



ICC-ES Evaluation Report ESR-4398

Reissued December 2023

This report is subject to renewal May 2024.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 05 23.13—Nails

REPORT HOLDER:

MASTER NAILS AND PINS MANUFACTURING LLC

ADDITIONAL LISTEES:

ACCENT BUILDING MATERIALS
“STRIKER”-BRAND NAME

FASTENING CARE
“MPROVE”-BRAND NAME

GRABBER CONSTRUCTION PRODUCTS, INC.
“FRAMING NAILS”-BRAND NAME

HUTTIG BUILDING PRODUCTS INC.
“HUTTIG-GRIP FASTENERS”-BRAND NAME

KRATOS BUILDING PRODUCTS
“KRATOS”-BRAND NAME

SHANDEX CO.
“ARMOR STEEL”-BRAND NAME

EVALUATION SUBJECT:

NAILS

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2018 and 2015 *International Building Code*® (IBC)
- 2018 and 2015 *International Residential Code*® (IRC)

Properties evaluated:

- Bending yield strength
- Compliance with material requirements and tolerances of ASTM F1667-17
- Compliance with prescriptive requirements of the IBC and IRC
- Use in diaphragms, shear walls and braced walls

2.0 USES

The nails described in this report are used for engineered and prescriptive structural connections between wood members.

3.0 DESCRIPTION

The nails have full round heads or clipped heads and diamond points. The nails are formed from bright or hot-dip galvanized (HDG) carbon steel wire. See Table 1 for nail dimensions and additional information, including bending yield strength. Dimensional tolerances conform to ASTM F1667. The nails are supplied in bulk packages or are collated for use in power tools

4.0 DESIGN AND INSTALLATION

4.1 Design:

4.1.1 Engineered Structural Connections: The nails described in this report comply with the requirements of IBC Section 2303.6 and may be used in connections designed in accordance with the ANSI/AWC National Design Specification (NDS) for Wood Construction, using the design bending yield strengths and diameters shown in Table 1. The reference head pull-through design values must be determined in accordance with Section 12.2.5 of the 2018 NDS.

Convert withdrawal design values from lbf/inch to N/mm by multiplying by 0.175. Convert lateral and pull-through design values from lbf to N by multiplying by 4.45.

4.1.2 Engineered Diaphragms and Shear Walls: The nails listed in Table 2 comply with the requirements of IBC Section 2303.6 and head area requirements defined in the ICC-ES Acceptance Criteria for Nails (AC116) and are equivalent to the code prescribed nails listed in Table 2 for use in engineered diaphragms and shear walls designed in accordance with the AWC Special Design Provisions for Wind and Seismic (SDPWS) which is referenced in the IBC.

4.1.3 Prescriptive Framing Connections: The nails comply with the requirements of IBC Section 2303.6 and may be used in framing connections, where the nails have the same shank type (smooth or deformed) and size (diameter and length) as prescribed in IBC Table 2304.10.1 or IRC Table R602.3(1), as applicable.

4.1.4 Prescriptive Attachment of Sheathing: The nails listed in Table 2 comply with the requirements of IBC Section 2303.6 and head area requirements defined in

AC116. The nails are equivalent to the code prescribed nails listed in Table 2 for attachments of sheathing to wood framing in accordance with IBC Table 2304.10.1 or IRC Tables R602.3(1) and R602.3(3), as applicable.

4.1.5 Prescriptive Use with Metal Connectors: The nails may be used where nails of the same dimension and the same or lesser bending yield strength are prescribed in an ICC-ES evaluation report on the metal connector.

4.2 Installation:

The nails must be installed in accordance with this report; the report holder's published installation instructions; the approved plans, if applicable; and the applicable provisions of the code.

The nails described in this report are packaged for use in power tools recommended by the report holder. Individual nails may be manually driven.

Edge distances, end distances, and spacing must be sufficient to prevent splitting of the wood and should be in accordance with the applicable requirements of NDS Section 12.1.6.

The HDG nails may be used in treated wood in accordance with IBC Section 2304.10.5.

5.0 CONDITIONS OF USE

The nails described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1 The nails must be installed in accordance with this report, the published installation instructions and the approved plans, as applicable. In the case of a conflict amongst these documents, the most restrictive requirements govern.
- 5.2 Use of bright nails in chemically treated wood, such as pressure-, preservative- or fire-retardant-treated wood and/or in exterior or exposed conditions, is not allowed.
- 5.3 The nails are manufactured under a quality control program with inspection by ICC-ES.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Nails (AC116), dated March 2018.

7.0 IDENTIFICATION

- 7.1 Nails are packaged in containers or cartons bearing the report holder or listee's name, the nail description

(shank type, length and diameter) and the evaluation report number (ESR-4398).

- 7.2 The report holder's contact information is the following:

MASTER NAILS AND PINS MANUFACTURING LLC
AL GHAIL INDUSTRIAL ZONE
POST OFFICE BOX 29108
AL GHAIL, RAS AL KHAIMAH
UNITED ARAB EMIRATES
+971 7 204 1215
www.masternailsuae.com

- 7.3 The additional Listees' contact information is the following:

ACCENT BUILDING MATERIALS
10131 FARM TO MARKET 2920
TOMBALL, TEXAS 77375
(262) 757-8195
www.accentbuild.com

FASTENING CARE
5681 BEACH BOULEVARD, SUITE 100
BUENA PARK, CALIFORNIA 90621
(562) 923-4300
www.fasteningcare.com

GRABBER CONSTRUCTION PRODUCTS, INC.
5255 WEST 11000 NORTH SUITE 100
HIGHLAND, UTAH 84003
(801) 492-3880
www.grabberpro.com

HUTTIG BUILDING PRODUCTS INC.
555 MARYVILLE UNIVERSITY DRIVE, SUITE 400
SAINT LOUIS, MISSOURI 63141
(314) 216-2600
www.huttig.com

KRATOS BUILDING PRODUCTS
12901 NICHOLSON ROAD, SUITE 330
FARMERS BRANCH, TEXAS 75234
(844) 864-2155
www.kratosbp.com

SHANDEX CORPORATION
400 KELBY STREET, 17TH FLOOR
FORT LEE, NEW JERSEY 07024
(201) 326-7600
www.shandexinc.com

TABLE 1—NAILS

NOMINAL DIAMETER (inch)	HEAD TYPE	NOMINAL HEAD DIAMETER (inch)	SHANK TYPE ¹	FINISH ²	BENDING YIELD STRENGTH, F_{yb} (psi)	PACKAGING
0.099	Full Round	0.258	S, R, Sc	X, HDG	100,000	Bulk Welded Wire Coil
0.113	Full Round	0.277	S, R, Sc	X, HDG	100,000	Bulk Welded Wire Coil Plastic Strip
0.120						
0.131						
0.148	Full Round	0.293	S, R, Sc	X, HDG	90,000	Bulk, Plastic Strip Welded Wire Coil
0.162		0.325				
0.113	Clipped	0.277	S, R	X, HDG	100,000	Paper Tape
0.120						
0.131						

For **SI**: 1 inch = 25.4 mm, 1 psi = 6.89 kPa

¹S = Smooth, R = Ring, Sc = Screw

²X= bright (ungalvanized); HDG = hot-dip galvanized

TABLE 2—NAILS FOR USE IN ENGINEERED DIAPHRAGMS AND SHEAR WALLS AND PRESCRIPTIVE SHEATHING ATTACHMENTS

NAIL TYPE AND SIZE PRESCRIBED IN THE CODE	DESCRIPTION OF NAILS IN THIS REPORT THAT CAN BE USED
6d common (2" x 0.113")	2" to 2 ¹ / ₂ " x 0.113" Round Head Nails
8d common (2 ¹ / ₂ " x 0.131")	2 ¹ / ₂ " to 3" x 0.131" Round Head Nails
10d common (3" x 0.148")	3" to 3 ¹ / ₂ " x 0.148" Round Head Nails

For **SI**: 1 inch = 25.4 mm