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Standard Terminology of Nails for Use with Wood and Wood-Base Materials[1]

This standard is issued under the fixed designation F547; 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.

INTRODUCTION

The terms included in these definitions are listed in alphabetical order under nine headings to facilitate quick reference and in certain cases are sub-categorized. They are intended to apply to metal nails. Omitted are terms relating to tacks, pins, drift pins, dowels, studs, spikes, staples, and other fasteners, such as nail plates. Also omitted are terms relating to the testing and the performance of nails, that is, their drivability, withdrawal resistance, lateral load transmission, creep, protrusion resistance, and splitting; and methods of use, such as face, toe, side, and end-nailing, spacing, loading conditions, etc. These subject matters will be covered in a separate definition of terms relating to mechanical fasteners.

Common acceptance and usage are the basis for most of the definitions listed. In some instances, this common usage results in more than one definition for a given term. In other cases, registered trademarks have become generic in nature; hence, they are included among the terms listed.

Any such listing cannot be complete. As additional terms are referred to the Society's attention, they will be included.

An asterisk (*) behind the name of a nail indicates that this particular nail type is described in Specification F1667/F1667M.

Whereas dimensions are normally not part of a definition, they are included in this standard because they are essential in fully describing the fastener under consideration. Nail size designations are shown as length x shank diameter (example 3 × 0.131) All nail and wire dimensions referenced in this standard are in inches only. For SI dimension, reference F1667/F1667M where applicable.

The definitions are listed under the following headings:

1. Referenced Documents

1.1 *ASTM Standards:*[2]

A510/A510M Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel, and Alloy Steel

A1040 Guide for Specifying Harmonized Standard Grade Compositions for Wrought Carbon, Low-Alloy, and Alloy Steels

A1059/A1059M Specification for Zinc Alloy Thermo-Diffusion Coatings (TDC) on Steel Fasteners, Hardware, and Other Products

F1667/F1667M Specification for Driven Fasteners: Nails, Spikes, and Staples

2. Terminology

2.1 NAIL

nail—straight, slender fastener, usually pointed and headed; normally 6 in. or less in length; designed to be driven; to hold two or more pieces together or to act as support. (See **screw nail; drive screw.**)

DISCUSSION—In contrast to screw—fastener, usually pointed and headed; designed to be turned with a screwdriver or other device; having in its simplest form one or two continuous spiral threads (such as a wood screw thread) or a helical thread (such as a machine screw thread) or combinations thereof (such as a sheet-metal screw thread).

2.2 NAIL TYPES USED IN ENGINEERED AND NON-ENGINEERED BUILDING CONSTRUCTION

2.2.1 FRAMING NAILS

box nail*—carbon steel bright, zinc coated or other coating as specified, stainless steel or aluminum, smooth or deformed shank 1 × 0.058 to 5 × 0.162 nails, made of lighter-gage wire than common nails and sinkers, with flat 11⁄64 to 13⁄32 head and medium diamond point.

cooler nail*—carbon steel or stainless steel, round smooth or deformed shank, bright or zinc coated or other coating as specified 1 × 0.062 to 2⅞ × 0.120 nails with flat 11⁄64 to 19⁄64 head and medium diamond point, with head diameter same as or smaller than that of common wire nail of same length.

metal hardware nail*—carbon steel- bright or zinc coated, or stainless steel, smooth or ring shank 1¼ × 0.131 to 3½ × 0.162 flat round head 0.281, diamond point meeting the minimum bending yield requirements of Supplementary section S1 and Table S1.1 and S1.2 of Specification F1667/F1667M.

post-frame ring shank nail*—carbon steel, hardened carbon steel or stainless steel, bright or zinc coated, ring shank nail, ranging from 3 × 0.135 to 8 × 0.207, with specific dimensional values of ring geometry, flat head and diamond point, meeting minimum bending yield requirements of Supplementary Section S1 and Table S1.1 or Table S1.2 of Specification F1667/F1667M.

power-tool driven common nail*—steel-bright, zinc coated or other coating as specified; stainless steel; aluminum, smooth or deformed shank, ranging from 1¼ × 0.080 to 4½ × 0.162 flat full, altered heads or T-head; head dimensions as specified in order to be driven by power-tool, diamond, chisel, needle or no point

sinker*—steel-bright or coated as specified, smooth shank, 1⅛ × 0.067 to 5¾ × 0.244 nails with 11⁄64 to ½ sinker head and medium diamond point, with diameter of head smaller than that of cooler and common nail of same designation.

steel common nail*—steel-bright, zinc coated or other coating as specified, or stainless steel, smooth shank, 1 × 0.072 to 6 × 0.262 nails with flat 11⁄64 to 17⁄32 head and medium diamond point. Diameter is larger than that for sinkers, coolers, corkers, and box nails of same length.

2.2.2 ROOFING (SHINGLES, TILE, UNDERLAYEMENT)

aluminum common nail*—smooth or square barbed shank, aluminum-alloy, 1 × 0.099 to 4 × 0.199 nails with flat 5⁄32 to 0.460 head and medium diamond point

aluminum roofing nail* —flat head 0.438 diameter, round smooth or deformed shank ¾ × 0.120 to 2½ × 0.145 with diamond point.

cap-nail hand-driven roofing nail*—steel-bright or zinc coated, stainless steel, diamond point, smooth or deformed shank ½ × 0.105 to 8 × 0.162 Caps 1.00 round metal or plastic, square 1.00 flat or domed. With metal caps both nail / cap bright or both galvanized. Nail– cap integral units at manufacturing

cap-nail power-driven roofing nail* —steel-bright or zinc coated, stainless steel, diamond point, smooth or deformed shank 1¼ × 0.080 to 2 × 0.120 Caps 1.00 round or 1.00 square metal or plastic. With metal caps both nail / cap bright or both galvanized. Nail-cap assembled at point of application.

[1] This terminology is under the jurisdiction of ASTM Committee F16 on Fastenersand is the direct responsibility of Subcommittee F16.05 on Driven and Other Fasteners.

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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.