NI-90x

(1d)





8 8-5/8 9 10 10-3/4 11 12 12-3/4

NI-60 NI-70 -1/2" A 3-1/2" 1-1/2" 1 NI-40x 1-1/2" OSB 3/8"→ S-P-F No.2 1950f MSR 2100f MSR 1950f MSR 2100f MSR 2400f MSR NPG Lumbe 33 pieces 23 pieces

Refer to the Installation Guide for Residential Floors for additional information CCMC EVALUATION REPORT 13032-R

WEB HOLE SPECIFICATIONS

NI-20 NI-40x

NI-60

NI-70

NI-40x

NI-80

NI-40x NI-60 NI-70 NI-80

NI-90

NI-60

NI-70

9-1/2"

- The distance between the inside edge of the support and the centreline of any hole or duct chase opening shall be in compliance with the requirements of Table 1 or 2, respectively.
- I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified. Whenever possible, field-cut holes should be centred on the middle of the web.
- The maximum size hole or 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 maintened between the top or bottom of the hole or opening and the adjacent I-joist flange.

LOCATION OF CIRCULAR HOLES IN JOIST WEBS

5'-4"

4'-0" 4'-9"

1'-0" 1'-3" 3'-0" 4'-0" 1'-5"

0'-9" 0'-8" 1'-8"

0'-10"

Above table may be used for I-joist spacing of 24 inches on centre or less.

0'-8" 0'-8" 0'-8" 0'-8" 1'-0" 2'-3" 1'-3" 2-6" 0'-8" 0'-8" 0'-8" 0'-9"

for shorter spans; contact your local distributor

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf

7'-0" 8'-0"

2-4" 3-8" 4'-0" 5-0" 6'-6" 7-9" 2'-8" 4'-0" 5-0" 6'-6" 7-9" 2'-8" 4'-0" 4'-4" 5'-5" 7'-0" 8'-4" 4'-3" 5'-9" 6'-0" 7'-3" 8'-10' 10'-0" 5'-4" 6'-9" 7'-2" 8'-4" 10'-0" 11'-2" 3'-2" 4'-10" 5'-4" 6'-9" 8'-9" 10'-2" 11'-4" 3'-2" 4'-10" 5'-4" 6'-9" 8'-9" 10'-2"

4'-10" 5'-4" 6'-9" 4'-4" 4'-9" 6'-3" 2'-4" 2'-9" 3'-9" 4'-3" 4'-8" 5'-8" 5'-10" 6'-2" 7'-3" 6'-2" 6'-5" 7'-6" 4'-0" 4'-5" 5'-9"

2-6' 4-0' 4-5' 5-9' 7-5' 2-6' 4-2' 5-56' 7-3' 1-6' 2-10' 3-2' 4-2' 5-6' 3-6' 4-10' 5-3' 6-3' 7-8' 3-10' 5-3' 5-6' 6-6' 8-0' 1-9' 3-3' 3-8' 4-9' 6-5' 2-0' 3-6' 4-0' 5-0' 6-9'

Hole location distance is measured from inside face of supports to centre of hole.

Distances in this chart are based on uniformly loaded joists.

The above table is based on the L-joists being used at their maximum spans. The minimum distance as given above may be reduced

Minimum Distance from Inside Face of Any Support to Centre of Hole (ft - in.) Round Hole Diameter (in.)

- 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.
- 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 or duct chase opening) and each hole and duct chase opening shall be sized and located in compliance with the requirements of Tables 1 and 2, respectively.

 A knockout is **not** considered a hole, may be utilized anywhere it occurs, and may be
- ignored for purposes of calculating minimum distances between holes and/or duct
- 8. Holes measuring 1-1/2 inches or smaller are permitted anywhere in a cantilevered section of a joist. Holes of greater size may be permitted subject to verification
- 9. 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.

 10. All holes and duct chase openings shall be cut in a workman-like
- manner in accordance with the restrictions listed above and as illustrated in Figure 7. num size holes per span, of which one may be
- a duct chase opening.
- 12. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

DUCT CHASE OPENING SIZES AND LOCATIONS

	Joist Series	Minimum distance from inside face of supports to centre of opening (ft - in.) Duct Chase Length (in.)								
Joist Depth										
		8	10	12	14	16	18	20	22	24
	NI-20	4'-1"	4'-5"	4'-10"	5'-4"	5'-8"	6'-1"	6'-6"	7'-1"	7'-5"
	NI-40x	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
9-1/2"	NI-60	5'-4"	5'-9"	6'-2"	6'-7"	7'-1"	7'-5"	8'-0"	8'-3"	8'-9"
	NI-70	5'-1"	5'-5"	5'-10"	6'-3"	6'-7"	7'-1"	7'-6"	8'-1"	8'-4"
	NI-80	5'-3"	5'-8"	6'-0"	6'-5"	6'-10"	7'-3"	7'-8"	8'-2"	8'-6"
	NI-20	5'-9"	6'-2"	6'-6"	7'-1"	7'-5"	7'-9"	8'-3"	8'-9"	9'-4"
	NI-40x	6'-8"	7'-2"	7'-6"	8'-1"	8'-6"	9'-1"	9'-6"	10'-1"	10'-9"
	NI-60	7'-3"	7'-8"	8'-0"	8'-6"	9'-0"	9'-3"	9'-9"	10'-3"	11'-0"
11-7/8"	NI-70	7'-1"	7'-4"	7'-9"	8'-3"	8'-7"	9'-1"	9'-6"	10'-1"	10'-4"
	NI-80	7'-2"	7'-7"	8'-0"	8'-5"	8'-10"	9'-3"	9'-8"	10'-2"	10'-8"
	NI-90	7'-6"	7'-11"	8'-4"	8'-9"	9'-2"	9'-7"	10'-1"	10'-7"	10'-11"
	NI-90x	7'-7"	8'-1"	8'-5"	8'-10"	9'-4"	9'-8"	10'-2"	10'-8"	11'-2"
	NI-40x	8'-1"	8'-7"	9'-0"	9'-6"	10'-1"	10'-7"	11'-2"	12'-0"	12'-8"
	NI-60	8'-9"	9'-3"	9'-8"	10'-1"	10'-6"	11'-1"	11'-6"	13'-3"	13'-0"
14"	NI-70	8'-7"	9'-1"	9'-5"	9'-10"	10'-4"	10'-8"	11'-2"	11'-7"	12'-3"
14	NI-80	9'-0"	9'-3"	9'-9"	10'-1"	10'-7"	11'-1"	11'-6"	12'-1"	12'-6"
	NI-90	9'-2"	9'-8"	10'-0"	10'-6"	10'-11'	' 11'-5"	11'-9"	12'-4"	12'-11"
	NI-90x	9'-4"	9'-9"	10'-3"	10'-7"	11'-1"	11'-7"	12'-1"	12'-7"	13'-2"
	NI-60	10'-3"	10'-8"	11'-2"	11'-6"	12'-1"	12'-6"	13'-2"	14'-1"	14'-10"
	NI-70	10'-1"	10'-5"	11'-0"	11'-4"		12'-3"	12'-8"	13'-3"	14'-0"
16"	NI-80	10'-4"	10'-9"	11'-3"	11'-9"	12'-1"	12'-7"	13'-1"	13'-8"	14'-4"
	NI-90	10'-9"	11'-2"	11'-8"	12'-0"	12'-6"	13'-0"	13'-6"	14'-2"	14'-10"
	NI-90x	11'-1"	11'-5"	11'-10"	12'-4"	12'-10'	13'-2"	13'-9"	14'-4"	15'-2"

Above table may be used for I-joist spacing of 24 inches on centre or less. Duct chase opening location distance is measured from inside face of supports to centre of opening. The above table is based on simple-span joists only. For other applications, contact your local distributor. Distances are based on uniformly loaded floor joists that meet the span requirements for a design live load of 40 psf and dead load of 15 psf, and a live load deflection limit of L/480. 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.

FIELD-CUT HOLE LOCATOR of larger hole distance from bearing) 3/4x

6'-0" 6'-6" 8'-3" 10'-2" 8'-0" 8'-8" 10'-4" 11'-9" 9'-9" 10'-4" 12'-0" 13'-5" 10'-0" 10'-8" 12'-4" 13'-9" 8'-8" 9'-4" 11'-4" 12'-11'

10'-4" 12'-0" 13'-5" 10'-8" 12'-4" 13'-9" 9'-4" 11'-4" 12'-11"

Knockouts are prescored holes provided for the contractor's convenience to install electrical or small plumbing lines. They are 1-1/2 inches in diameter and are spaced 15 inches on centre along the length of the I-joist. Where possible, it is preferable to use knockouts instead of field-cut holes.

Never drill, cut or notch the flange, or over-cut the web.

Holes in webs should be cut with a sharp saw.

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 nother good method to minimize damage to the I-joist.

SAFETY AND CONSTRUCTION PRECAUTIONS



See Table 1 for

from bearing

Do not walk on I-joists until fully fastened and braced, or



Never stack building material over unsheathed I-joists. Once sheathed, do not over-stress I-ioists with concentrated loads from building materials.

WARNING: 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:

Maintain minimum 1/8" space between top and

bottom flange — all duct chase openings and holes

- 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.
- 2. 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
- Temporary bracing or struts must be 1x4 inch minimum, at least 8 feet long and spaced no more than 8 feet on centre, and must be secured with a minimum of two 2-1/2* 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.
- 3. For cantilevered Lioists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging. 4. Install and fully nail permanent sheathing to each I-joist before placing loads on the floor system. Then, stack building
- 5. Never install a damaged I-joist.

materials over beams or walls only.

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 of Follow these installation guidelines carefully.

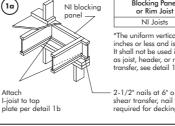


PRODUCT WARRANTY

Chantiers Chibougamau guarantees that, in accordance with our specifications, Nordic products are free from manufacturing defects in material and workmanship.

Furthermore, Chantiers Chibougamau warrants that our products, when utilized in accordance with our handling and installation instruction will meet or exceed our specifications for the lifetime of the structure.

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NI or rim board blocking

panel per detail 1a

(1b) Vertical Load* (plf) 3,300

Maximum Factored

/ertical Load per Pai

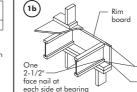
of Squash Blocks (lbs)

5,500 8,500

4,300 6,600

*The uniform vertical load is limited to a joist depth of 16 es or less and is based on standard term load duration It shall not be used in the design of a bending member, such as joist header or rafter For concentrated vertical load

2-1/2" nails at 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for decking)



or Rim Joist Vertical Load* (plf) 8,090

header, or rafter. For concentrated vertical load transfer, see detail 1d.

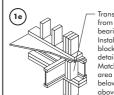
1-1/8" Rim Board Plus *The uniform vertical load is limited to a rim board depth of 16 inches or less and is based or standard term load duration. It shall not be used in the design of a bending member, such as joist,

One 2-1/2" wire or spiral nail at top and bottom flange

Attach rim board to top plate using 2-1/2" wire or spiral toe-nails at 6" o.c.

To avoid splitting flange, start nails at least 1-1/2" from end of I-joist Nails may be driven at an angle to avoid splitting of bearing plate

Minimum bearing length shall be 1-3/4" for the end bearings, and 3-1/2" for the intermediate bearings when applicable.



rom above to bearing below Install squash detail 1d. Match bearing area of blocks below to post

Joist attachment Load bearing wall above shall alian vertically with the bearing below. Other conditions, such as offset bearing walls, are not covered by Blocking required over all interior supports under load-bearing walls or when floor joists are not continuous over support 2-1/2" nails - NI blocking panel per detail 1a at 6" o.c.

(1h) Backer block (use if hanger load exceeds 360 lbs). Before installing a backer block to a double Light drive three additional 2th and the second street of the second street double I-joist, drive three additional 3" nails through the webs and filler block where the backer block will fit. Clinch. Install backer tight to top flange. Use twelve 3" nails, clinched

2x Lumber

1-1/8" Rim Board Plus

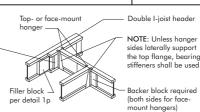
Provide lateral bracing per detail 1a or 1b

BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

	Flange Width	Material Thickness Required*	Minimum Depth**				
	2-1/2"	1"	5-1/2"				
	3-1/2"	1-1/2"	7-1/4"				
* Minimum grade for backer block material shall be S-P-F No. 2 or better for solid sawn lumber and							

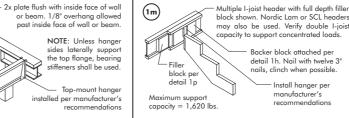
- wood structural panels conforming to CAN/CSA-O325 or CAN/CSA-O437 Standard. For face-mount hangers use net joist depth minus 3-1/4" for joists with 1-1/2" thick flanges.
- For 2" thick flanges use net depth minus 4-1/4".

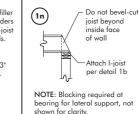
NOTES



For hanger capacity see hanger manufacturer' recommendations. Verify double I-joist capacity to support Nordic Lam or Structural Composite Lumber (SCL) For nailing schedules for multiple beams, see the manufacturer's recommendations. Top- or face-mount hange installed per manufacturer's

NOTE: Unless hanger sides laterally support the top flange bearing stiffeners shall be used.

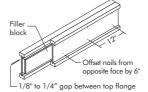






Lumber 2x4 min extend block to face of adjacent web. Two 2-1/2" spiral nails from each web to lumber piece, alternate on opposite side applied to underside of joist at blocking line or 1/2 inch minimum gypsum

FILLER BLOCK REQUIREMENTS FOR DOUBLE I-JOIST CONSTRUCTION



3. Filler block is required between joists for full length 4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinched when possible) on each side of the doub I-joist. Total of four nails per foot required. If nails can clinched, only two nails per foot are required.

and bottom of top I-joist flange.

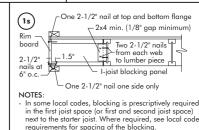
damage to web/flange connection

The maximum factored load that may be applied to on side of the double joist using this detail is 860 lbf/ft. Verify double I-joist capacity.

1. Support back of I-joist web during nailing to prevent

2. Leave a 1/8 to 1/4-inch gap between top of filler block

	Flange Size	Net Depth	Filler Block Size
<	2-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	2-1/8" x 6" 2-1/8" x 8" 2-1/8" x 10" 2-1/8" x 12"
le be	3-1/2" x 1-1/2"	9-1/2" 11-7/8" 14" 16"	3" x 6" 3" x 8" 3" x 10" 3" x 12"
ne	3-1/2" x 2"	11-7/8" 14" 16"	3" x 7" 3" x 9" 3" x 11"



All nails are common spiral in this detail

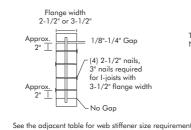
All nails shown in the above details are assumed to be noted, 3" (0.122" dia.) may be substituted 2-1/2" (0.128" dia.) ssumed to be Spruce-Pine-Fir No. 2 or better. Individual components not show

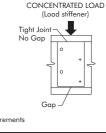
WEB STIFFENERS

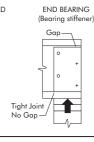
- A bearing stiffener is required in all engineered applications with factored reactions greater than shown in the I-joist properties table found of the I-joist Construction Guide (C101). The gap between the stiffener and the flange is at
- A bearing stiffener is required when the I-joist is supported in a hange and the sides of the hanger do not extend up to, and support, the top flange. The gap between the stiffener and flange is at the top.
- A load stiffener is required at locations where a factored concentrated load greater than 2,370 lbs is applied to the top flange between supports, or in the case of a cantilever, anywhere between the cantilever tip and the support. These values are for standard term load duration, and may be adjusted for other load durations as permitted by the code. The gap between the stiffener and the flange is at the bottom.

FIGURE 2

WEB STIFFENER INSTALLATION DETAILS





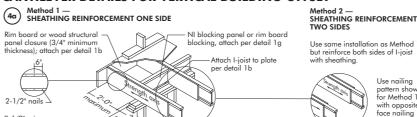


STIFFENER SIZE REQUIREMENTS Web Stiffener Size Each Side of Web 1" x 2-5/16" 2-1/2"

1-1/2" x 2-5/16"

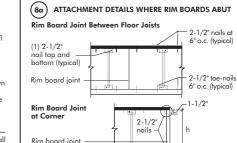
CONNECTION

CANTILEVER DETAILS FOR VERTICAL BUILDING OFFSET



NOTE: Canadian softwood plywood sheathing or equivalent (minimum thickness 3/4") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach

RIM BOARD INSTALLATION DETAILS





3-1/2"

