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Standard Terminology of Nails for Use with Wood and Wood-Base Materials¹

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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 x 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:

- 2.1 Nail
- 2.2 Nail Types used in Engineered and Non-Engineered Building Construction
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- 2.6 Nail Heads Terminology
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- 2.8 Nail Shank Terminology
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1. Referenced Documents

1.1 *ASTM Standards*:²

A510/A510M Specification for General Requirements for

¹ This terminology is under the jurisdiction of ASTM Committee F16 on Fasteners and 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.

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 2⁷/₈ × 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 1¹/₄ × 0.131 to 3¹/₂ × 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 1¹/₄ × 0.080 to 4¹/₂ × 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, 1¹/₈ × 0.067 to 5³/₄ × 0.244 nails with 1¹/₆₄ to 1¹/₂ 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 5¹/₃₂ to 0.460 head and medium diamond point

aluminum roofing nail* —flat head 0.438 diameter, round smooth or deformed shank 3³/₄ × 0.120 to 2¹/₂ × 0.145 with diamond point.

cap-nail hand-driven roofing nail*—steel-bright or zinc coated, stainless steel, diamond point, smooth or deformed shank 1¹/₂ × 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 1¹/₄ × 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.

copper common nail*—bright, solid-copper, $\frac{5}{8} \times 0.065$ to 6×0.284 nails with flat head and medium diamond point.

copper-clad roofing nail*—copper-clad wire, flat head 0.375 diameter, smooth shank 0.120 diameter 1 to $2\frac{1}{4}$ long.

purlin nail,—galvanized, regular-stock-steel, aluminum-alloy or copper, 4 to $16 \times \frac{1}{8}$, 0.135 or 0.148 nails of desired length with flat $\frac{11}{32}$, curved or $\frac{15}{32}$ head, $\frac{9}{16}$ cast lead head or plastic washer and sheared-square or diamond point; for securing corrugated roofing to I-beams.

roofing-tile nail—galvanized, regular-stock-steel, 5 to 7 \times 0.148 nails with flat $\frac{5}{16}$ head and medium diamond point.

shingle nail*—(*Aluminum*) flat head 0.191 to 0.312 diameter, diamond point, smooth or deformed shank $1\frac{1}{4} \times 0.101$ to $1\frac{3}{4} \times 0.113$

(*Steel*) bright or zinc coated, flat head 0.205 to 0.406 diameter, smooth or barbed shank $1\frac{1}{4} \times 0.092$ to 2×0.113 .

shake nail, cedar-shake or shingle nail, wood-shake face nail—hot dip galvanized steel or stainless steel, smooth or ring shank, $1\frac{1}{4} \times 0.080$ to 2×0.092 with flat 0.19 min head, diamond point

slating nail*—galvanized, regular-stock-steel, 1×0.106 to 2×0.148 nails with slightly countersunk $\frac{5}{16}$ to $\frac{7}{16}$ flat head and medium diamond point. Also, aluminum-alloy, 1×0.106 to $1\frac{1}{2} \times 0.135$ nails with large flat $\frac{5}{16}$ to $\frac{3}{8}$ head and medium diamond point. Also, solid copper, $\frac{7}{8} \times 0.109$ to 2×0.135 nails with large flat head and medium diamond point.

steel-reinforced head roofing nail*—steel bright or zinc coated, flat reinforced head 0.625 diameter, smooth round shank $\frac{3}{4}$ to $1\frac{1}{4}$ long and 0.106 and 0.120 diameter.

steel roofing nail*—steel bright or zinc coated, stainless steel nail, flat head 0.375 to 0.500 diameter, round smooth or ring shank 0.106 to 0.162 diameter $\times \frac{3}{4}$ to $4\frac{1}{2}$ long, with diamond point. and 1×0.120 to $1\frac{3}{4} \times 0.135$ for stainless steel.

steel shingle nail*—steel bright or zinc coated, flat head 0.250 to 0.406 diameter, diamond point, with $1\frac{1}{4} \times 0.092$ to 2×0.113 smooth or ring round shank.

umbrella head roofing nail*—zinc coated steel, leak resistant umbrella head, diamond point, round smooth or deformed shanks $1\frac{3}{4} \times 0.135$ to 3×0.148 .

underlay nail, underlayment nail*—bright, stiff-stock or hardened-steel, annularly threaded, 1×0.080 to 3×0.148 nails with flat or slightly countersunk $\frac{3}{16}$ to $\frac{5}{16}$ head and medium diamond point.

washed aluminum roofing nail*—0.438 diameter flat head with neoprene washer under head, diamond point, smooth or deformed shank $1\frac{3}{4} \times 0.135$ to $2\frac{1}{2} \times 0.145$.

washed steel roofing nail*—steel bright or zinc coated nail, 0.438 diameter flat head with elastomer washer under head, diamond point, smooth or ring shank $1\frac{3}{4} \times 0.135$ to $2\frac{1}{2} \times 0.145$

2.2.3 ROOF SHEATHING, WALL SHEATHING, WALL SIDING NAILS

Sheathing Nails

diaphragm/sheathing nail—bright, galvanized, hardened steel or stainless steel, smooth or deformed shank, 2×0.113 to 3×0.148 with 0.266 to 0.312 diameter flat head and diamond point. Length dependent upon sheathing thickness and minimum penetration requirements.

fiberboard nail—bright or electroplated, regular-stock-steel or hardened-steel 1×0.054 to 2×0.062 nails with flat $\frac{3}{32}$ or $\frac{7}{64}$ head and medium needle point.

hardboard nail—slender, usually colored (baked-lacquer finished), stiff-stock or usually hardened-steel, usually annularly threaded, 1 to $1\frac{5}{8} \times 0.058$ nails with small flat head and long needle point for fastening plain or prefinished $\frac{1}{8}$ and $\frac{1}{4}$ hardboard for interior applications. Also, slender bright or colored (baked-lacquer finished), galvanized, stiff-stock, or usually hardened-steel, usually helically threaded, 2 to 3×0.105 and 0.120 nails with countersunk $\frac{3}{16}$ or $\frac{13}{64}$ head and pilot needle point for fastening hardboard for exterior applications.

roof sheathing ring shank nail*—bright, galvanized or stainless steel ring shank nail, ranging from $2\frac{3}{8} \times 0.113$ to 3×0.131 , with specific dimensional values of ring geometry, flat head, diamond point, meeting minimum bending yield requirements of Supplementary Section S1 and Table S1.2 of Specification [F1667/F1667M](#).

roof-deck nail—galvanized, steel and bright steel, hardened steel, smooth or annularly threaded shank, 3×0.135 to $4\frac{1}{2} \times 0.177$ nails with flat or slightly countersunk $\frac{9}{32}$ to $\frac{25}{64}$ head and medium diamond point.

Siding Nails

aluminum-siding nail—smooth shank or helically threaded, aluminum-alloy 1×0.099 to $2\frac{1}{2} \times 0.135$ nails with flat $\frac{1}{4}$ to $\frac{5}{16}$ flat head and medium diamond point

common siding nail—bright or colored (baked-lacquer finished), galvanized, regular-stock-steel or hardened-steel, smooth shank or threaded, $1\frac{3}{4} \times 0.080$ to 3×0.128 nails with flat $\frac{5}{32}$ to $\frac{19}{64}$ head and medium diamond point.

insulated-siding nail—bright or colored (baked-lacquer finished) aluminum-alloy, $1\frac{1}{2} \times 0.113$ to $2\frac{1}{2} \times 0.135$ nails with flat $\frac{7}{32}$ to $\frac{9}{32}$ flat head and medium diamond point.

wood-siding nail—bright and colored (baked-lacquer finished), smooth shank or helically threaded, aluminum-alloy, $1\frac{7}{8} \times 0.106$ to $2\frac{7}{8} \times 0.148$ nails with $\frac{9}{64}$ to $\frac{1}{32}$ casing or $\frac{17}{64}$ to $\frac{5}{16}$ sinker head and medium or blunt diamond point. Also, bright or colored (baked-lacquer finished), stainless steel, annularly threaded, $2\frac{1}{8}$ and $2\frac{3}{8} \times 0.083$ and 0.095 nails with slightly countersunk $\frac{3}{16}$ head and medium diamond point. (See **common siding nail**.)

2.2.4 INTERIOR AND FLOORING NAILS

brad*—small nail with small head.