowed to hydrate at atmospheric conditions of pressure, preferably under conditions to inhibit water and heat loss.

cure, autoclave, *n*—a means for accelerating the cure reaction at elevated temperature and pressure in saturated steam, where reactive siliceous material has been incorporated into the cementitious matrix, such that a hydrothermal reaction takes place between the cement and silica yielding calcium silicate.

curing agent, *n*—an additive incorporated in the constituents of products producing a change in chemical activity between the cementitious components with an increase or decrease in the rate of cure.

deflection, *n*—the linear distance that a test specimen bends at the center from no load to stated load, when loaded as a beam with the load applied at the center of the span.

density, *n*—mass per unit volume expressed in g/cm³ or lb/ft³.

drawings, *n*—*in pipe laying*, drawings prepared by the purchaser to show the location and details for the construction of the pipeline and appurtenances.

Dutch or Scotch method, *n*—*in shingles*, a method of application for roofing shingles which are rectangular in shape and lap at the top and one side to form either a square or rectangular pattern.

efflorescence (bloom), *n*—a white powdery substance occurring on the surface of products and caused by the migration of soluble salts, followed by precipitation of calcium hydroxide at the surface followed by an atmospheric carbonation.

engineer, *n*—*in pipe laying*, the person, firm, corporation, or government agency acting for the owner as his duly authorized agent in the designing and engineering of the project.

fiber, *n*—*in fiber-cement*, any material in a form such that it has a minimum length to average maximum transverse dimension of 10 to 1, a maximum cross-sectional area of 5.06×10^{-2} mm² (corresponding to a circular cross section of 0.254 mm in diameter) and a maximum transverse dimension of 0.254 mm.

fiber, *n*—*in fiber-reinforced cement*, any material in a form such that it has an aspect ratio of at least 10 and a typical transverse dimension less than 2 mm.

fiber-cement products, *n*—manufactured thin section composites of hydraulic cementitious matrices and discrete non-asbestos fibers.

fiber-mat reinforced products, *n*—manufactured thin section composites of hydraulic cementitious matrices and non-asbestos fibers in two-dimensional scrim(s).

fiber-reinforced, *adj*—imparting improved properties to hydraulic cement matrices due to the inclusion of non-asbestos fibers.

fibrous, *adj*—pertaining to, consisting of, or containing fibers.

filler, *n*—an inert inorganic material used as an extender or mineral diluent in the constituents of products which does not add to the cementitious value of the cement.

fitting, *n*—*for pipes*, component such as wyes, tees, and adaptors for use in laying pipe, such that, when properly installed yields an assembly equivalent in serviceability and strength to the pipe sections.

fitting, *n*—*for conduit*, component such as adapters, reducers, increasers, bends and bell ends, for use in laying conduit and made to such dimensions as will provide equivalent strength and silt-tight joints when assembled with the conduit.

flat sheets, Type A, *n*—sheet intended for exterior applications, where it may be subjected to the direct action of sun, rain, or snow, and when tested in accordance with Test Methods **C1185**, does demonstrate compliance with Specification **C1186**.