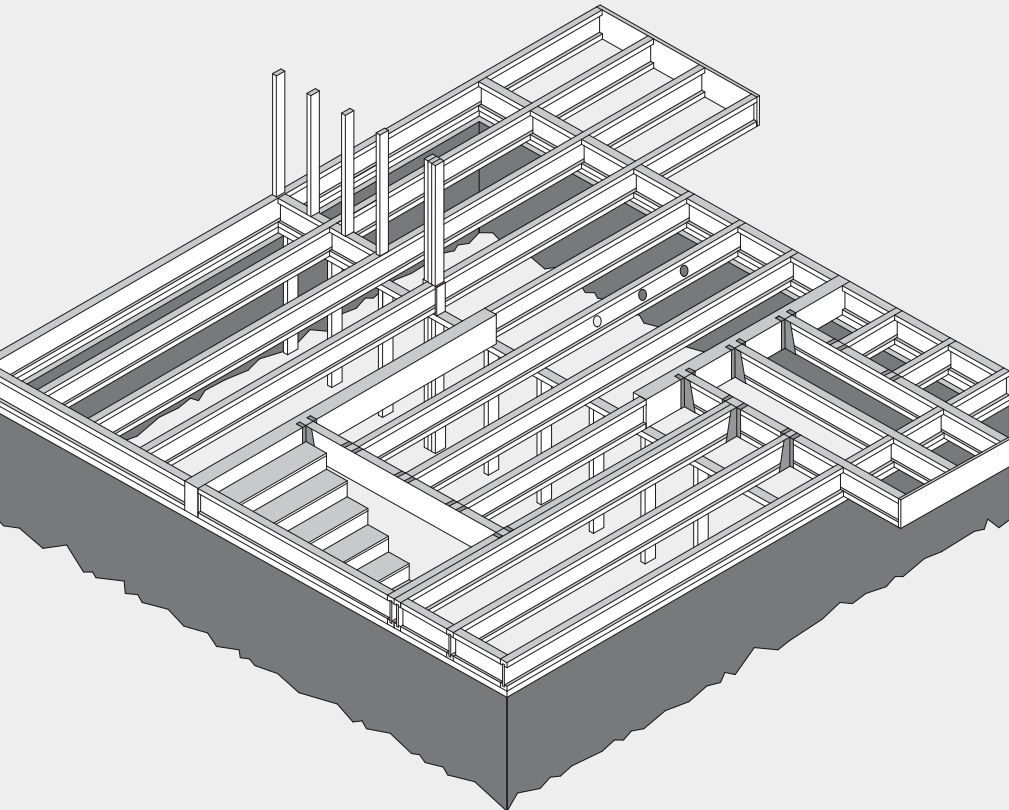


Engineered Wood Products

INSTALLATION GUIDE FOR RESIDENTIAL FLOORS



NORDIC
STRUCTURES

nordic.ca

SAFETY AND CONSTRUCTION PRECAUTIONS

I-joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

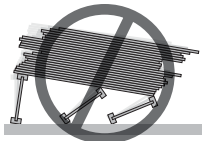
Avoid Accidents by Following these Important Guidelines:

- Brace and nail each I-joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When I-joists are applied continuous over interior supports and a load-bearing wall is planned at that location, blocking will be required at the interior support.
- When the building is completed, the floor sheathing will provide lateral support for the top flanges of the I-joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent I-joist rollover or buckling.
 - Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on center, and must be secured with a minimum of two 8d nails fastened to the top surface of each I-joist. Nail the bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two I-joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4 feet of I-joists at the end of the bay.
- For cantilevered I-joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
- Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
- Never install a damaged I-joist.

Improper storage or installation, failure to follow applicable building codes, failure to follow span ratings for Nordic I-joists, failure to follow allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.



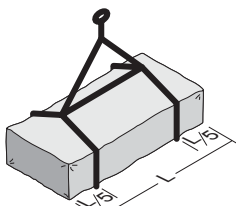
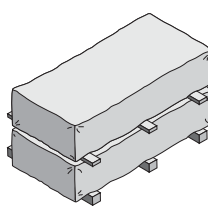
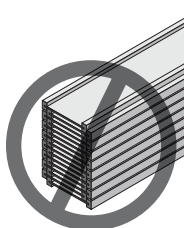
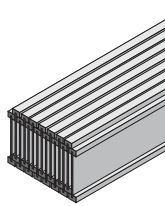
Do not walk on I-joists until fully fastened and braced, or serious injuries can result.



Never stack building materials over unsheathed I-joists. Once sheathed, do not overstress I-joist with concentrated loads from building materials.

STORAGE AND HANDLING GUIDELINES

- Bundle wrap can be slippery when wet. Avoid walking on wrapped bundles.
- Store, stack, and handle I-joists vertically and level only.
- Always stack and handle I-joists in the upright position only.
- Do not store I-joists in direct contact with the ground and/or flatwise.
- Protect I-joists from weather, and use spacers to separate bundles.
- Bundled units should be kept intact until time of installation.
- When handling I-joists with a crane on the job site, take a few simple precautions to prevent damage to the I-joists and injury to your work crew.
 - Pick I-joists in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the I-joists are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
- Do not handle I-joists in a horizontal orientation.
- Never use or try to repair a damaged I-joist.



ALLOWABLE FLOOR SPANS

Design Criteria

Loads	Live load = 40 psf and dead load = 10 psf
Deflection limits	L/480 under live load and L/240 under total load
Sheathing	Nailed-glued sheathing meeting the requirements for APA Rated Sheathing or APA Rated Sturd-I-Floor

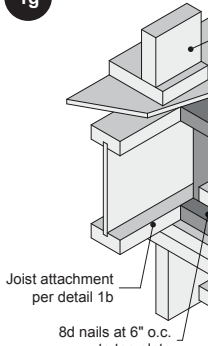
Allowable Floor Spans

Joist depth	Joist series	Simple span On center spacing				Multiple spans On center spacing			
		12"	16"	19.2"	24"	12"	16"	19.2"	24"
9-1/2"	NI-40x	18'-8"	17'-0"	16'-1"	15'-0"	20'-4"	18'-5"	16'-10"	15'-0"
	NI-60	18'-11"	17'-4"	16'-4"	15'-3"	20'-8"	18'-10"	17'-9"	16'-7"
	NI-80	20'-11"	19'-1"	18'-0"	16'-9"	22'-9"	20'-9"	19'-6"	18'-2"
11-7/8"	NI-40x	22'-2"	20'-3"	19'-2"	17'-2"	24'-2"	21'-0"	19'-2"	17'-1"
	NI-60	22'-8"	20'-8"	19'-6"	18'-2"	24'-8"	22'-6"	21'-2"	19'-8"
	NI-80	24'-11"	22'-8"	21'-4"	19'-11"	27'-1"	24'-8"	23'-3"	21'-7"
	NI-90	25'-7"	23'-3"	21'-11"	20'-5"	27'-10"	25'-4"	23'-10"	22'-2"
14"	NI-40x	25'-2"	22'-11"	21'-2"	18'-11"	26'-8"	23'-1"	21'-1"	18'-10"
	NI-60	25'-9"	23'-6"	22'-2"	20'-8"	28'-0"	25'-7"	24'-1"	21'-7"
	NI-80	28'-3"	25'-9"	24'-3"	22'-7"	30'-10"	28'-0"	26'-5"	24'-6"
	NI-90	29'-0"	26'-5"	24'-10"	23'-1"	31'-7"	28'-9"	27'-1"	25'-2"
16"	NI-60	28'-6"	26'-0"	24'-7"	22'-10"	31'-1"	28'-4"	26'-0"	23'-3"
	NI-80	31'-4"	28'-6"	26'-10"	25'-0"	34'-2"	31'-1"	29'-3"	27'-2"
	NI-90	32'-1"	29'-2"	27'-6"	25'-7"	35'-0"	31'-10"	29'-11"	27'-10"

Notes:

- The tabulated clear spans are applicable to residential floor construction meeting the above design criteria and are based on a sheathing thickness of 19/32 inch (40/20 or 20 oc) for a joist spacing of 19.2 inches or less and on a sheathing thickness of 23/32 inch (48/24 or 24 oc) for a joist spacing of 24 inches.
- For multiple-span applications, the end spans shall be 40% or more of the adjacent span.
- Minimum bearing length shall be 1-3/4 inch for end bearings and 3-1/2 inches for intermediate bearings.
- Bearing stiffeners are not required when I-joists are used in accordance with this table, except as required for hangers.

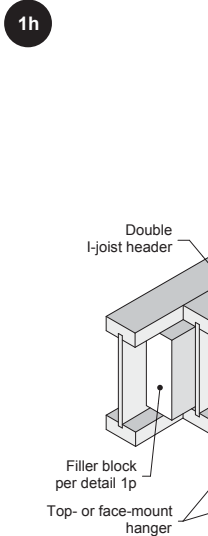
1g



Notes:

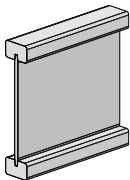
- An occasional blocking panel may be left out for the passage of pipes. For other applications, contact your local building official.
- For other options, see detail 1p.

1h



NORDIC I-JOIST SERIES

RESIDENTIAL SERIES

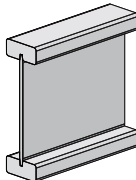


NI-40x

2x3 1950f MSR
3/8 in. web
Depths
9-1/2, 11-7/8 and 14 in.
33 pieces per unit

NI-60

2x3 2100f MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
33 pieces per unit



NI-80

2x4 2100f MSR
3/8 in. web
Depths
9-1/2, 11-7/8, 14 and 16 in.
23 pieces per unit

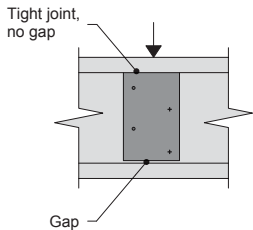
NI-90

2x4 2400f MSR
7/16 in. web
Depths
11-7/8, 14 and 16 in.
23 pieces per unit

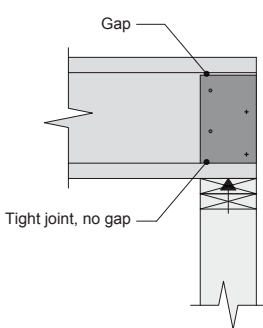
WEB STIFFENERS

2

Concentrated Load (Load Stiffener)

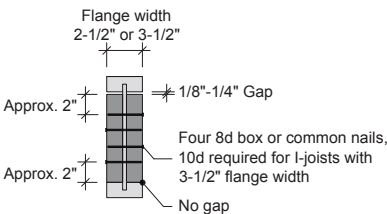


End Bearing (Bearing Stiffener)



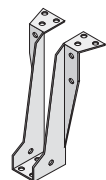
Stiffener Size Requirements

Flange width (in.)	Web stiffener size each side of web (in.)
2-1/2	1 x 2-5/16 Minimum width
3-1/2	1-1/2 x 2-5/16 Minimum width

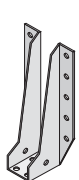


I-JOIST HANGERS

- Hangers shown illustrate the three most commonly used metal hangers to support I-joists.
- All nailing must meet the hanger manufacturer's recommendations.
- Hangers should be selected based on the joist depth, flange width and load capacity.
- Web stiffeners are required when the sides of the hangers do not laterally brace the top flange of the I-joist.



Top Mount



Face Mount



Skewed

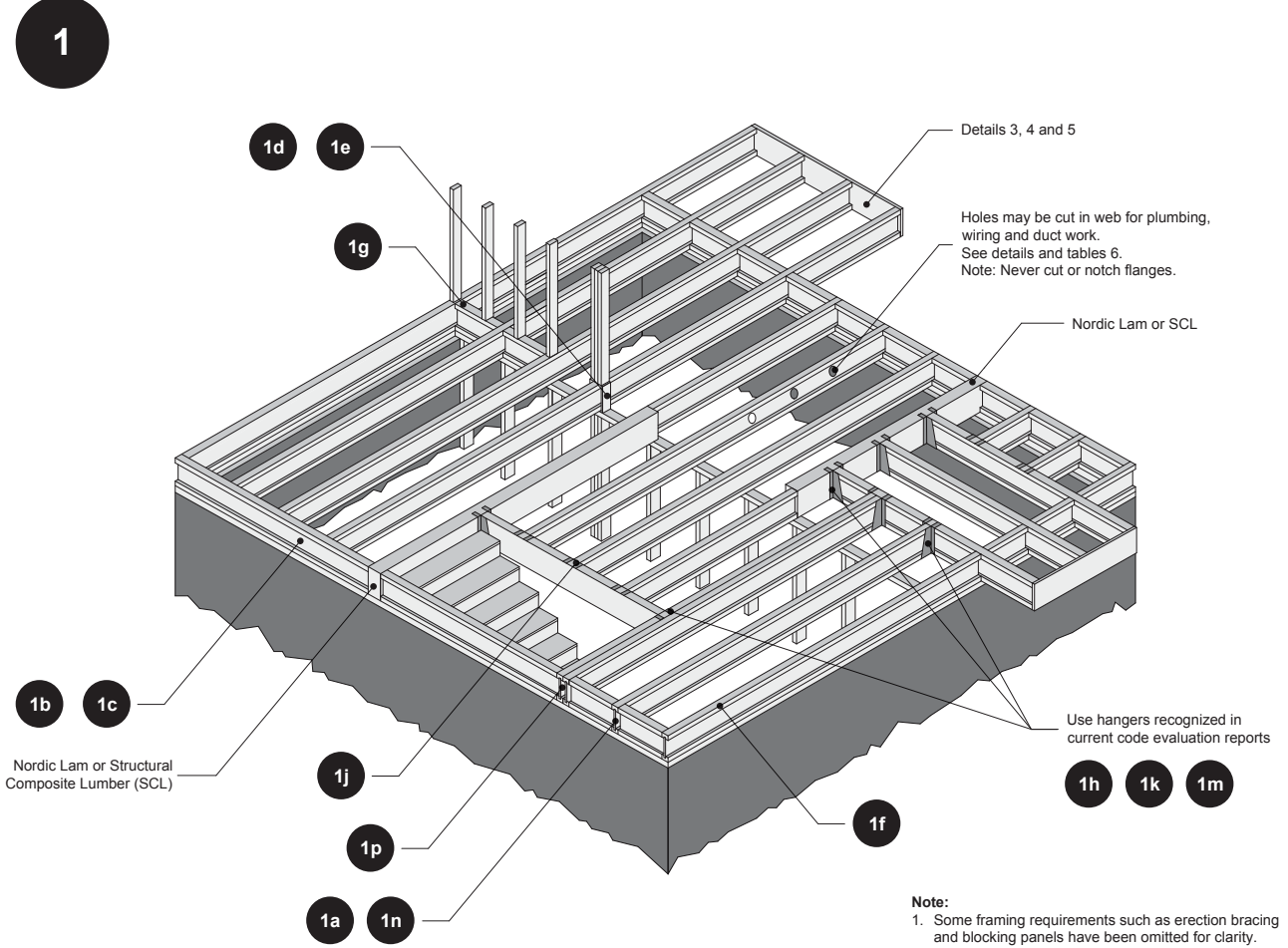
Notes:

- Unless hanger sides laterally brace the top flange of the I-joist.
- For hanger capacity, see manufacturer's literature.
- Verify double I-joist capacity to support loads.
- Backer blocks must be long enough to support the hanger.
- For other options, see details 1g and 1h.

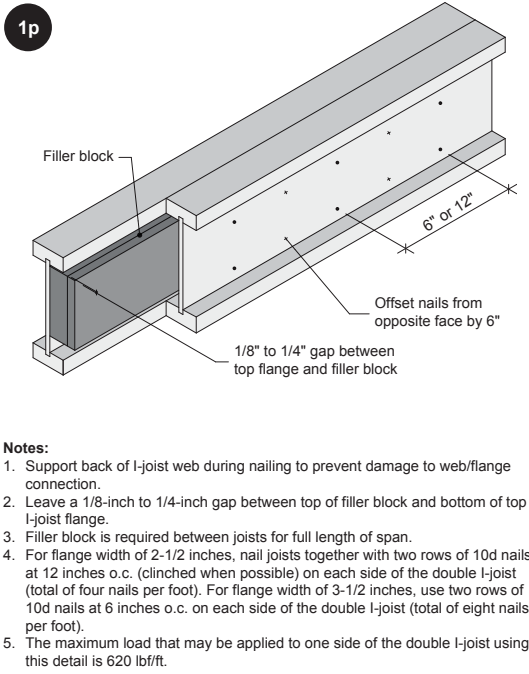
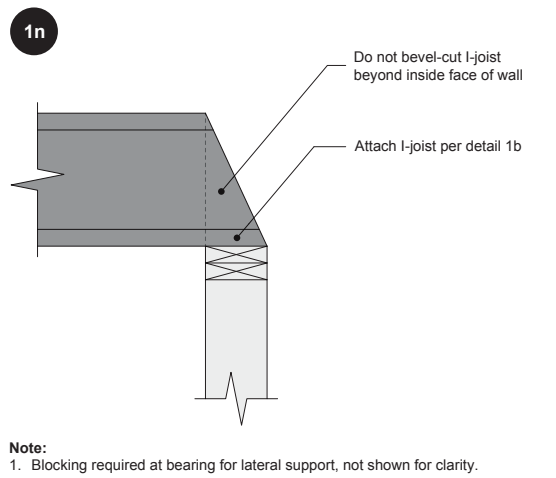
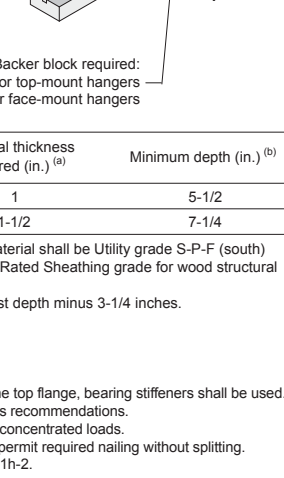
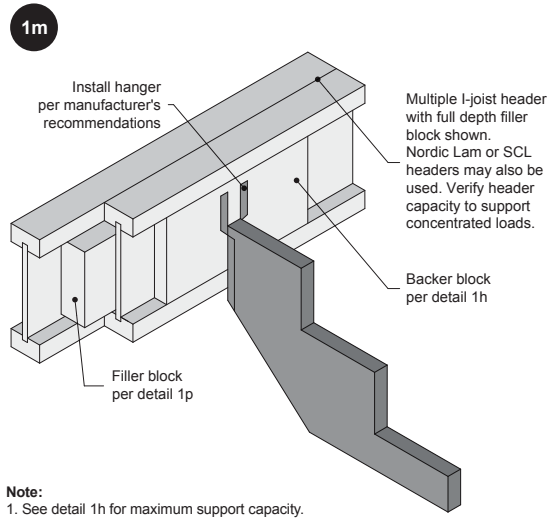
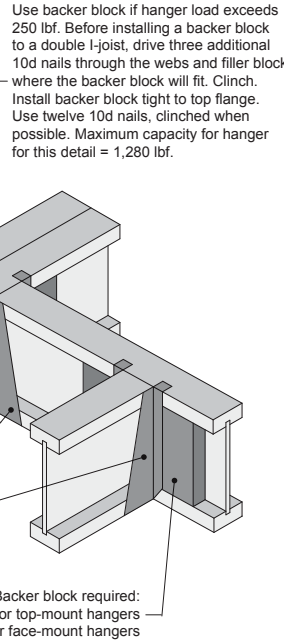
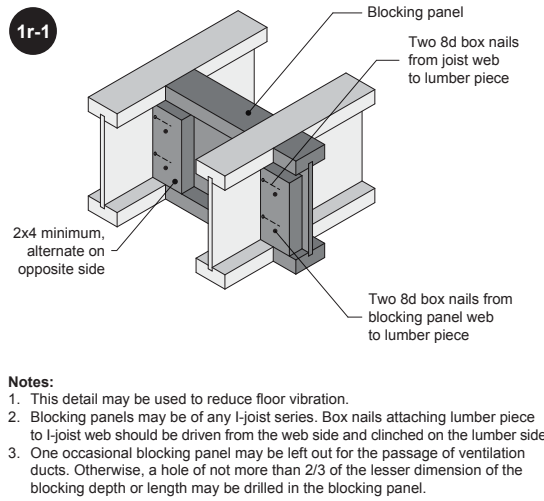
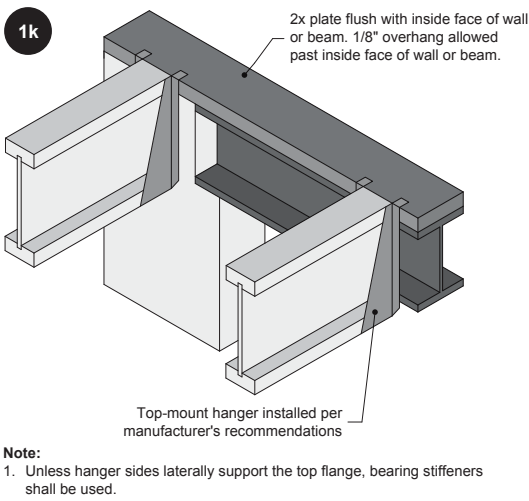
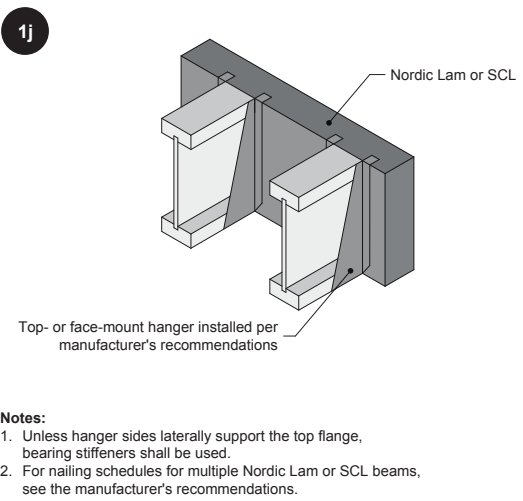
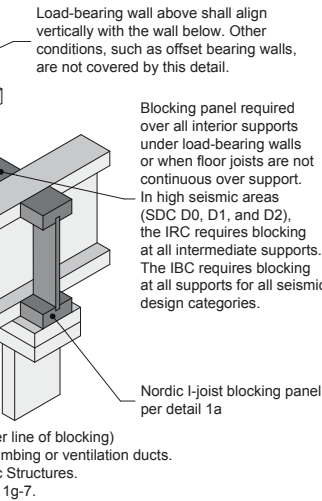
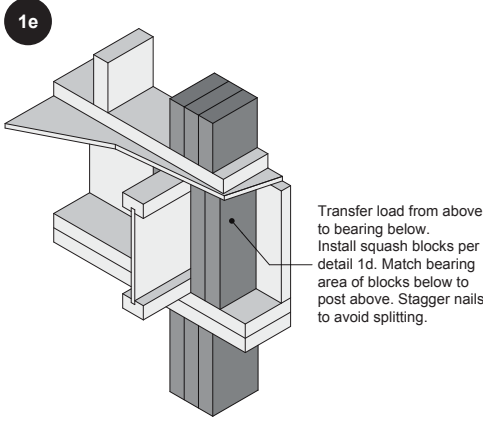
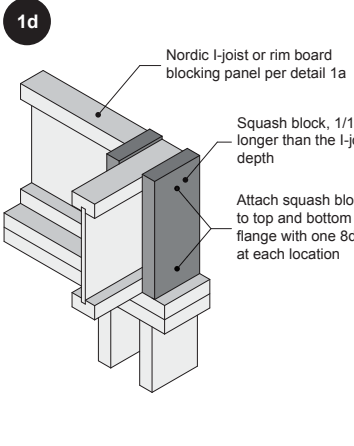
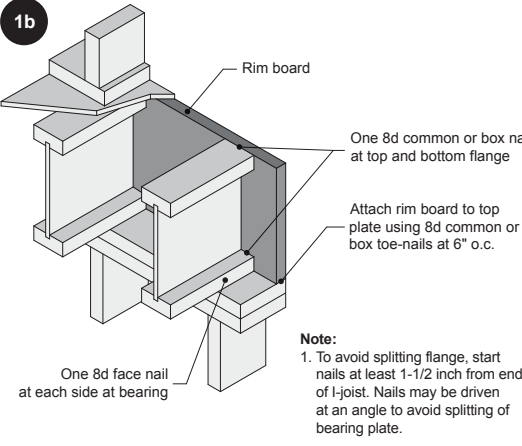
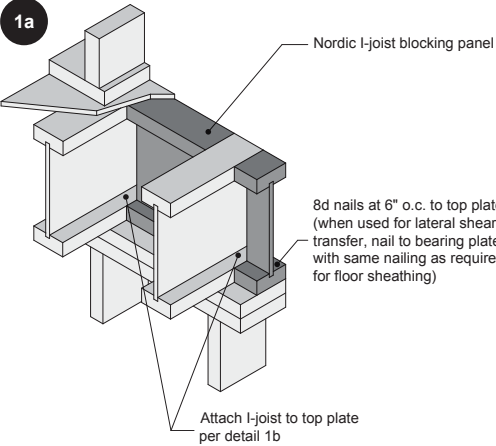
INSTALLING NORDIC I-JOISTS

TYPICAL FLOOR FRAMING AND CONSTRUCTION DETAILS

- 1
1. Installation of Nordic I-joists shall be as shown in details 1.
 2. Except for cutting to length, I-joist flanges should never be cut, drilled or notched.
 3. Install I-joists so that top and bottom flanges are within 1/2 inch of true vertical alignment.
 4. Concentrated loads should only be applied to the top surface of the top flange. Concentrated loads should not be suspended from the bottom flange with the exception of light loads, such as ceiling fans or light fixtures.
 5. I-joists must be protected from the weather prior to installation.
 6. I-joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content of 16 percent or greater, such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
 7. End bearing length must be at least 1-3/4 inch. For multiple-span joists, intermediate bearing length must be at least 3-1/2 inches.
 8. Ends of floor joists shall be restrained to prevent rollover. Use rim board or I-joist blocking panels.
 9. I-joists installed beneath bearing walls perpendicular to the joists shall have full-depth blocking panels, rim board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below.
 10. For I-joists installed directly beneath bearing walls parallel to the joists or used as rim board or blocking panels, the maximum allowable vertical load using a single I-joist is 2,000 plf, and 4,000 plf if double I-joists are used.
 11. Continuous lateral support of the I-joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple-span or cantilever applications, bracing of the I-joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in details 3, 4, or 5.
 12. Nails installed in flange face or edge shall be spaced in accordance with the applicable building code requirements or approved building plans, but should not be closer than those specified on page 3.3 of the Nordic Joist Technical Guide (NS-GT3).
 13. Details 1 show only I-joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
 14. For proper temporary bracing of wood I-joists and placement of temporary construction loads, see [APA Technical Note: Temporary Construction Loads over I-Joist Roofs and Floors, Form J735](#).

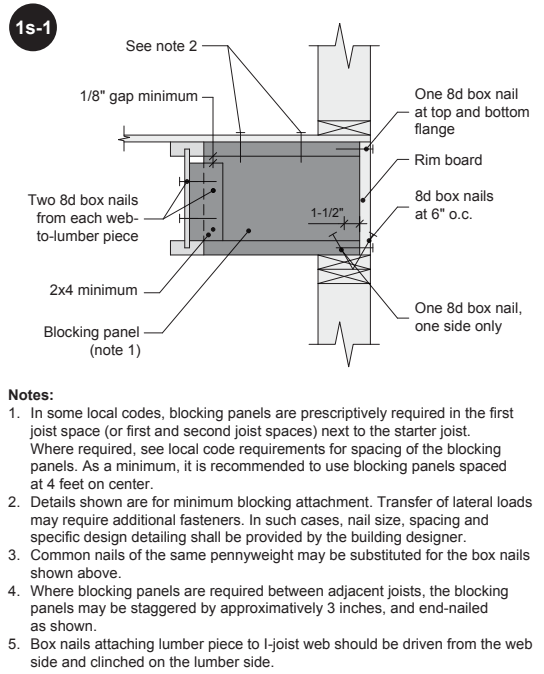


All nails shown in the details are assumed to be common nails unless otherwise noted. Refer to Nordic Joist Construction Details (NS-DC3) for diameters. 10d box nails (0.128 x 3 inches) may be substituted for 8d common nails (0.131 x 2-1/2 inches) shown in details. Individual components not shown to scale for clarity.

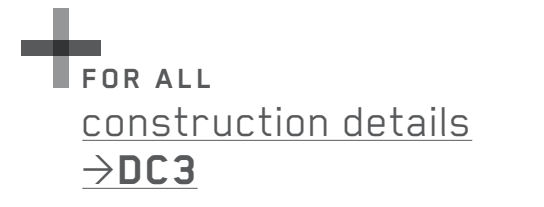


Filler Block Requirements for Double I-joist Construction			
Flange width (in.)	Net depth (in.)	Filler block size (in.)	Example
2-1/2	9-1/2	2-1/8 to 2-1/4 x 6	2x6 + 5/8" or 3/4" sheathing
	11-7/8	2-1/8 to 2-1/4 x 8	2x8 + 5/8" or 3/4" sheathing
	14	2-1/8 to 2-1/4 x 10	2x10 + 5/8" or 3/4" sheathing
	16	2-1/8 to 2-1/4 x 12	2x12 + 5/8" or 3/4" sheathing
3-1/2	9-1/2	3 x 6	2 x 2x6
	11-7/8	3 x 8	2 x 2x8
	14	3 x 10	2 x 2x10
	16	3 x 12	2 x 2x12

Note: 1. The height of the filler block may be different from that specified in the table, as long as it allows nailing and respects the required gap.

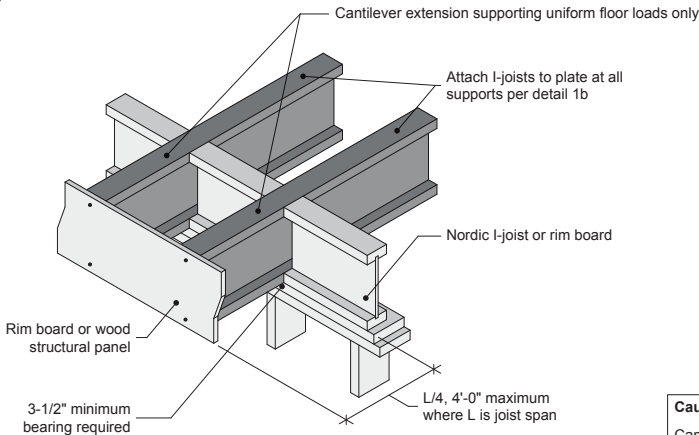


This document supersedes all previous versions. For the latest version, consult [nordic.ca](#) or contact Nordic Structures.



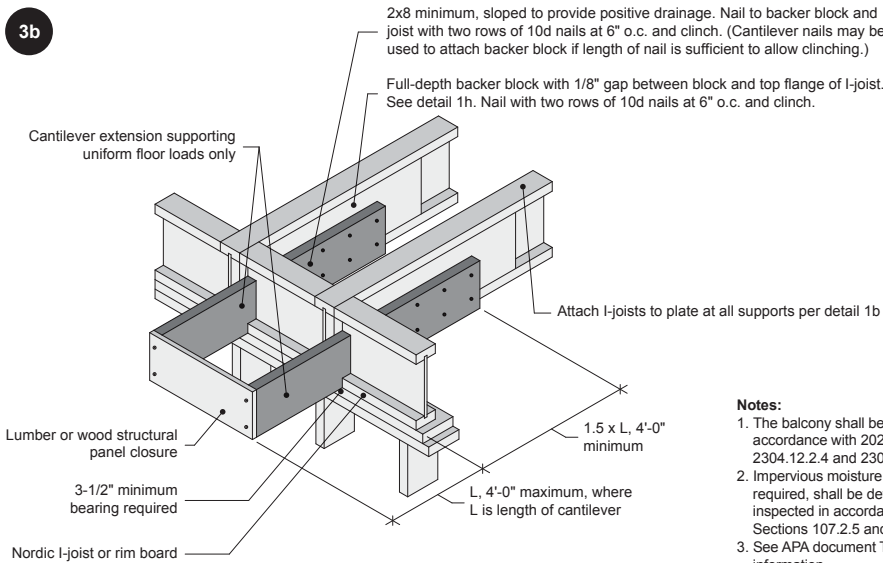
CANTILEVER – BALCONIES

3a



Caution
Cantilevers formed this way are limited to interior balconies.

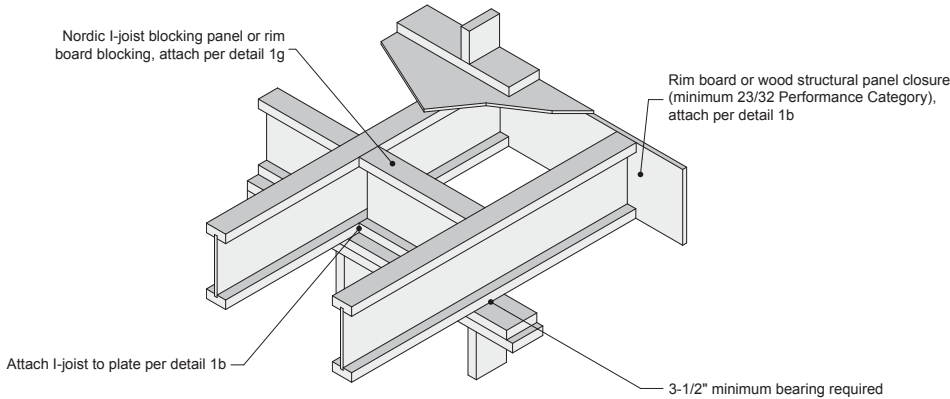
3b



Notes:
1. The balcony shall be constructed in accordance with 2021 IBC Sections 2304.12.2.4 and 2304.12.2.5.
2. Impervious moisture barrier systems, if required, shall be detailed, installed, and inspected in accordance with 2021 IBC Sections 107.2.5 and 110.3.7.
3. See APA document TT-125 for more information.

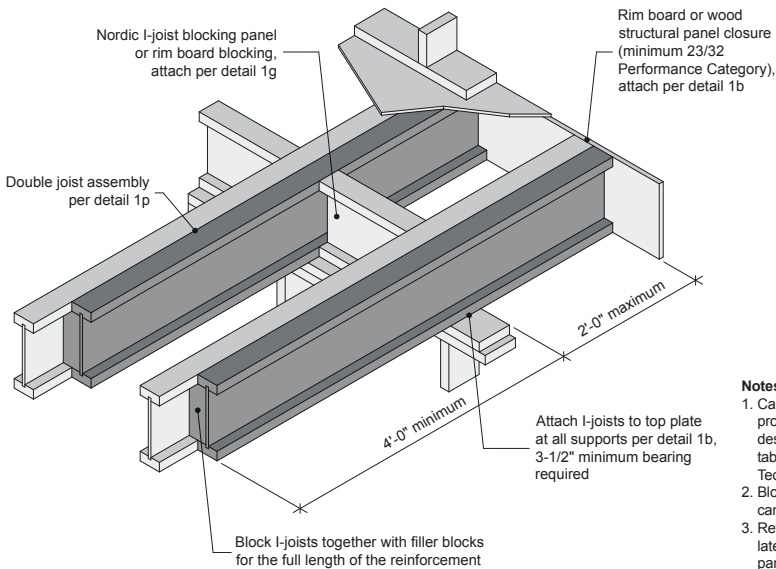
CANTILEVER – VERTICAL BUILDING OFFSET

4a



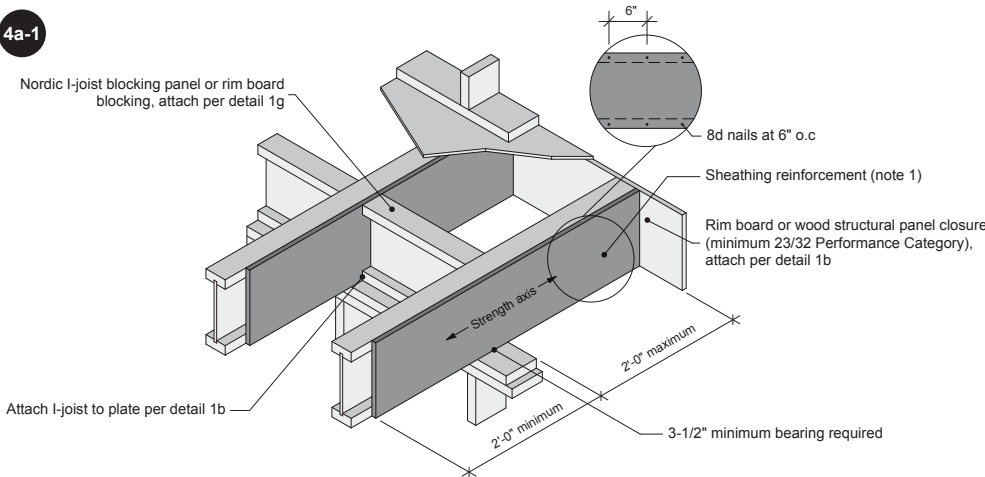
Notes:
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

4b



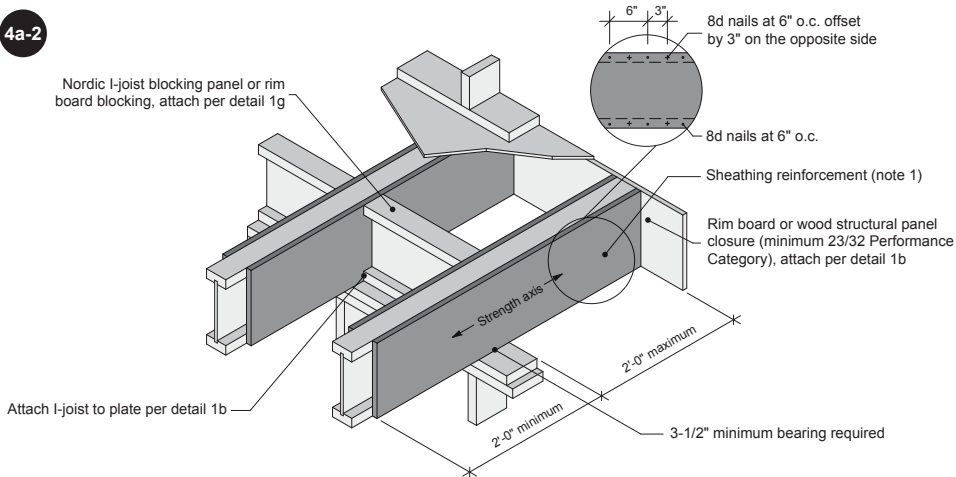
Notes:
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

4a-1



Notes:
1. APA Rated Sheathing 48/24 or APA Rated Sturd-I-floor 24 oc (minimum 23/32 Performance Category) required on one side of joist. Depth shall match the full height of the joist. Nail with 8d nails at 6 inches o.c., top and bottom flange. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b.
2. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
3. Blocking is required along the cantilever support.
4. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

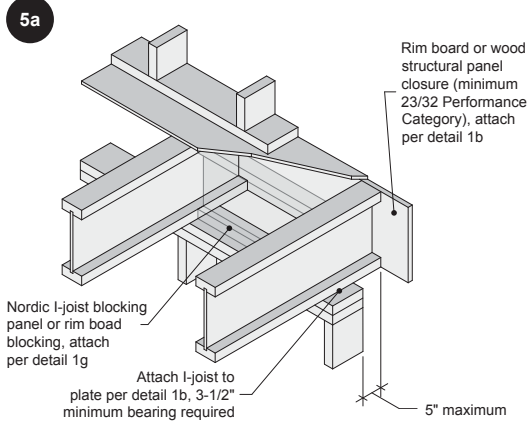
4a-2



Notes:
1. APA Rated Sheathing 48/24 or APA Rated Sturd-I-floor 24 oc (minimum 23/32 Performance Category) required on both sides of joist. Depth shall match the full height of the joist. Nail with 8d nails at 6 inches o.c., top and bottom flange, offset on opposite side. Install with face grain horizontal. Attach I-joist to plate at all supports per detail 1b.
2. Cantilevered joists must be properly sized to support all design loads. Refer to table 4.1 of the Nordic Joist Technical Guide (NS-GT3).
3. Blocking is required along the cantilever support.
4. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

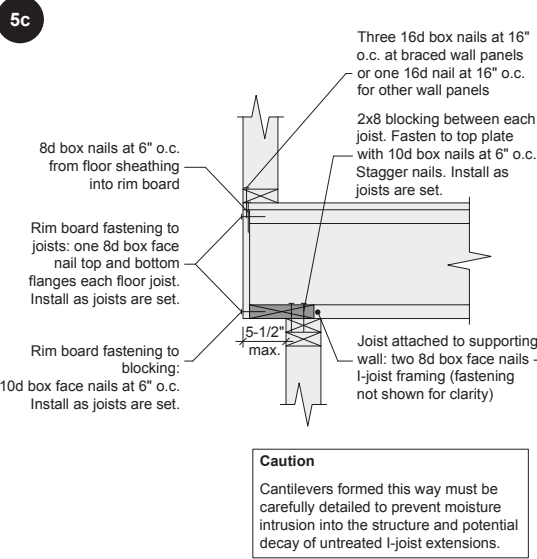
SHORT CANTILEVER – VERTICAL BUILDING OFFSET

5a



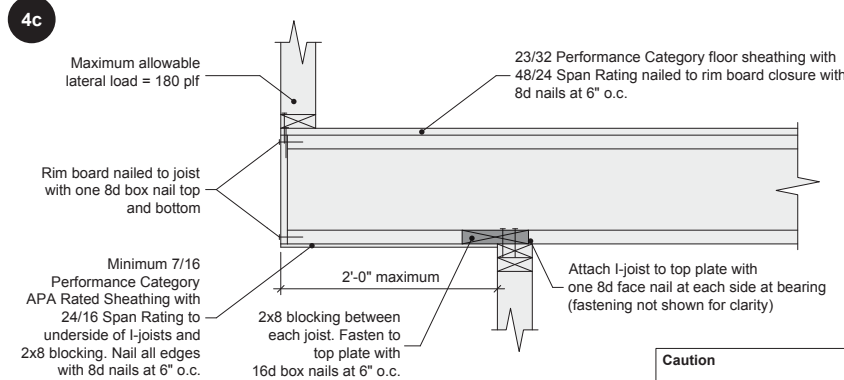
Notes:
1. Cantilevered joists must be properly sized to support all design loads. Refer to table 5.1 of the Nordic Joist Technical Guide (NS-GT3).
2. Blocking is required along the cantilever support.
3. Refer to detail 6c for holes in lateral-restraint-only blocking panels.

5c



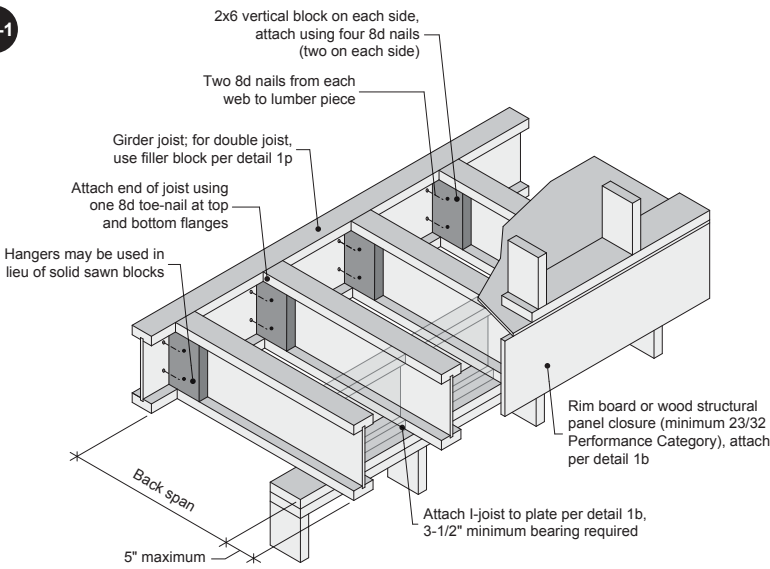
Notes:
1. The above detail is appropriate for one- and two-family residential structures constructed in accordance with the 2021 International Residential Code Sections R301.2.2.6 and R602.10, and Table R602.3(1).
2. Cantilevered joists must be properly sized and spaced, and may require reinforcements to support vertical wall loads. Note that this detail can only be used when no I-joist reinforcement is required.

4c



Notes:
1. The above detail is applicable only to single family residential construction, and when the cantilever is loaded by uniform floor loads only (i.e. wall is not load-bearing).
2. Cantilevered joists must be properly sized to support design loads.
3. Blocking over bearing wall must be provided at all areas of wall bracing (at end of walls and at least every 25'-0" of wall length). See IRC Table R602.10.1 Wall Bracing.
4. This detail is adequate for I-joist lateral stability. Additional lateral resistance may be required in high wind and/or seismic load areas. In such cases, specific design detailing shall be provided by the building designer.
5. During erection, provide temporary blocking over bearing wall in order to prevent rollover of floor joists.

5d-1



Notes:
1. Verify girder joist capacity if the back span exceeds the joist spacing. Limit the differential deflection between adjacent I-joists.
2. Cantilevered joists must be properly sized to support all design loads.
3. Blocking is required along the cantilever support.
4. Maximum capacity for pair of 2x6 blocks for this detail is 370 lbf (total of four nails). For higher capacities, use hangers in lieu of solid sawn blocks.

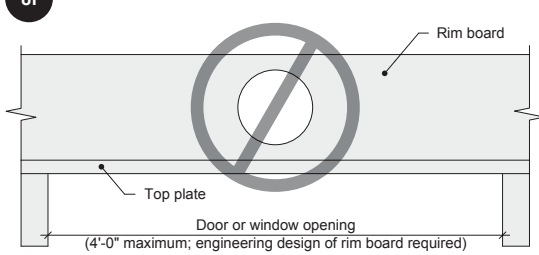
5a-1

5a-2

5b

For short cantilevers with reinforcements, details 4 apply except for the length of the overhang, or refer to NS-DC3 / NS-GT3.

8f



Note:
1. Do not cut holes in rim board installed over openings, such as doors or windows, where the rim board is not fully supported, except that holes of 1-1/2 inch or less in size are permitted provided they are positioned at the mid-depth and in the middle one-third of the span.

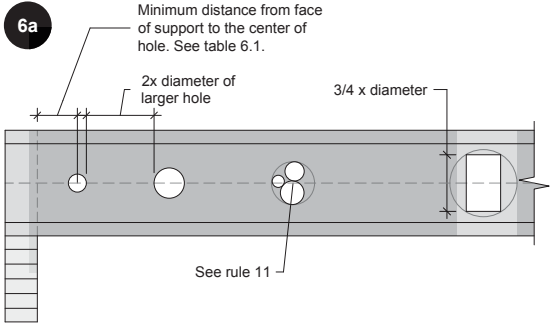
8g

WEB HOLES AND OPENINGS

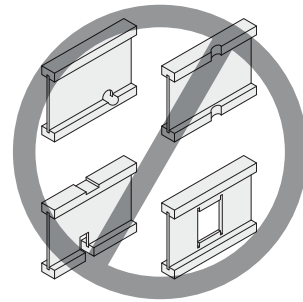
WEB HOLES IN I-JOISTS

Rules for Cutting Holes in I-joists

1. The distance between the inside edge of the support and the centerline of any hole shall be in compliance with the requirements of table 6.1.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. Whenever possible, field-cut holes should be centered on the middle of the web..
4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole and the adjacent I-joist flange.
5. The sides of square holes or longest sides of rectangular holes should not exceed 3/4 of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole - or twice the length of the longest side of the longest rectangular hole -, and each hole must be sized and located in compliance with the requirements of table 6.1.
7. Holes measuring 1-1/2 inch or smaller shall be permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification.
8. A 1-1/2 inch hole or smaller can be placed anywhere in the web provided that it meets the requirements of rule number 6 above. For more than three holes per span, refer to rule 11, space holes at minimum 15 inches on center, or contact Nordic Structures.
9. All holes shall be cut in accordance with the restrictions listed above and as illustrated in detail 6a.
10. Limit three maximum-size holes per span.
11. A group of round holes at approximately the same location shall be permitted if it meets the requirements for a single round hole circumscribed around them. For multiple web holes, consult APA document TT-132.



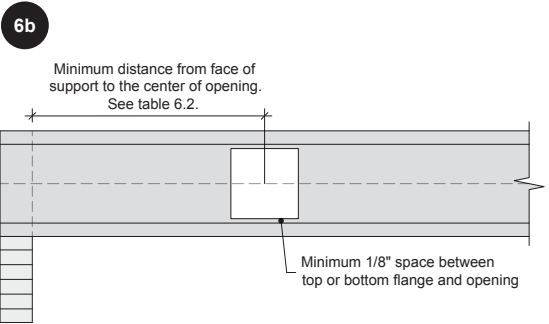
- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. For rectangular holes, avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.



DUCT CHASE OPENINGS

Rules for Cutting Duct Chase Openings in I-joists

1. The distance between the inside edge of the support and the centerline of a duct chase opening shall be in compliance with the requirements of table 6.2.
2. I-joist top and bottom flanges must never be cut, notched or otherwise modified.
3. The maximum depth of a duct chase opening that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the opening and the adjacent I-joist flange.
4. All openings shall be cut in accordance with the restrictions listed above and as illustrated in detail 6b.
5. Limit one maximum-size duct chase opening per span.



- Notes:**
1. Never drill, cut or notch the flange, or over-cut the web.
2. Holes in web should be cut with a sharp saw.
3. Avoid over-cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1-inch-diameter hole in each of the four corners and then making the cuts between the holes is another good method to minimize damage to the I-joist.

I-joist depth (in.)	Maximum depth of the opening (in.)
9-1/2	6-1/4
11-7/8	8-5/8
14	10-3/4
16	12-3/4

HOLES IN BLOCKING PANELS

Maximum Allowable Hole Size in Lateral-restraint-only Blocking Panels

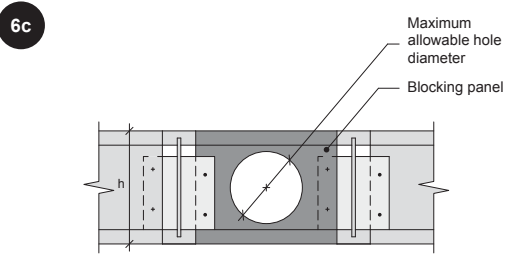
1. The maximum allowable hole size for a lateral-restraint-only blocking panel is 2/3 of the lesser dimension of the blocking's depth or length. Assuming the blocking panel is longer than its height (or depth), the table aside applies. For other applications, contact Nordic Structures.
2. Holes cut into the blocking panels are subject to the following limitations:

- The top and bottom flanges of an I-joist blocking panel must never be cut, notched or otherwise modified.

- Field-cut holes must be centered in the blocking horizontally.

- While round holes are preferred, rectangle holes may be used provided the corners are not over cut. Slightly rounding corners or pre-drilling corners with a 1-inch-diameter bit is recommended.

- All holes must be cut in a workman-like manner in accordance with the limitations listed above.



I-joist or rim board blocking depth (in.)	Maximum allowable hole diameter (in.) ^(a)
9-1/2	6-1/4
11-7/8	7-3/4
14	9-1/4
16	10-1/2

^(a) Maximum allowable hole diameter in blocking panel, where the blocking panel is longer than its height.

TABLE 6.1 – LOCATION OF WEB HOLES

Simple or multiple span

Minimum distance from inside face of any support to center of hole (ft.-in.)

Joist depth	Joist series	Round hole diameter (in.)														
		2	3	4	5	6	6-1/4	7	8	8-5/8	9	10	10-3/4	11	12	12-3/4
9-1/2"	NI-40x	0'-7"	1'-4"	2'-8"	4'-2"	5'-8"	6'-2"	-	-	-	-	-	-	-	-	-
	NI-60	1'-0"	2'-4"	3'-9"	5'-3"	6'-10"	7'-3"	-	-	-	-	-	-	-	-	-
	NI-80	2'-0"	3'-5"	4'-10"	6'-4"	8'-0"	8'-5"	-	-	-	-	-	-	-	-	-
11-7/8"	NI-40x	0'-7"	0'-8"	1'-0"	2'-4"	3'-8"	4'-0"	5'-2"	6'-8"	8'-0"	-	-	-	-	-	-
	NI-60	0'-7"	1'-4"	2'-8"	4'-0"	5'-5"	5'-10"	7'-0"	8'-8"	9'-9"	-	-	-	-	-	-
	NI-80	1'-4"	2'-8"	4'-0"	5'-4"	6'-10"	7'-3"	8'-5"	10'-2"	11'-3"	-	-	-	-	-	-
	NI-90	0'-7"	0'-8"	1'-3"	2'-11"	4'-8"	5'-2"	6'-6"	8'-6"	9'-11"	-	-	-	-	-	-
14"	NI-40x	0'-7"	0'-8"	0'-8"	0'-9"	2'-0"	2'-4"	3'-4"	4'-9"	5'-9"	6'-3"	8'-0"	9'-9"	-	-	-
	NI-60	0'-7"	0'-8"	1'-3"	2'-6"	4'-0"	4'-3"	5'-3"	6'-9"	7'-9"	8'-3"	10'-2"	11'-10"	-	-	-
	NI-80	0'-8"	1'-10"	3'-2"	4'-6"	6'-0"	6'-3"	7'-4"	8'-10"	9'-10"	10'-6"	12'-3"	13'-8"	-	-	-
	NI-90	0'-7"	0'-8"	0'-9"	2'-3"	3'-10"	4'-3"	5'-6"	7'-3"	8'-5"	9'-2"	11'-2"	12'-9"	-	-	-
16"	NI-60	0'-7"	0'-8"	0'-8"	1'-2"	2'-5"	2'-9"	3'-9"	5'-0"	6'-0"	6'-6"	8'-0"	9'-2"	9'-8"	11'-9"	13'-9"
	NI-80	0'-7"	1'-2"	2'-4"	3'-8"	5'-0"	5'-4"	6'-4"	7'-10"	8'-9"	9'-4"	11'-0"	12'-2"	12'-6"	14'-4"	16'-0"
	NI-90	0'-7"	0'-8"	0'-8"	1'-6"	3'-0"	3'-5"	4'-6"	6'-3"	7'-3"	7'-10"	9'-8"	11'-0"	11'-6"	13'-6"	15'-3"

- Notes:**
1. Tabulated values are applicable to residential floor construction meeting the adjacent design criteria.
2. The above table is based on the I-joists being used at their maximum spans. The minimum distance as given above may be reduced for shorter spans; contact your local distributor.

Design Criteria

Joist spacing	Up to 24 inches
Loads	Live load = 40 psf and dead load = 10 psf
Deflection limits	L/480 under live load and L/240 under total load

TABLE 6.2 – LOCATION OF DUCT CHASE OPENINGS

Simple span

Minimum distance from inside face of any support to center of opening (ft.-in.)

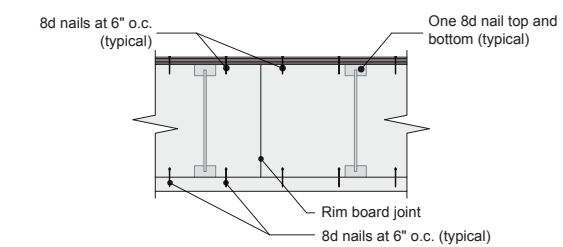
Joist depth	Joist series	Duct chase length (in.)								
		8	10	12	14	16	18	20	22	24
9-1/2"	NI-40x	5'-2"	5'-7"	6'-0"	6'-4"	6'-8"	7'-2"	7'-7"	-	-
	NI-60	5'-3"	5'-8"	6'-0"	6'-6"	7'-0"	7'-3"	7'-9"	-	-
	NI-80	5'-2"	5'-7"	6'-0"	6'-4"	6'-8"	7'-2"	7'-7"	8'-1"	8'-6"
11-7/8"	NI-40x	6'-7"	7'-1"	7'-6"	8'-1"	8'-6"	9'-1"	9'-7"	-	-
	NI-60	7'-1"	7'-7"	8'-0"	8'-4"	8'-10"	9'-3"	9'-9"	-	-
	NI-80	7'-1"	7'-5"	8'-0"	8'-4"	8'-10"	9'-2"	9'-8"	10'-2"	10'-8"
	NI-90	4'-3"	4'-10"	5'-4"	5'-11"	6'-6"	7'-1"	7'-8"	8'-3"	8'-11"
14"	NI-40x	7'-9"	8'-3"	8'-10"	9'-5"	10'-1"	10'-7"	11'-3"	-	-
	NI-60	8'-8"	9'-2"	9'-6"	10'-1"	10'-6"	11'-1"	11'-7"	-	-
	NI-80	8'-9"	9'-2"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	12'-1"	12'-8"
	NI-90	5'-10"	6'-5"	7'-0"	7'-6"	8'-2"	8'-9"	9'-4"	9'-11"	10'-8"
16"	NI-60	10'-1"	10'-7"	11'-0"	11'-6"	12'-1"	12'-7"	13'-4"	-	-
	NI-80	10'-3"	10'-9"	11'-2"	11'-7"	12'-1"	12'-7"	13'-2"	13'-9"	14'-6"
	NI-90	7'-4"	7'-11"	8'-6"	9'-1"	9'-8"	10'-3"	13'-0"	11'-7"	12'-3"

Design Criteria

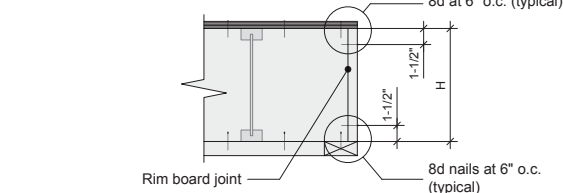
Joist spacing	Up to 24 inches
Loads	Live load = 40 psf and dead load = 10 psf
Deflection limits	L/480 under live load and L/240 under total load

- Notes:**
1. Tabulated values are applicable to residential floor construction meeting the above design criteria.

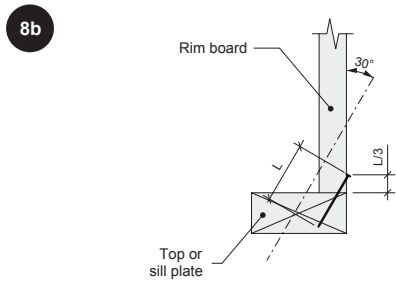
RIM BOARDS



Rim Board Joint at Corner



- Notes:**
1. Floor sheathing to rim board - Use 8d nails (box or common) at 6 inches o.c. *Caution: The horizontal load capacity is not necessarily increased with a decreased nail spacing. Under no circumstances should the nail spacing be less than 3 inches. The 16d nails (box or common) used to connect the bottom plate of a wall to the rim board through the sheathing do not reduce the horizontal load capacity of the rim board provided that the 8d nail spacing (sheathing-rim board) is 6 inches o.c. and the 16d nail spacing (bottom plate-sheathing-rim board) is in accordance with the prescriptive requirements of the applicable code. APA recommends a minimum 3/8-inch panel edge distance be maintained when nailing. Calculations show that the tongue does not need to be removed for floor sheathing 7/8-inch thick or less when used in conjunction with rim boards of 1-1/8 inch. Some local code jurisdictions, however, may require removal of the tongue at the edge of floor framing when nailing it to rim board.*
2. Rim board to I-joist - Use two 8d nails (box or common), one each into the top and bottom flanges.



- Note:**
1. Rim board to sill plate - Toe-nail using 8d nails (box or common) at 6 inches o.c.

INSTALLING THE NAILED-GLUED FLOOR SYSTEM

1. Wipe any mud, dirt, water, or ice from I-joist flanges before gluing.
2. Snap a chalk line across the I-joists four feet in from the wall for panel edge alignment and as a boundary for spreading glue.
3. Spread only enough glue to lay one or two panels at a time, or follow specific recommendations from the glue manufacturer.
4. Lay the first panel with tongue side to the wall, and nail in place. This protects the tongue of the next panel from damage when tapped into place with a block and sledgehammer.
5. Apply a continuous line of glue (about 1/4-inch diameter) to the top flange of a single I-joist. Apply glue in a winding pattern on wide areas, such as with double I-joists.
6. Apply two lines of glue on I-joists where panel ends butt to assure proper gluing of each end.
7. After the first row of panels is in place, spread glue in the groove of one or two panels at a time before laying the next row. Glue line may be continuous or spaced, but avoid squeeze-out by applying a thinner line (1/8 inch) than used on I-joist flanges.
8. Tap the second row of panels into place, using a block to protect groove edges.
9. Stagger end joints in each succeeding row of panels. A 1/8-inch space between all end joints and 1/8-inch at all edges, including T&G edges, is recommended. (Use a spacer tool or an 8d common nail to assure accurate and consistent spacing.)
10. Complete all nailing of each panel before glue sets. Check the manufacturer's recommendations for cure time. (Warm weather accelerates glue setting.) Use 6d ring- or screw-shank nails for panels 3/4-inch thick or less, and 8d ring- or screw-shank nails for thicker panels. Space nails per the table below. Closer nail spacing may be required by some codes, or for diaphragm construction. The finished deck can be walked on right away and will carry construction loads without damage to the glue bond.

APA Rated Sturd-I-Floor Fastener Schedules

Maximum joist spacing	Panel thickness ^(a)	Nail size and type ^(b)	Fastening: nailed-glued ^(c)	
			Maximum spacing	
			Edges	Intermediate supports
16"	23/32" ^(d)	6d ring- or screw-shank	12"	12"
19.2"	23/32" ^(d)	6d ring- or screw-shank	12"	12"
24"	23/32", 3/4"	6d ring- or screw-shank	12"	12"
	7/8"	8d ring- or screw-shank	6"	12"

- a) Panels in a given thickness may be manufactured in more than one allowable span. Panels with an allowable span greater than the actual joist spacing may be substituted for panels of the same thickness with an allowable span matching the actual joist spacing. For example, 19/32-inch-thick Sturd-I-Floor 20 oc may be substituted for 19/32-inch-thick Sturd-I-Floor 16 oc over joists 16 inches on center.
- b) 8d common nails may be substituted if ring- or screw-shank nails are not available.
- c) Use only adhesives conforming to APA Specification AFG-01, or ASTM D3498 applied in accordance with the manufacturer's recommendations. If OSB panels with sealed surfaces and edges are to be used, use only solvent-based glues; check with panel manufacturer.
- d) Recommended minimum thickness for use with I-joists.

- Notes:**
1. Special conditions may impose heavy traffic and concentrated loads that require construction in excess of the minimums shown.

IMPORTANT NOTE:

Floor sheathing must be field glued to the I-joist flanges in order to achieve the maximum spans shown in this document. If sheathing is nailed only, I-joist spans must be verified with your local distributor.