



Lunch & Learn

Nails, Screws and Other Fasteners

12pm January 22nd, 2026

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Disclaimer

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Land Acknowledgement



Welcome!

Today's Session:

- Nails, Screws and other Fasteners
 - Connection Properties
- Code Relationships and References
 - Alternative Nail Sizes

Nails, Screws and Other Fasteners

General Code Context

Part 9

Housing and Small Buildings

Section 9.23

Wood Frame Construction

Subsection 9.23.3

Fasteners and Connectors

Nails

Screws

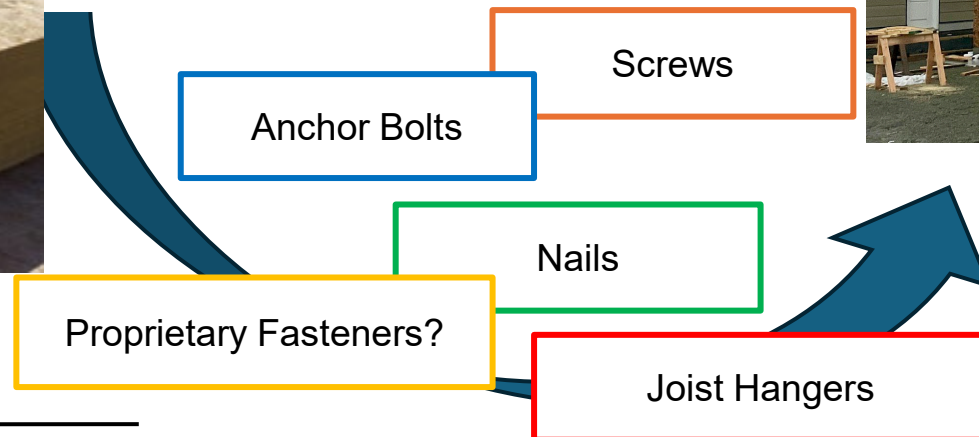
Anchor Bolts

Joist Hangers

Proprietary Fasteners?

Nails, Screws and Other Fasteners

Overview



Nails, Screws and Other Fasteners

Overview



1300+ YEARS OLD, NO NAILS



Nails, Screws and Other Fasteners

Benefits to Modern Connectors

Assembly

Unitization

Connection

Blending of Physical Value

Increase in Production

Economic Utilization of
Resources

Ease of Use

Light Wood Frame Construction



Nails, Screws and Other Fasteners

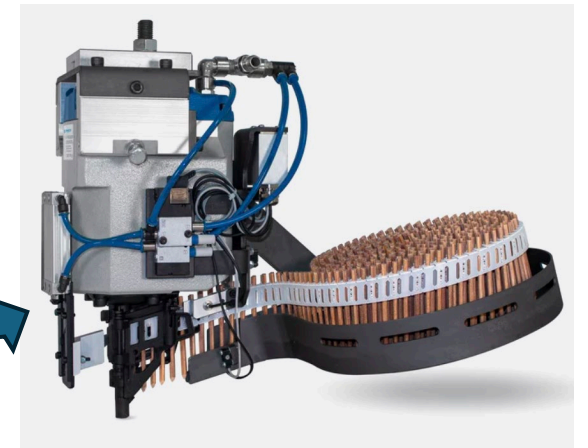
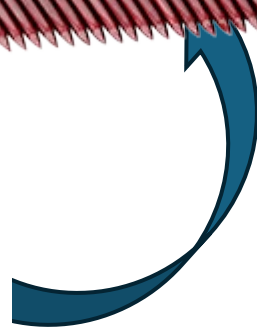
Benefits to Modern Connectors



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paslode.ca



beck-fastening.com

Nails, Screws and Other Fasteners

General Code Context

Part 9

Housing and Small Buildings

Section 9.23

Wood Frame Construction

Subsection 9.23.3

Fasteners and Connectors

Nails

Screws

Anchor Bolts

Joist Hangers

Proprietary Fasteners?

Nails, Screws and Other Fasteners

Nails

Properties

How They're Installed

How They Are Used

Code References



calfast.com/

Nails, Screws and Other Fasteners

Nails - Properties

Stretched Steel Wire

Cut and Deformed

Minimal Heat Treatment

Ductile

Code References



calfast.com/

9.23.3. Fasteners and Connectors

9.23.3.1. Standards for Nails and Screws

1) Except as provided in Sentence (2) and unless otherwise indicated, nails specified in this Section shall be common steel wire nails or common spiral nails conforming to

- a) ASTM F1667, "Standard Specification for Driven Fasteners: Nails, Spikes, and Staples," or
- b) CSA B111, "Wire Nails, Spikes and Staples."

Nails, Screws and Other Fasteners

Nails - How They're Installed

Driven manually or with
power (pneumatic,
battery, fuel)

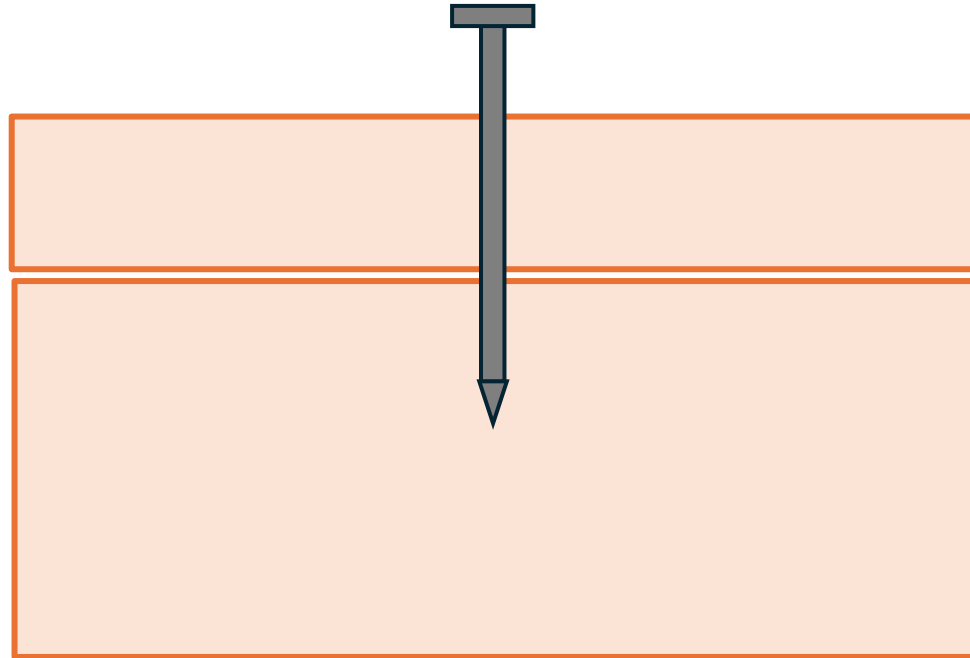
By direct FORCE,
STRAIGHT into wood



The Spruce Hammering Nails 101: Tips for Good Technique

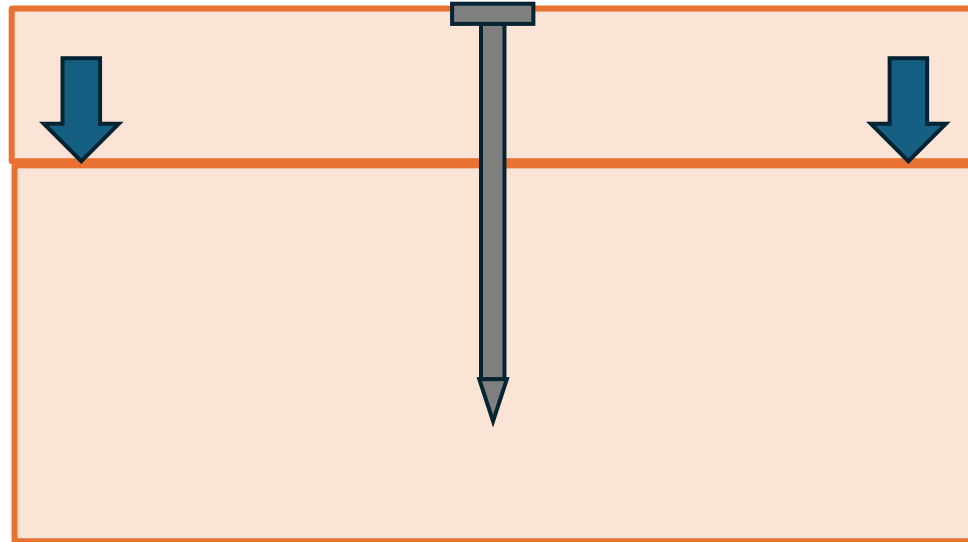
Nails, Screws and Other Fasteners

Nails - How They're Installed



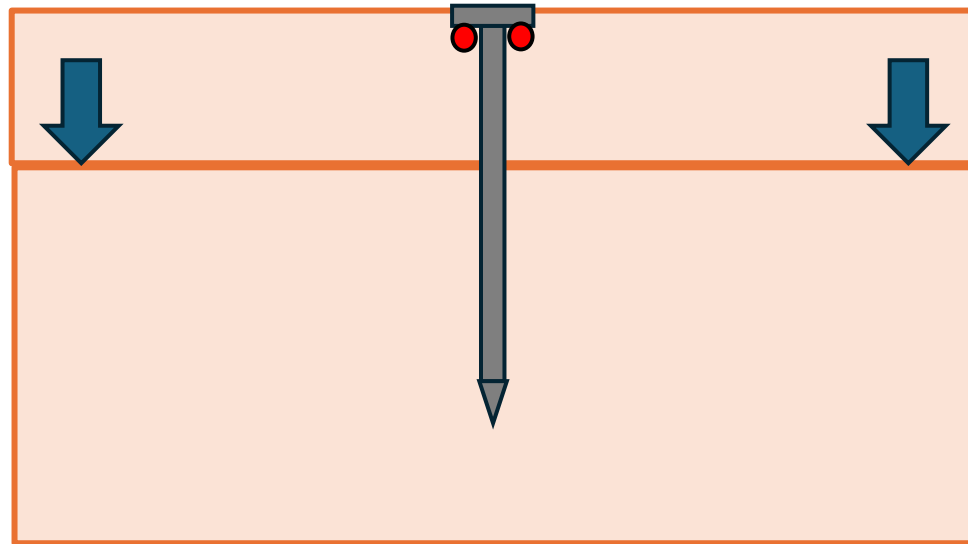
Nails, Screws and Other Fasteners

Nails - How They're Installed



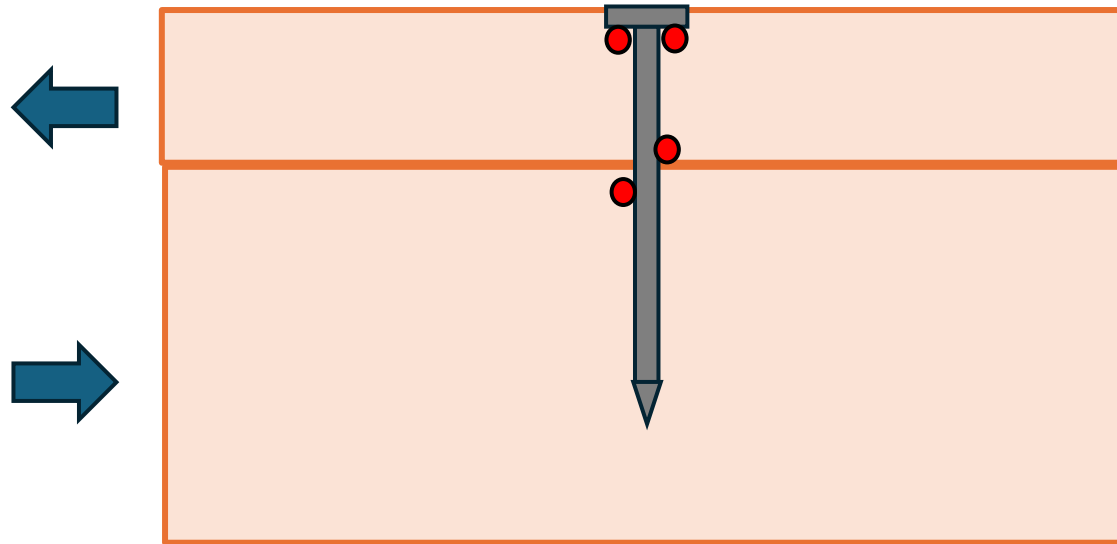
Nails, Screws and Other Fasteners

Nails - How They're Installed



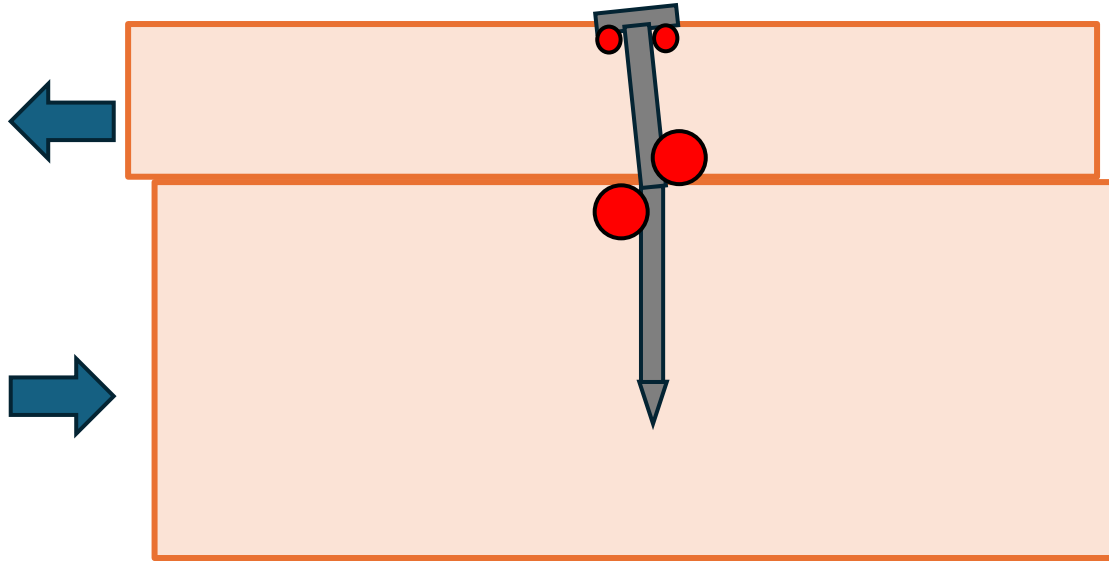
Nails, Screws and Other Fasteners

Nails - How They're Installed



Nails, Screws and Other Fasteners

Nails - How They're Installed



Nails, Screws and Other Fasteners

Nails - Code Requirements for Location, Length, Amount

9.23.3. Fasteners and Connectors



9.23.3.4. Nailing of Framing

9.23.3.5. Fasteners for Sheathing or Subflooring

Fasteners for Subflooring and for Sheathing

Fastening of Roof Sheathing

Fastening of Wall Sheathing in Required Braced Wall Panels

Nails, Screws and Other Fasteners

Nails - Code Requirements for Location, Length, Amount

Table 9.23.3.4.
Nailing for Framing
Forming Part of Sentences 9.23.3.4.(1) and 9.23.14.4.(2)

Construction Detail	Minimum Length of Nails, mm	Minimum Number or Maximum Spacing of Nails (1)
Floor joist or blocking perpendicular to sill plate or top wall plate below – toe nail	82	2 per floor joist or blocking
<i>Rim joist</i> , trimmer joist or blocking – supporting walls with required <i>braced wall panels</i> – to sill plate or top wall plate – toe nail	82	150 mm o.c.
Wood or metal strapping to underside of floor joists	57	2
Cross bridging to joists	57	2 at each end



Location



Length



Amount

What about Nail Diameter?

Nails, Screws and Other Fasteners

Nails - Code Requirements for Diameter

Linkage of Nail Length to
Nail Diameter

What if an alternative
nail Diameter is used?

Table 9.23.3.1.
Diameter of Nails
Forming Part of Sentence 9.23.3.1.(2)

Minimum Length of Nails, mm	Minimum Diameter of Nails, mm
45	2.64
51	2.84
57	2.87
63	3.25

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British Columbia Building Codes 2024

Table 9.23.3.1. (continued)

Minimum Length of Nails, mm	Minimum Diameter of Nails, mm
76	3.66
82	3.66
101 or greater	4.88

Nails, Screws and Other Fasteners

Nails - General Code Requirements

These Code references relate to how nails are installed and how they act in wood

9.23.3.2. Length of Nails

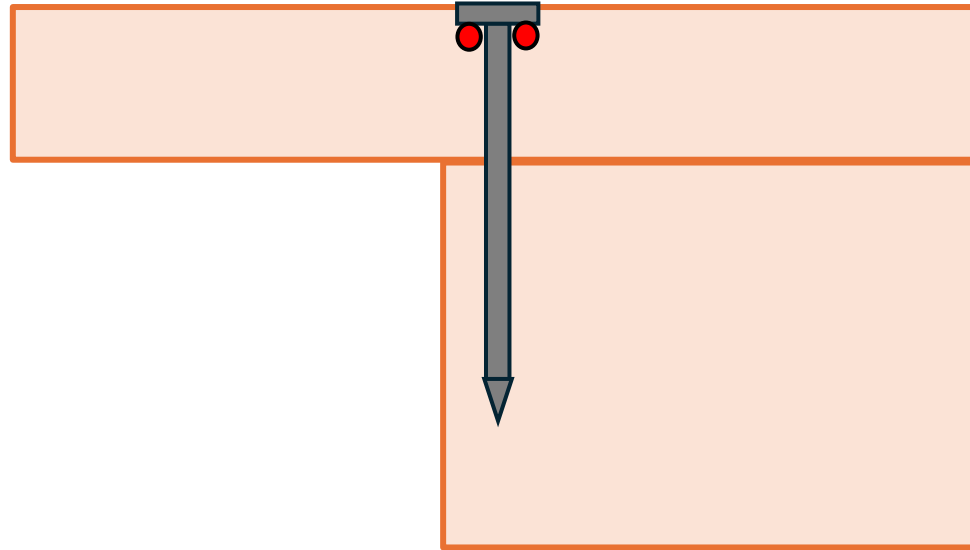
1) All nails shall be long enough so that not less than half their required length penetrates into the second member.

9.23.3.3. Prevention of Splitting

1) Splitting of wood members shall be minimized by staggering the nails in the direction of the grain and by keeping nails well in from the edges. (See Note A-9.23.3.3.(1).)

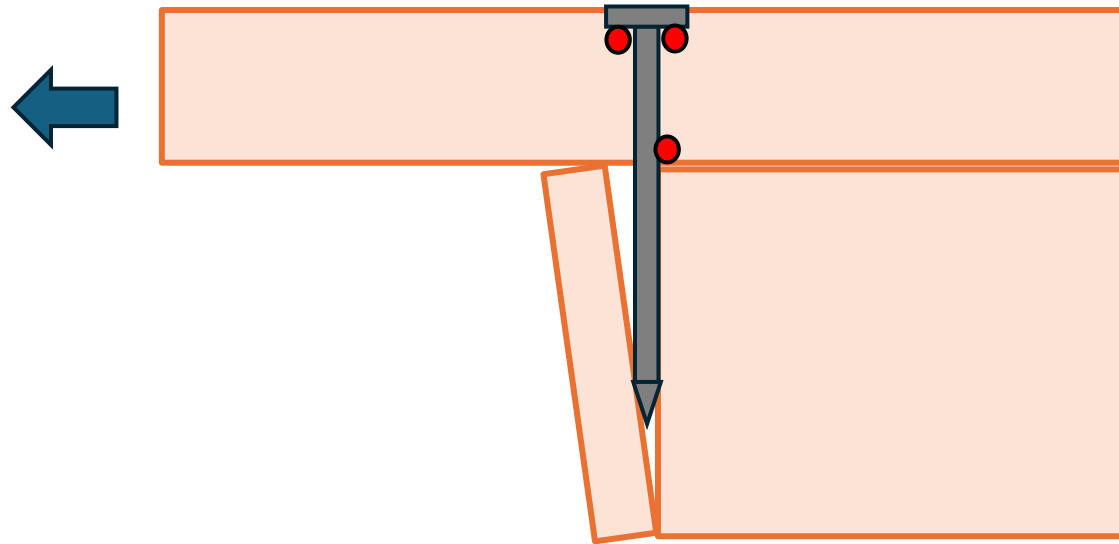
Nails, Screws and Other Fasteners

Nails - How They're Installed



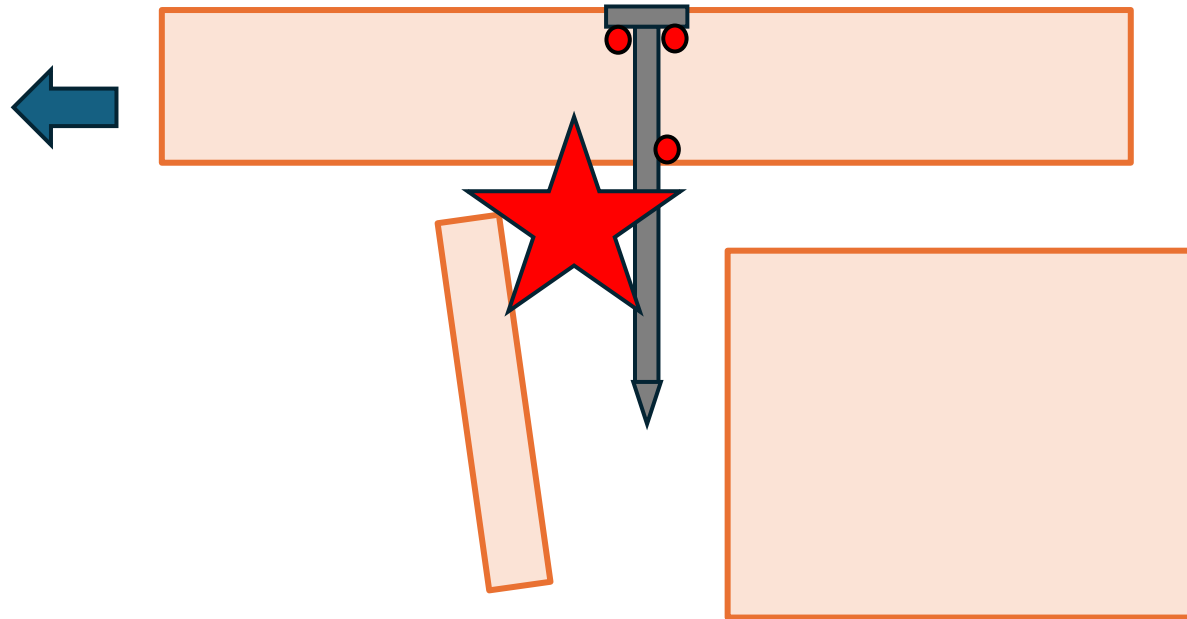
Nails, Screws and Other Fasteners

Nails - How They're Installed



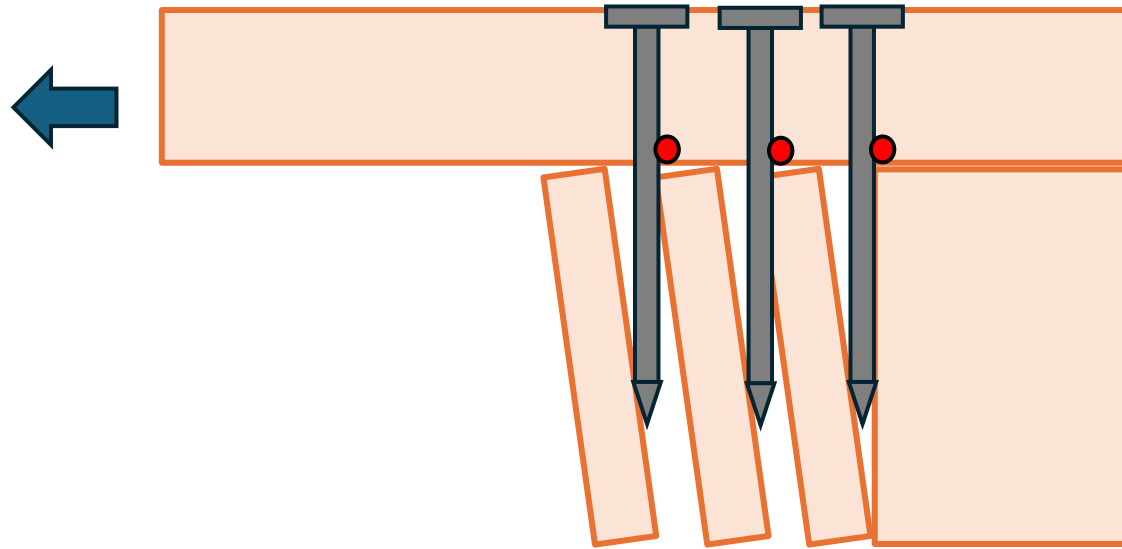
Nails, Screws and Other Fasteners

Nails - How They're Installed



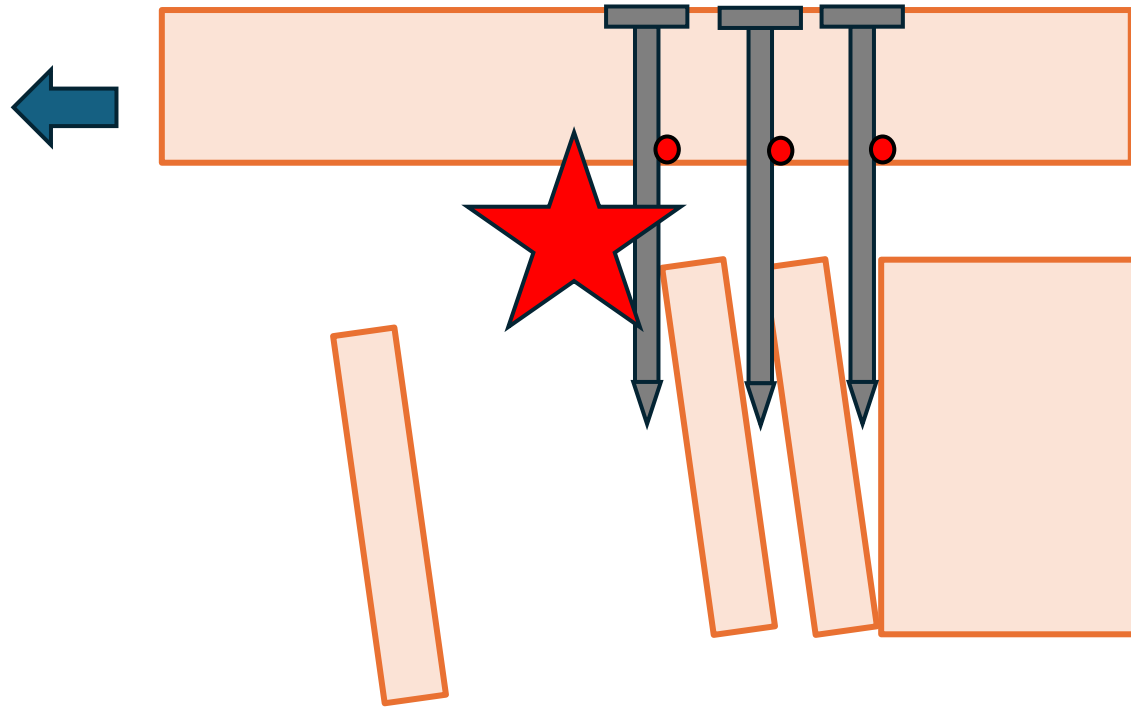
Nails, Screws and Other Fasteners

Nails - How They're Installed



Nails, Screws and Other Fasteners

Nails - How They're Installed



Nails, Screws and Other Fasteners

Nails - Code Requirements

A-9.23.3.3.(1) Prevention of Splitting. Figure A-9.23.3.3.(1) illustrates the intent of the phrase “staggering the nails in the direction of the grain.”

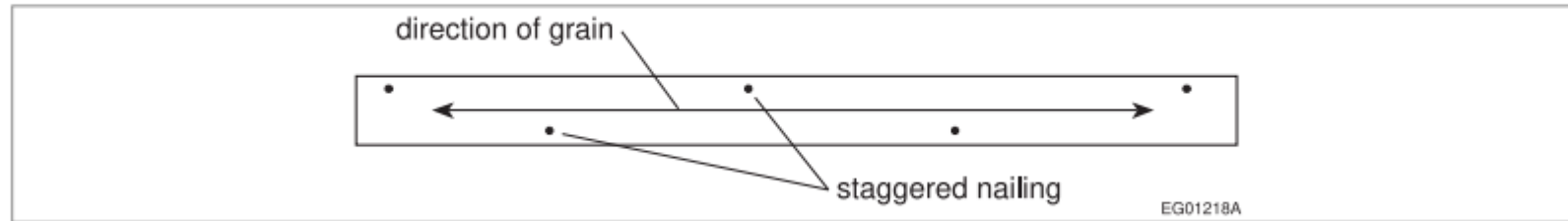


Figure A-9.23.3.3.(1)
Staggered nailing

Nails, Screws and Other Fasteners

Screws - Properties

Properties

How They're Installed

How They Are Used

Code References



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Nails, Screws and Other Fasteners

Screws - Properties

Stretched Steel Wire

Cut and Formed

Heat Treatment

Hardened, Brittle

Code References

9.23.3. Fasteners and Connectors

9.23.3.1. Standards for Nails and Screws

3) Wood screws specified in this Section shall conform to ASME B18.6.1, "Wood Screws (Inch Series)." (See Note A-9.23.3.1.(3).)

A-9.23.3.1.(3) Standard for Screws. The requirement that wood screws conform to ASME B18.6.1, "Wood Screws (Inch Series)" is not intended to preclude the use of Robertson head screws. The requirement is intended to specify the mechanical properties of the fastener, not to restrict the means of driving the fastener.



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Nails, Screws and Other Fasteners

Screws – How They Are Installed

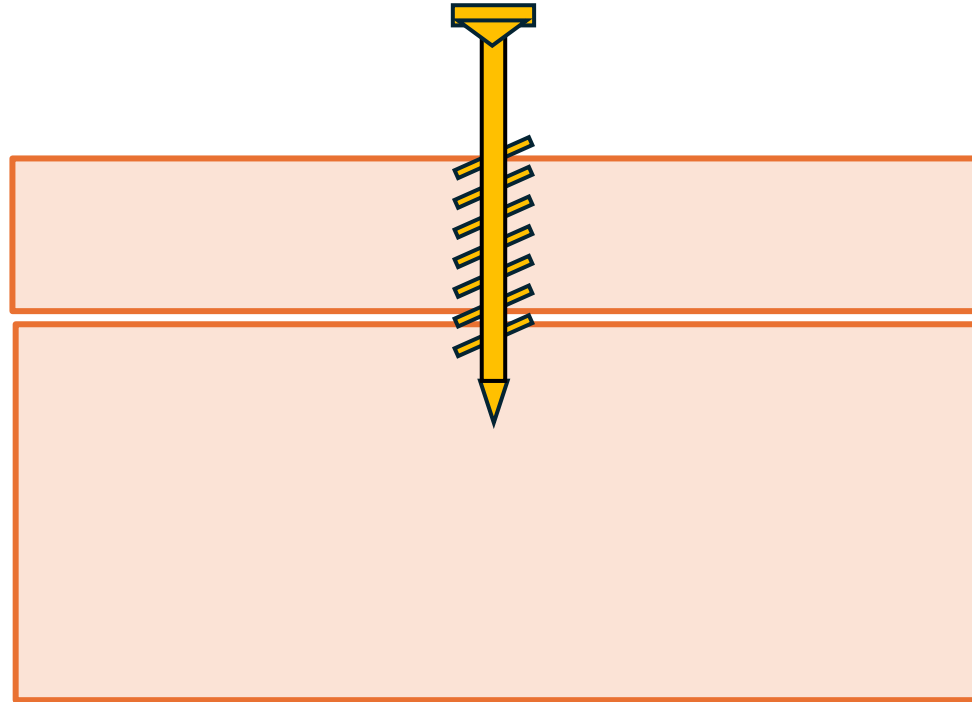
Driven manually or with power (pneumatic, battery, fuel)

By ROTATION that cuts into wood



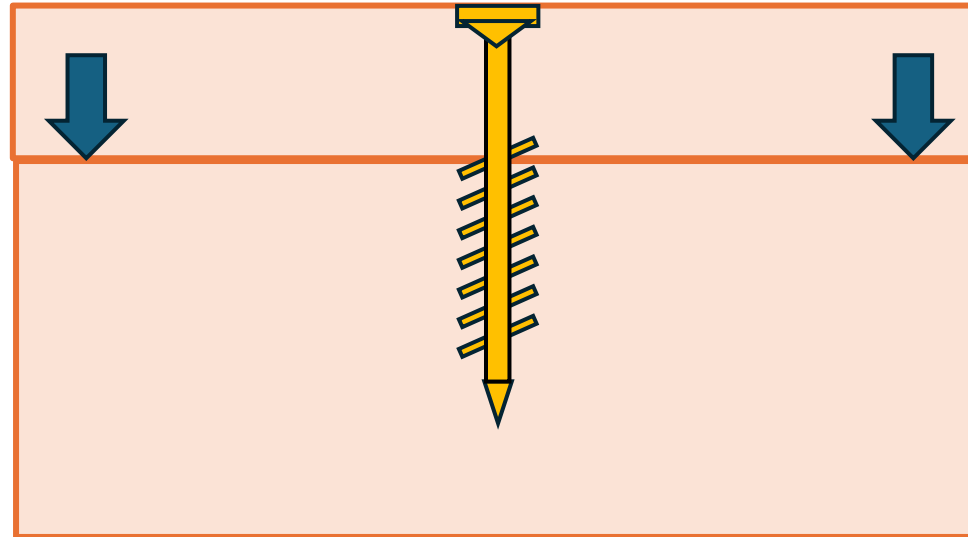
Nails, Screws and Other Fasteners

Screws – How They Are Installed



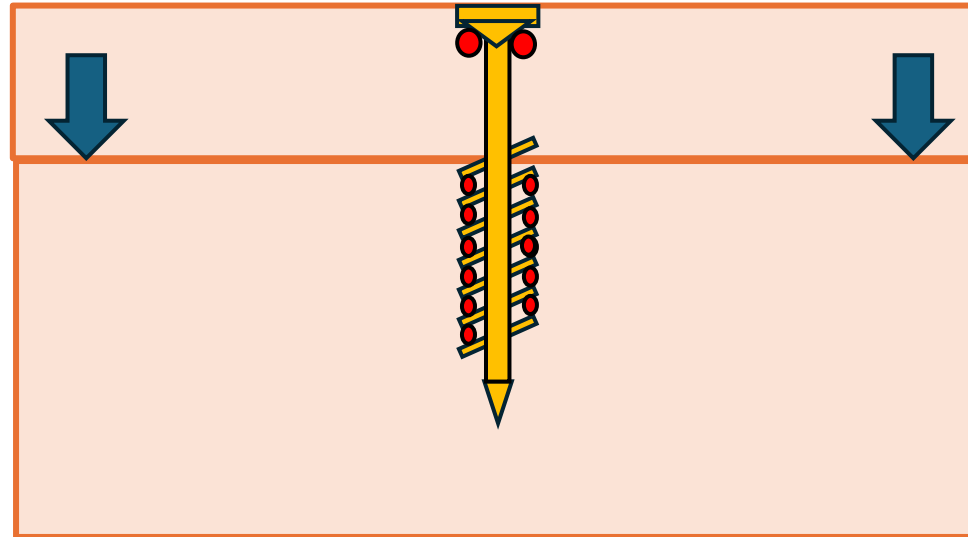
Nails, Screws and Other Fasteners

Screws – How They Are Installed



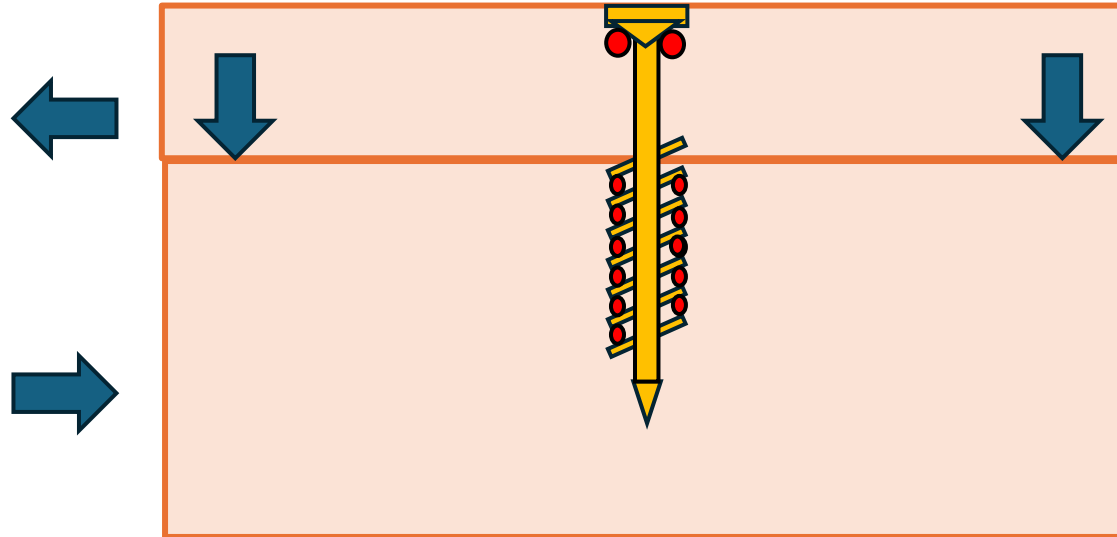
Nails, Screws and Other Fasteners

Screws – How They Are Installed



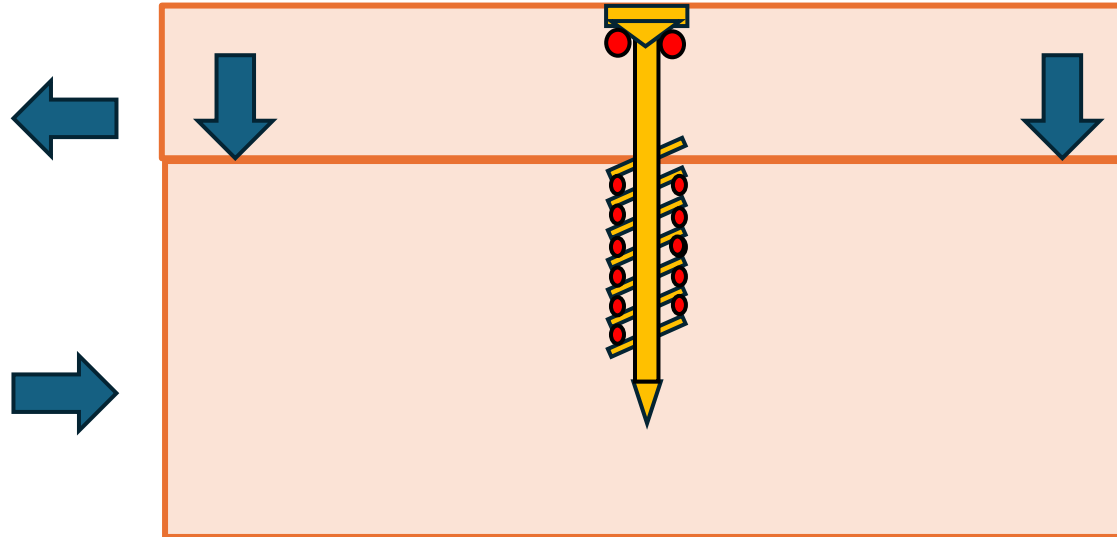
Nails, Screws and Other Fasteners

Screws – How They Are Installed



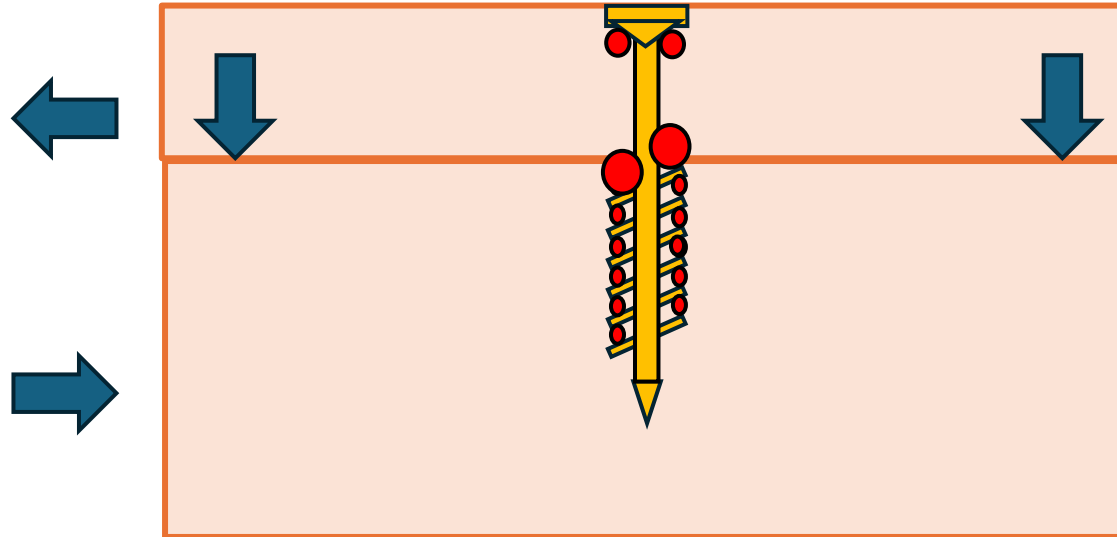
Nails, Screws and Other Fasteners

Screws – How They Are Installed



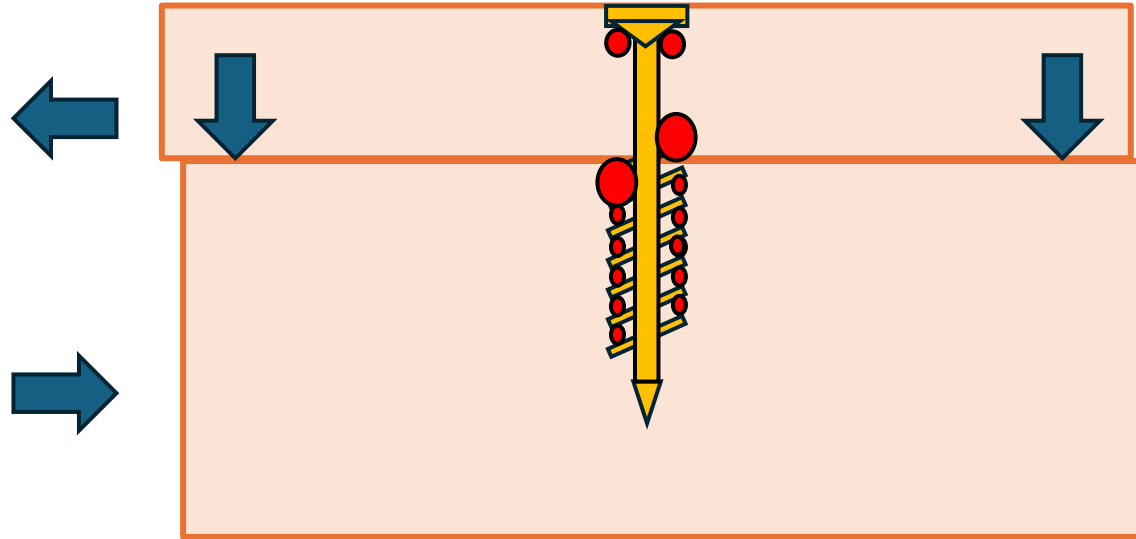
Nails, Screws and Other Fasteners

Screws – How They Are Installed



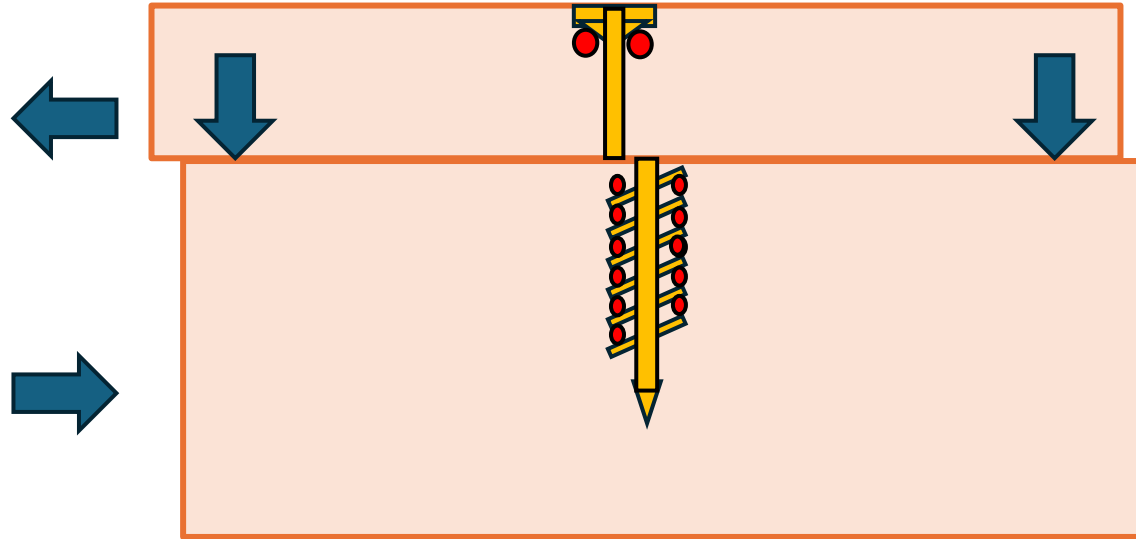
Nails, Screws and Other Fasteners

Screws – How They Are Installed



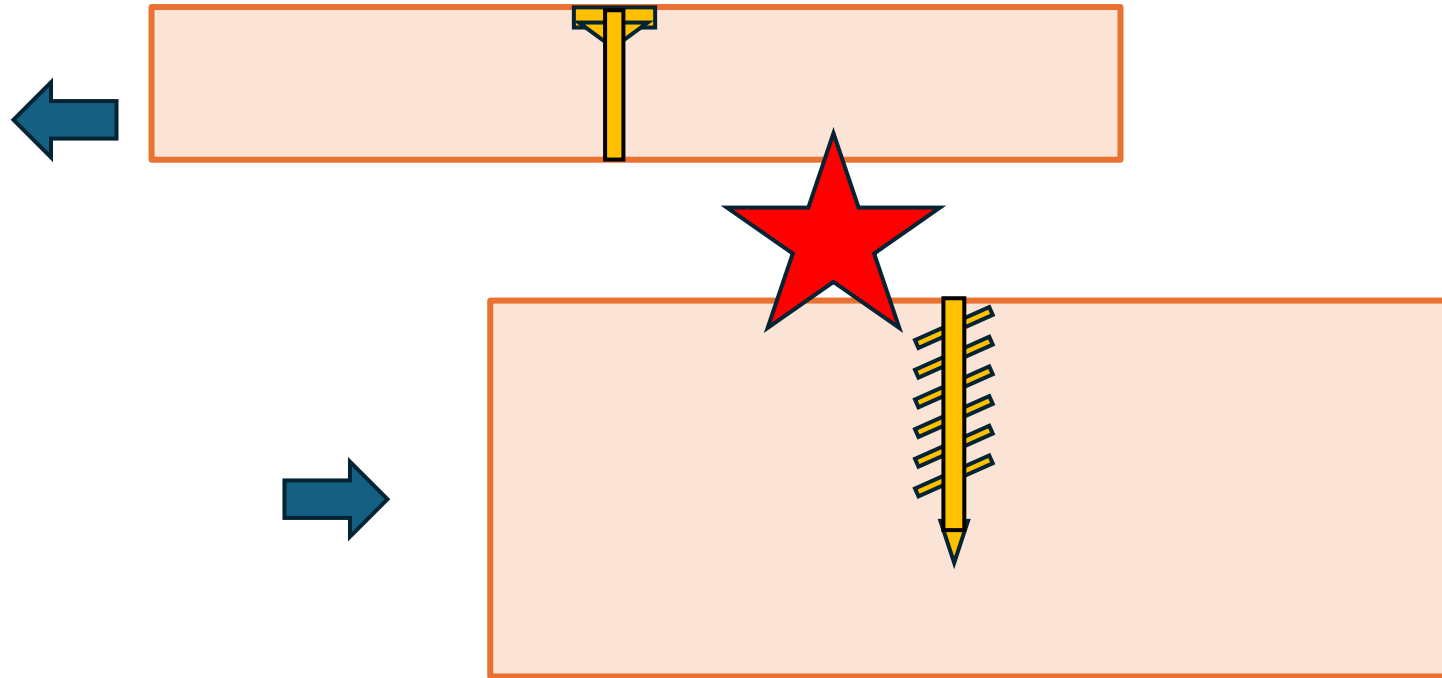
Nails, Screws and Other Fasteners

Screws – How They Are Installed



Nails, Screws and Other Fasteners

Screws – How They Are Installed



Nails, Screws and Other Fasteners

Screws - Code Requirements for Permitted Location, Length, Amount

9.23.3. Fasteners and Connectors

9.23.3.4. Nailing of Framing

9.23.3.5. Fasteners for Sheathing or Subflooring



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Fasteners for Subflooring and for Sheathing

Fastening of Roof Sheathing

Fastening of Wall Sheathing in Required Braced Wall Panels

Only some Braced Wall Panel Sheathing

Nails, Screws and Other Fasteners

Screws - Code Requirements for Permitted Location, Length, Amount

Subfloor Sheathing

Wall Sheathing not BWPs

Table 9.23.3.5.-A
Fasteners for Subflooring and for Sheathing where the 1-in-50 HWP < 0.8 kPa and $S_a(0.2) \leq 0.70$
Forming Part of Sentence 9.23.3.5.(1)

Element	Minimum Length of Fasteners, mm				Minimum Number or Maximum Spacing of Fasteners (1)
	Common or Spiral Nails	Ring Thread Nails or Screws	Roofing Nails	Staples	
Board lumber 184 mm or less wide	51	45	n/a	51	2 per support
Board lumber more than 184 mm wide	51	45	n/a	51	3 per support
Fibreboard sheathing up to 13 mm thick	n/a	n/a	44	28	150 mm o.c. along edges and 300 mm o.c. along intermediate supports
Gypsum sheathing up to 13 mm thick	n/a	n/a	44	n/a	
Plywood, OSB or waferboard up to 10 mm thick	51	45	n/a	38	
Plywood, OSB or waferboard over 10 mm and up to 20 mm thick	51	45	n/a	51	
Plywood, OSB or waferboard over 20 mm and up to 25 mm thick	57	51	n/a	n/a	

Location

Length

Amount

Nails, Screws and Other Fasteners

Screws - Code Requirements for Permitted Location, Length, Amount

Table 9.23.3.5.-B
Fastening of Roof Sheathing Where $0.6 \text{ kPa} < \text{HWP} \leq 1.2 \text{ kPa}$ or Where S_{max} for Site Class C > 0.47 and $S_{\text{max}} \leq 2.6$
Forming Part of Sentence 9.23.3.5.(2)

HWP and S_{max} ⁽¹⁾ Limits	Element	Minimum Length of Fasteners, mm				Minimum Number or Maximum Spacing of Fasteners
		Common, Spiral or Ring Thread Nails	Screws	14-gauge Staples		
	Board lumber more than 184 mm wide ⁽²⁾	63	51	63	3 per support	
	Plywood, OSB or waferboard up to 20 mm thick	63	51	63	150 mm o.c. along the edges of sheathing panels and 300 mm o.c. along intermediate supports	
	Plywood, OSB or waferboard over 20 mm and up to 25 mm thick	63	57	n/a		

Roof Sheathing

Location

Length

Amount

Nails, Screws and Other Fasteners

Screws - Code Requirements for Permitted Location, Length, Amount

Some Braced Wall Panel Sheathing

Gypsum Based Sheathing
Braced Wall Panels only.

NOT Wood Based

Table 9.23.3.5.-C
Fastening of Wall Sheathing in Required Braced Wall Panels Where $HWP \leq 1.2\text{kPa}$ and $S_{\max} \leq 2.6$
Forming Part of Sentence 9.23.3.5.(3)

Reference framing type (1)	Minimum Sheathing Element (2) and Maximum Stud Spacing	Minimum Specifications for Fasteners		Minimum Number or Maximum Spacing of Fasteners (3) (4) along Panel Edges Fastened to Framing
		Common, Spiral or Ring Thread Nails	Screws	
GWB-O (interior side of WSP and DWB framing types)	12.5 mm gypsum board for 600 mm stud spacing	2.48 mm diameter ring thread with 20 mm penetration into support framing (5)	3.45 mm shank diameter, Type W, with 20 mm penetration into support framing (6)	200 mm o.c. for nails or 300 mm o.c. for screws
GWB-A	12.5 mm gypsum board for 600 mm stud spacing			200 mm o.c. for nails or 300 mm o.c. for screws
GWB-B	12.5 mm gypsum board for 400 mm stud spacing			200 mm o.c.
GWB-C	12.5 mm gypsum board for 400 mm stud spacing or 12.5 mm gypsum board, blocked, (7) for 600 mm stud spacin			150 mm o.c. or 200 mm o.c. for blocked
GWB-D	2.5 mm gypsum board for 400 mm stud spacing			100 mm o.c.



Location



Length



Amount

Nails, Screws and Other Fasteners

Screws - Code Requirements for Permitted Location, Length, Amount

Wood Based panel sheathing Panel
Braced Wall Panels

Screws are not a
prescriptive code solution
for fastening Wood Based
Sheathing Braced Wall
Panels

Table 9.23.3.5.-C
Fastening of Wall Sheathing in Required Braced Wall Panels Where $HWP \leq 1.2\text{kPa}$ and $S_{\max} \leq 2.6$
Forming Part of Sentence 9.23.3.5.(3)

Reference framing type (1)	Minimum Sheathing Element (2) and Maximum Stud Spacing	Minimum Specifications for Fasteners		Minimum Number or Maximum Spacing of Fasteners (3) (4) along Panel Edges Fastened to Framing
		Common, Spiral or Ring Thread Nails	Screws	
WSP-A	9.5 mm plywood, OSB or waferboard for 400 mm stud spacing	2.84 mm x 51 mm (8)	NP (9)	150 mm o.c.
WSP-B	11 mm plywood, OSB or waferboard, blocked,(7) for 600 mm stud spacing	3.25 mm x 63 mm(8)		150 mm o.c.
WSP-C	11 mm plywood, OSB or waferboard, blocked,(7) for 600 mm stud spacing	3.25 mm x 63 mm(8)		100 mm o.c.
WSP-D	11 mm plywood, OSB or waferboard, blocked,(7) for 600 mm stud spacing	3.25 mm x 63 mm(8)		75 mm o.c.
WSP-E	15.5 mm plywood, OSB or waferboard, blocked, (7) for 600 mm stud spacing	3.66 mm x 76 mm(8)		75 mm o.c.

NOT PERMITTED

Nails, Screws and Other Fasteners

Nail and Screws – Properties when used in treated wood

Properties

9.23.2.4. Connections to Preservative-Treated Wood

1) Except as provided in Sentence (3), connectors in contact with preservative-treated wood shall be made of

- a) hot-dipped, zinc-coated galvanized steel with a coating weight not less than Z550 conforming to ASTM A653/A653M, "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process,"
- b) a material that provides an equivalent level of corrosion protection to that provided by the material described in Clause (a), or
- c) stainless steel.

2) Fasteners used to attach the connectors referred to in Sentence (1) shall be made of

- a) galvanized steel coated with zinc in accordance with ASTM A153/A153M, "Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware," or
- b) a material that provides an equivalent level of performance and is compatible with the connector.

3) Connectors and fasteners that are in contact with wood that has been treated with a disodium octaborate tetrahydrate (SBX (DOT)) or zinc borate preservative and is installed in a dry interior environment are permitted to be made of uncoated carbon steel. (See Note A-9.23.2.4.(3).)

Nails, Screws and Other Fasteners

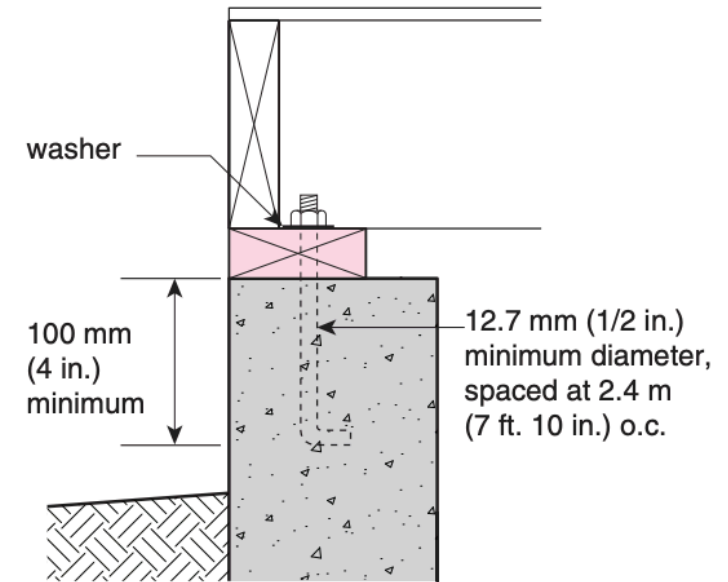
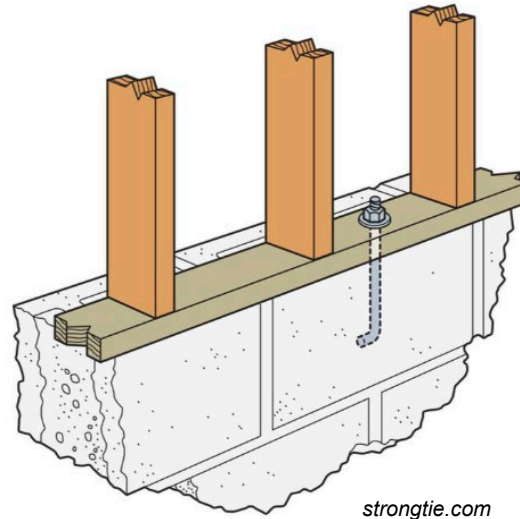
Anchorage - Properties

Properties

How They're Installed

How They Are Used

Code References



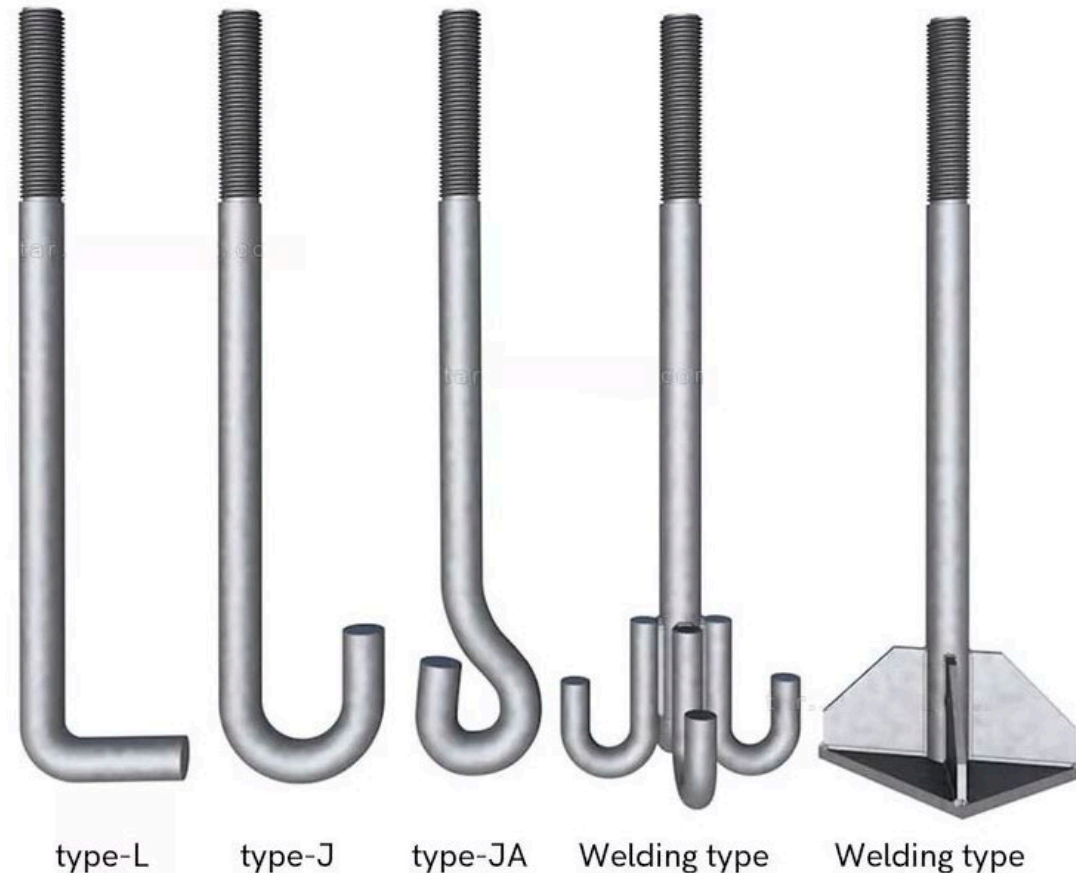
(a) Anchorage by fastening sill plate to foundation with anchor bolts (typical)

*Illustrated User's Guide – NBC2020:
Part 9 of Division B, Housing and
Small Buildings*

Nails, Screws and Other Fasteners

Anchorage - Properties

Cast-in-place



<https://www.steels-supplier.com/Steel-Fastener/anchor-bolt.html>

Nails, Screws and Other Fasteners

Anchorage - Properties

Retrofit Options



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Nails, Screws and Other Fasteners

Anchorage – Code Requirements

9.23.6.1

No specific referenced standard

Anchor details captured in the Code language.

Performance metric captured in the Code language.

2) Except as provided in Sentences (3) to (5), anchorage shall be provided by

- a) embedding the ends of the first floor joists in concrete, or
- b) fastening the sill plate to the *foundation* with not less than 12.7 mm diam anchor bolts spaced not more than 2.4 m o.c.

4) Anchor bolts referred to in Sentences (2) and (3) shall be

- a) fastened to the sill plate with nuts and washers,
- b) embedded not less than 100 mm in the *foundation*, and
- c) so designed that they may be tightened without withdrawing them from the *foundation*.

Nails, Screws and Other Fasteners

Joist Hangers

Properties

How They're Installed

How They Are Used

Code References



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Nails, Screws and Other Fasteners

Joist Hangers – As a Code Solution

No specific referenced standard

Only mentioned twice in Part 9

No specific Code language related to performance or product

9.23.9. Floor Joists

9.23.9.2. Joists Supported by Beams

1) Floor joists may be supported on the tops of beams or may be framed into the sides of beams.

2) When framed into the side of a wood beam, joists referred to in Sentence (1) shall be supported on

- a) joist hangers or other acceptable mechanical connectors, or
- b) not less than 38 mm by 64 mm ledger strips nailed to the side of the beam, except that 38 mm by 38 mm ledger strips may be used provided each joist is nailed to the beam by not less than four 89 mm nails, in addition to the nailing for the ledger strip required in Table 9.23.3.4.

9.23.9.7. Support of Tail and Header Joists

1) When tail joists and header joists are supported by the floor framing, they shall be supported by suitable joist hangers or nailing in accordance with Table 9.23.3.4.

Nails, Screws and Other Fasteners

Joist Hangers – A Code Solution for Beams and Lintel bearing?

What about when used
with beams?

9.23.8. Beams to Support Floors

9.23.8.1. Bearing for Beams

1) Beams shall have even and level bearing and the bearing at end supports shall be not less than 89 mm long, except as stated in the notes to Span Tables 9.23.4.2.-H to 9.23.4.2.-K.

What about when used
with lintels?

9.23.12. Framing over Openings

9.23.10.6. Studs at Sides of Openings

Nails, Screws and Other Fasteners

Joist Hangers – A Code Solution for Treated Lumber?



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Nails, Screws and Other Fasteners

Joist Hangers - A Code Solution for Beams and Lintel bearing?



2ply hanger

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3ply hanger

Nails, Screws and Other Fasteners

Joist Hangers – A Code Solution for other Connections?



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Nails, Screws and Other Fasteners

Joist Hangers – A Code Solution for Roof Framing?

9.23.14. Roof and Ceiling Framing

9.23.14.3. End Bearing Length

- 1)** The length of end bearing of joists and rafters shall be not less than 38 mm.

9.23.14.4. Location and Attachment of Rafters

- 1)** Rafters shall be located directly opposite each other and tied together at the peak, or may be offset by their own thickness if nailed to a ridge board not less than 17.5 mm thick.
- 2)** Except as permitted in Sentence (3), framing members shall be connected by gusset plates or nailing at the peak in conformance with Table 9.23.3.4.
- 3)** Where the roof framing on opposite sides of the peak is assembled separately, such as in the case of factory-built houses, the roof framing on opposite sides is permitted to be fastened together with galvanized-steel strips not less than 200 mm by 75 mm by 0.41 mm thick spaced not more than 1.2 m apart and nailed at each end to the framing by at least two 63 mm nails.

9.23.14.5. Shaping of Rafters

- 1)** Rafters shall be shaped at supports to provide even bearing surfaces and supported directly above the exterior walls.



Nails, Screws and Other Fasteners

Joist Hangers



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Nails, Screws and Other Fasteners

Alternative Nail Diameters

Work through of Alternative Nail Diameters as a
Prescriptive Code Solution



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Nails, Screws and Other Fasteners

Alternative Nail Diameters - Recap

Table 9.23.3.4.
Nailing for Framing
Forming Part of Sentences 9.23.3.4.(1) and 9.23.14.4.(2)

Construction Detail	Minimum Length of Nails, mm	Minimum Number or Maximum Spacing of Nails (1)
Floor joist or blocking perpendicular to sill plate or top wall plate below – toe nail	82	2 per floor joist or blocking
<i>Rim joist</i> , trimmer joist or blocking – supporting walls with required <i>braced wall panels</i> – to sill plate or top wall plate – toe nail	82	150 mm o.c.
Wood or metal strapping to underside of floor joists	57	2
Cross bridging to joists	57	2 at each end



Location



Length



Amount

What about Nail Diameter?

Nails, Screws and Other Fasteners

Alternative Nail Diameters - Recap

Table 9.23.3.1.
Diameter of Nails
Forming Part of Sentence 9.23.3.1.(2)

Minimum Length of Nails, mm	Minimum Diameter of Nails, mm
45	2.64
51	2.84
57	2.87
63	3.25

9-166 Division B

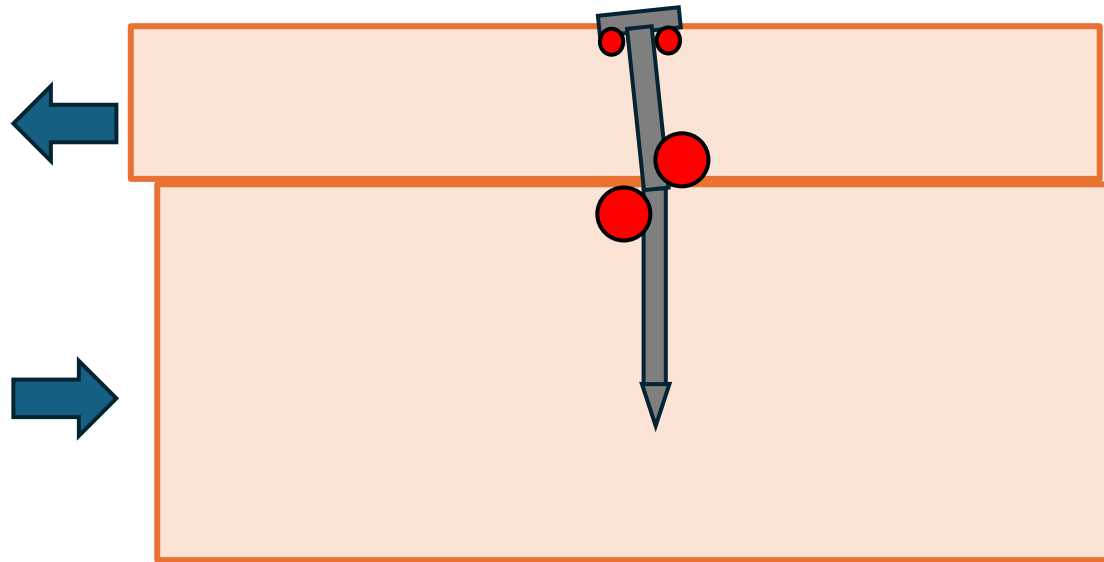
British Columbia Building Codes 2024

Table 9.23.3.1. (continued)

Minimum Length of Nails, mm	Minimum Diameter of Nails, mm
76	3.66
82	3.66
101 or greater	4.88

Nails, Screws and Other Fasteners

Alternative Nail Diameters - Recap



Why Diameter Matters

Nails, Screws and Other Fasteners

Alternative Nail Diameters



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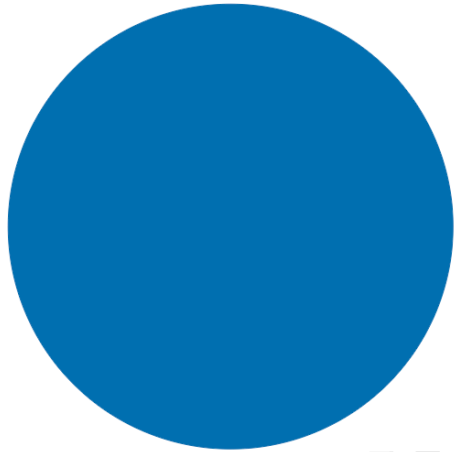
Nails, Screws and Other Fasteners

Alternative Nail Diameters

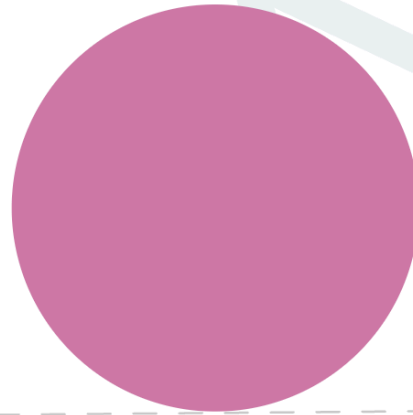
Code Table Reference

Typical Power-Driven Nail Diameters

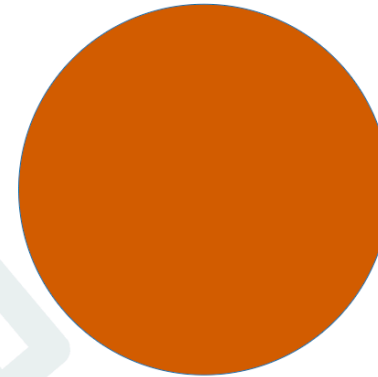
3.66mm / 1.44"



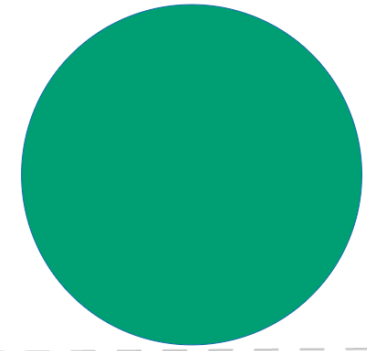
3.33mm / 0.131"



3.05mm / 0.120"



2.80mm / 0.110"



Nails, Screws and Other Fasteners

Alternative Nail Diameters

A-9.23.3.1.(2) Alternative Nail Sizes. Where power nails or nails with a diameter smaller than that required by Tables 9.23.3.1. or 9.23.3.5.-C are used to connect framing, the following equations can be used to determine the required spacing or required number of nails.

→ The **maximum spacing** can be reduced using the following equation:

$$S_{adj} = S_{table} \times (D_{red}/D_{table})^2$$

where

S_{adj} = adjusted nail spacing $\geq 20 \times$ nail diameter,

S_{table} = nail spacing required by Table 9.23.3.4. or 9.23.3.5.-A to 9.23.3.5.-C,

D_{red} = smaller nail diameter smaller than that required by Table 9.23.3.1., or 9.23.3.5.-C, and

D_{table} = nail diameter required by Table 9.23.3.1. or 9.23.3.5.-C.

→ The **number of nails** can be increased using the following equation:

$$N_{adj} = N_{table} \times (D_{table}/D_{red})^2$$

where

N_{adj} = adjusted number of nails,

N_{table} = number of nails required by Table 9.23.3.4. or 9.23.3.5.-A to 9.23.3.5.-C,

D_{table} = nail diameter required by Table 9.23.3.1. or 9.23.3.5.-C, and

D_{red} = nail diameter smaller than that required by Table 9.23.3.1. or 9.23.3.5.-C

Note that nails should be spaced sufficiently far apart-preferably no less than 55 mm apart-to avoid splitting of framing lumber.

Nails, Screws and Other Fasteners

Alternative Nail Diameters

The **number** of nails can be increased using the following equation:

$$N_{\text{adj}} = N_{\text{table}} \times (D_{\text{table}}/D_{\text{red}})^2$$

where

N_{adj} = adjusted number of nails,

N_{table} = number of nails required by Table 9.23.3.4. or 9.23.3.5.-A to 9.23.3.5.-C,

D_{table} = nail diameter required by Table 9.23.3.1. or 9.23.3.5.-C ,, and

D_{red} = nail diameter smaller than that required by Table 9.23.3.1. or 9.23.3.5.-C

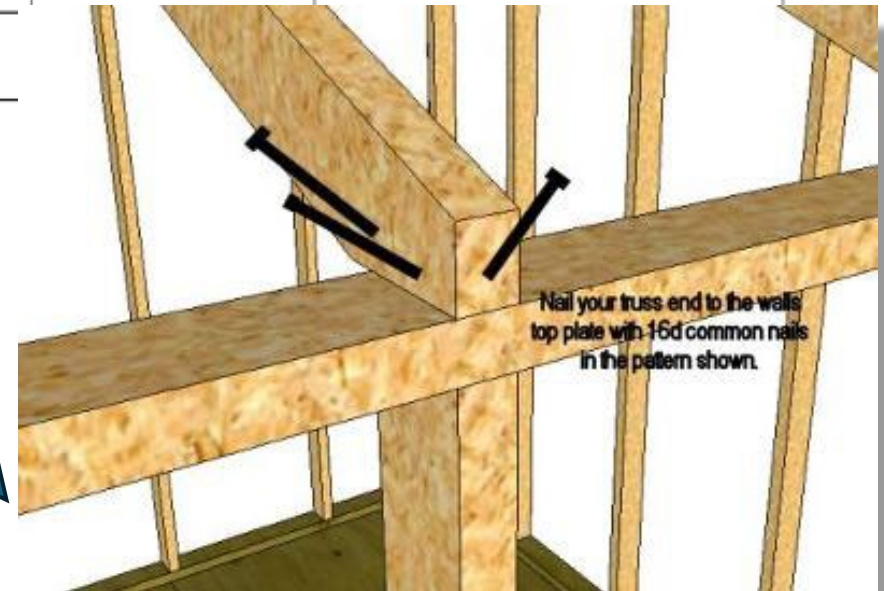
Nails, Screws and Other Fasteners

Alternative Nail Diameters

Table 9.23.3.4. (continued)

Construction Detail	Minimum Length of Nails, mm	Minimum Number or Maximum Spacing of Nails (1)
Roof rafter, roof truss or roof joist to plate – toe nail (4)		

BC Building Code 2024



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Nails, Screws and Other Fasteners

Alternative Nail Diameters

Table 9.23.3.4. (continued)

Construction Detail	Minimum Length of Nails, mm	Minimum Number or Maximum Spacing of Nails (1)
Roof rafter, roof truss or roof joist to plate – toe nail (4)	82	3

CODE REQUIRED NAIL LENGTH IS 82mm

CONNECTION REQUIRED 3x CODE STANDARD NAILS

BUT WHAT ABOUT NAIL DIAMETER?

Nails, Screws and Other Fasteners

Alternative Nail Diameters

Table 9.23.3.1. (continued)

Minimum Length of Nails, mm	Minimum Diameter of Nails, mm
76	3.66
82	3.66
101 or greater	4.88

REQUIRED NAIL LENGTH IS 82mm

CONNECTION REQUIRED 3x CODE STANDARD NAILS

REQUIRED DIAMETER BASED ON LENGTH OF 82mm IS 3.66mm

Nails, Screws and Other Fasteners

Alternative Nail Diameters

The number of nails can be increased using the following equation:

$$N_{\text{adj}} = N_{\text{table}} \times (D_{\text{table}}/D_{\text{red}})^2$$

where

N_{adj} = adjusted number of nails,

N_{table} = number of nails required by Table 9.23.3.4. or 9.23.3.5.-A to 9.23.3.5.-C,

3

D_{table} = nail diameter required by Table 9.23.3.1. or 9.23.3.5.-C, and

3.66mm

D_{red} = nail diameter smaller than that required by Table 9.23.3.1. or 9.23.3.5.-C

3.05mm

$$N(\text{adj}) = 3 \times (3.66 / 3.05)^2$$



$$N(\text{adj}) = 3 \times (3.66 / 3.05)^2$$



$$N(\text{adj}) = 4.32$$



$$N(\text{adj}) = 5$$

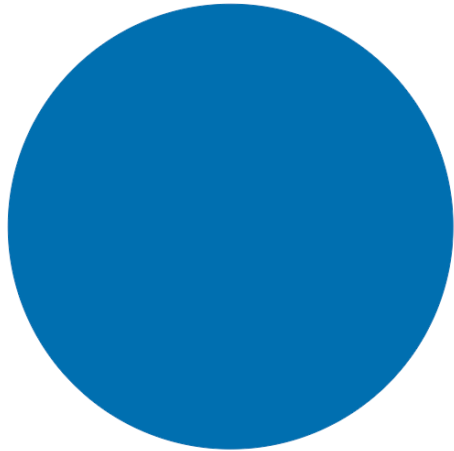
Nails, Screws and Other Fasteners

Alternative Nail Diameters

Code Standard

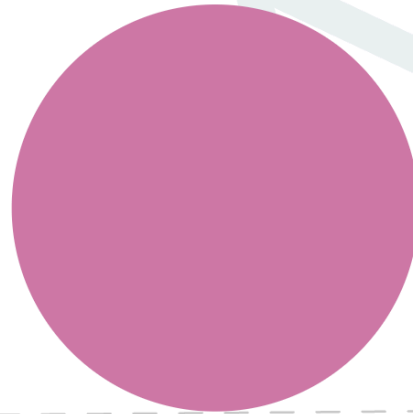
Typical Power-Driven Nail Diameters

3.66mm / 1.44"

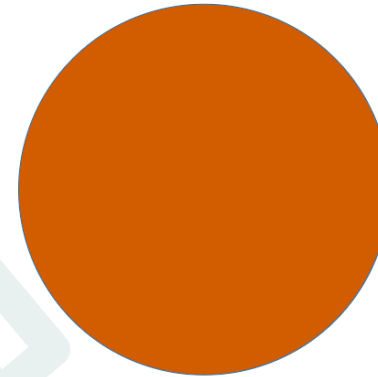


3 nails at this size

3.33mm / 0.131"

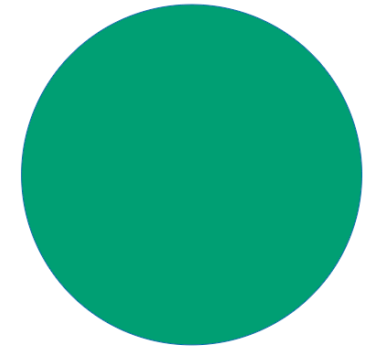


3.05mm / 0.120"



5 nails at this size

2.80mm / 0.110"

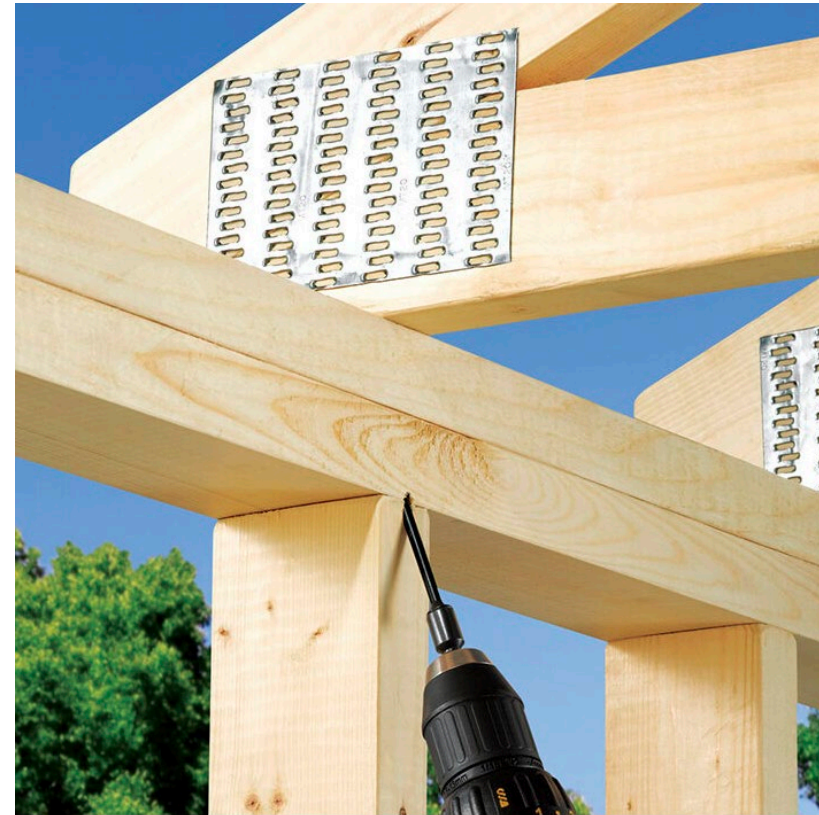


Nails, Screws and Other Fasteners

New and novel fastener products



[amazon.ca](https://www.amazon.ca)



<https://www.fastenmaster.com/products/timberlok>

Nails, Screws and Other Fasteners

New and novel fastener products



Listing and Technical Evaluation Report™ A Duly Authenticated Report from an Approved Agency

Report No: 1105-02



Issue Date: June 11, 2011

Revision Date: February 25, 2025

Subject to Renewal: April 1, 2026

FastenMaster® TimberLOK® Fasteners to Provide Uplift and Lateral Resistance to Trusses and Rafters Attached to the Tops of Walls

Trade Secret Report Holder:

OMG®, Inc. dba FastenMaster®

Phone: 800-518-3569

Website: www.fastenmaster.com

Email: mguthrie@omginc.com

CSI Designations:

DIVISION: 06 00 00 - WOOD, PLASTICS AND COMPOSITES

Section: 06 00 90 - Wood and Plastic Fastenings

1 Innovative Product Evaluated¹

- 1.1 FastenMaster TimberLOK Heavy Duty Wood Screws

2 Product Description and Materials

- 2.1 The innovative product evaluated in this report is shown in Figure 1.

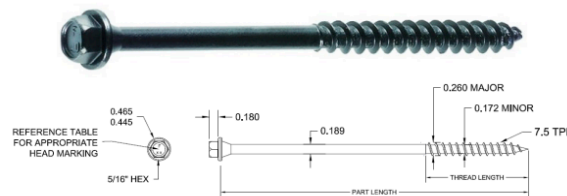
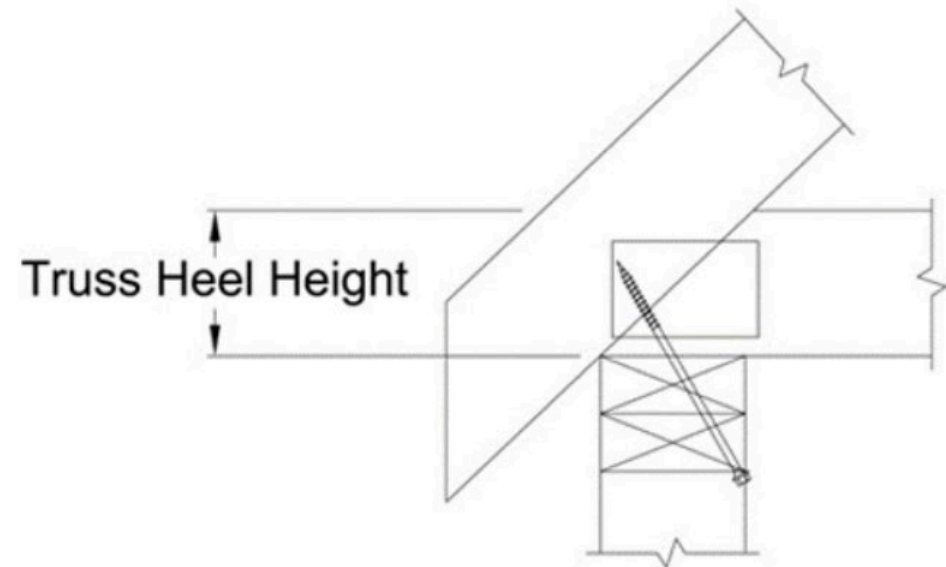


Figure 1. TimberLOK Fastener

- 2.2 TimberLOK Fasteners are manufactured using a standard cold-formed process followed by a heat-treating process from 1022 carbon steel or 10B21 wire conforming to ASTM A510 with a minimum ultimate tensile strength of 60-ksi.

Report Number: 1105-02 FastenMaster® TimberLOK® Fasteners to Provide Uplift and Lateral Resistance to Trusses and Rafters Attached to the Tops of Walls
Confidential Intellectual Property is protected by Defend Trade Secrets Act 2016, ©DrJ Engineering, LLC

Subject to Renewal: 04/01/26
Page 1 of 19



ARE YOU SEEING THESE IN YOUR AREA?

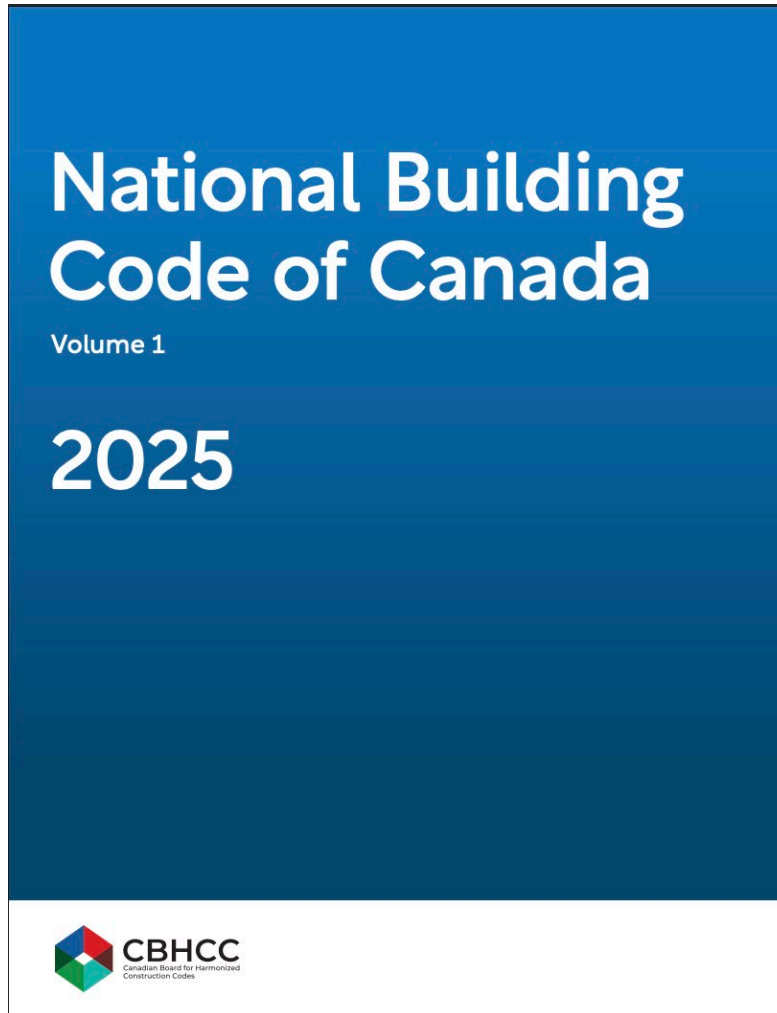
HOW ARE YOU APPROACHING THEM FROM A
REGULATORY PERSPECTIVE?

Nails, Screws and Other Fasteners

Announcements

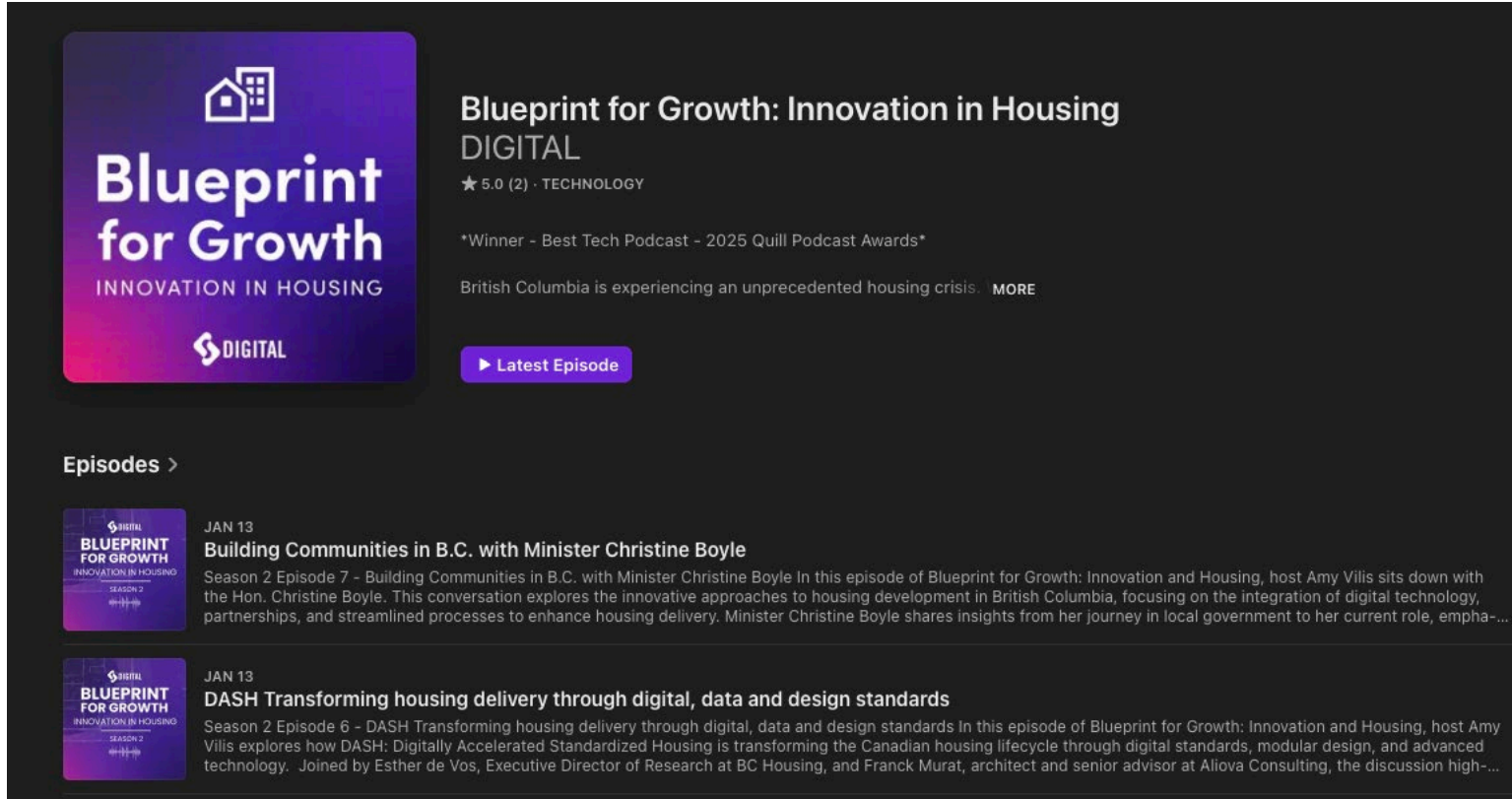
NBC 2025 has been released!

<https://nrc-publications.canada.ca/eng/view/object/?id=adf1ad94-7ea8-4b08-a19f-653ebb7f45f6>



Nails, Screws and Other Fasteners

Announcements



Blueprint for Growth
INNOVATION IN HOUSING
DIGITAL

Blueprint for Growth: Innovation in Housing
DIGITAL

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SEASON 2

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End/Questions:



Tim Warner
Twarner@boabc.org

