

Joist



ALPA LUMBER INC.

BUILDING ON STRENGTH AND SIMPLICITY

Introducing Joist™

The strong, quiet alternative

WHISPER QUIET

The distinctive window in the centre of the AlpaJoist™ eliminates the need for old-fashioned bridging, reducing the possibility of squeaking. The traditional I-joist requires traditional bridging to hold it securely in place. This means many short sections of timber must be toe-nailed to each joist. Hammering the nails in on such an angle reduces their strength by 17%, increasing the likelihood that in time the nails will work their way loose and cause squeaking. The AlpaJoist's patented window system solves that problem by allowing for fast and efficient strongback installation. Long timbers slide quickly through the centre openings, and are then easily nailed in place –at the

desired 90-degree angle. Strongback installation is recognized as the most effective bridging method for vibration reduction because it introduces a continuous stiffness in the transverse direction of a floor system.

SUPER STRONG

The AlpaJoist™ is comprised of more wood than the standard I-joist because its openings are re-inforced with double flanges, top and bottom. The double-flange configuration provides additional stiffness at the critical section. While most joists are made so that openings can be cut into them, the AlpaJoist™ is the only one with engineered openings, guaranteed to maintain the structural integrity of the joist for the life of the home.

REDUCES LABOUR

The engineered openings in the AlpaJoist™ eliminate the need for trades to drill through a series of joists before commencing installation of plumbing, heating and electrical systems. They simply thread the wires, pipes and ductwork through the patented window.

SAVES TIME

AlpaJoist's engineered window appeals to volume builders wanting to speed up site completion. Plumbers, electricians and installers of heating systems can get in and out of an AlpaJoist™ home very quickly. The AlpaJoist™ is the most efficient I-joist ever manufactured.

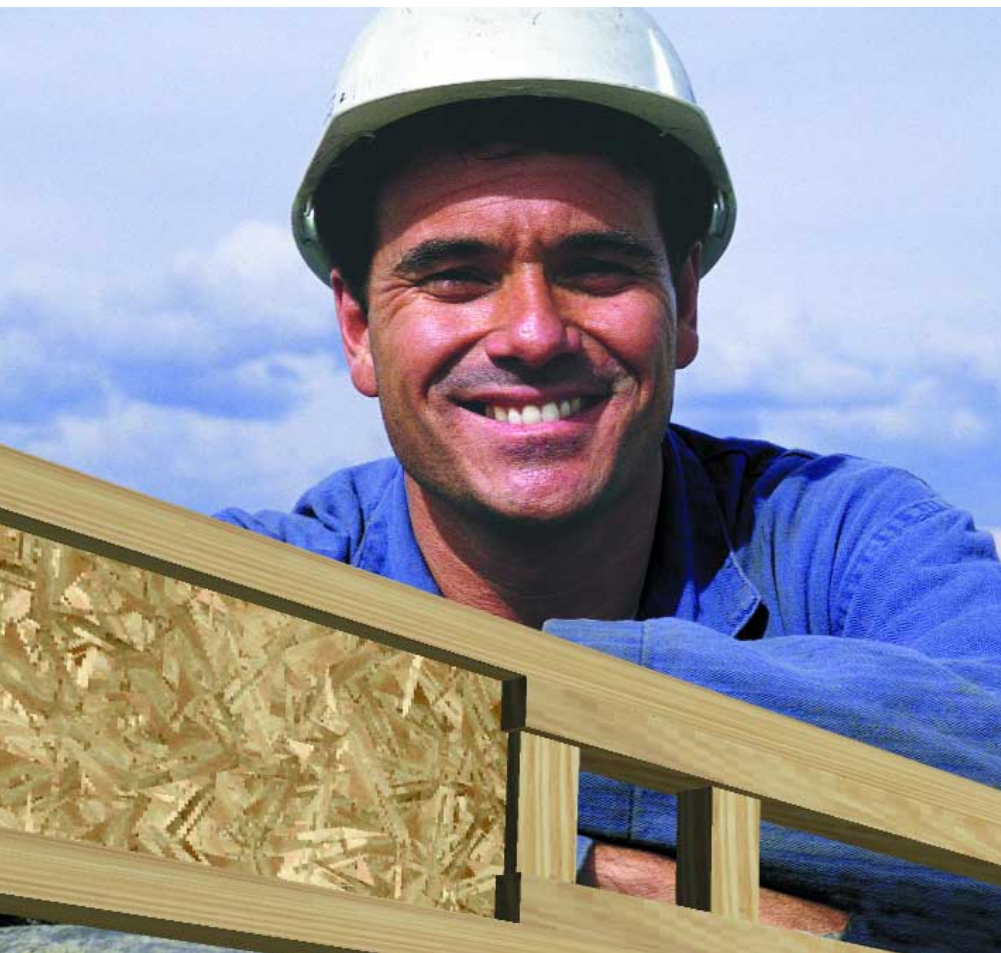
ELIMINATES BULKHEADS

When you use the 11 7/8" or larger AlpaJoist™, ductwork may slide quickly and easily through the engineered openings, eliminating the need to drop the ductwork under the joists. This eliminates basement bulkheads.

ENVIRONMENTALLY FRIENDLY

The AlpaJoist™ is made completely of wood, a renewable resource. Canada's forests are currently expanding, thanks to a comprehensive re-planting program recognized by the United Nations as one of the best in the world. Wood is also recyclable.

There's no joist like it!



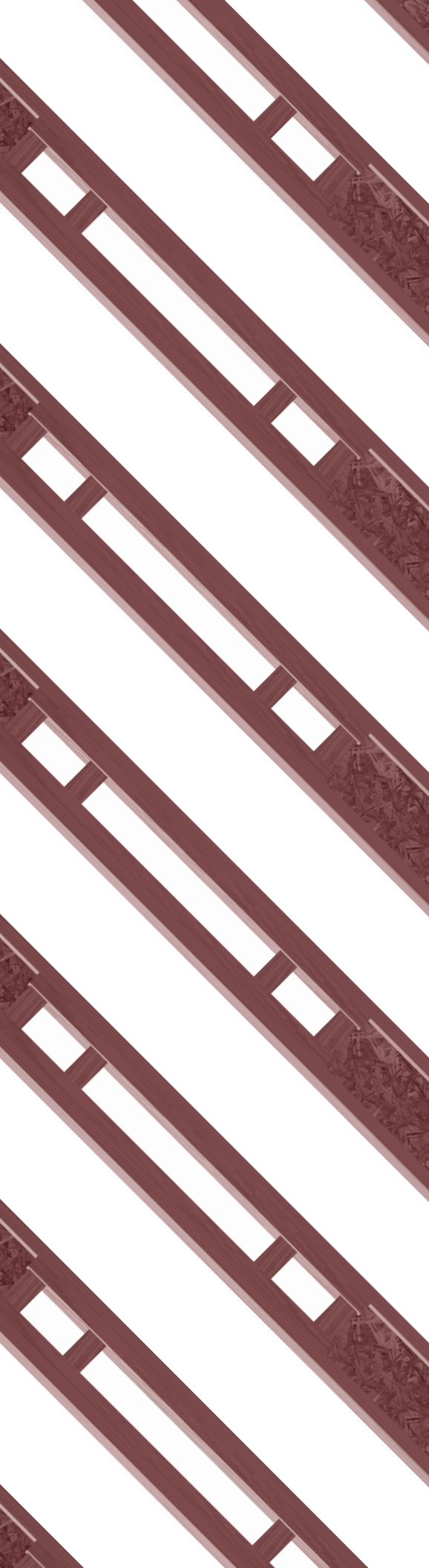


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ALPAJOIST™

U.S. APPROVAL:

ICC-ES Legacy Report No. 22-37



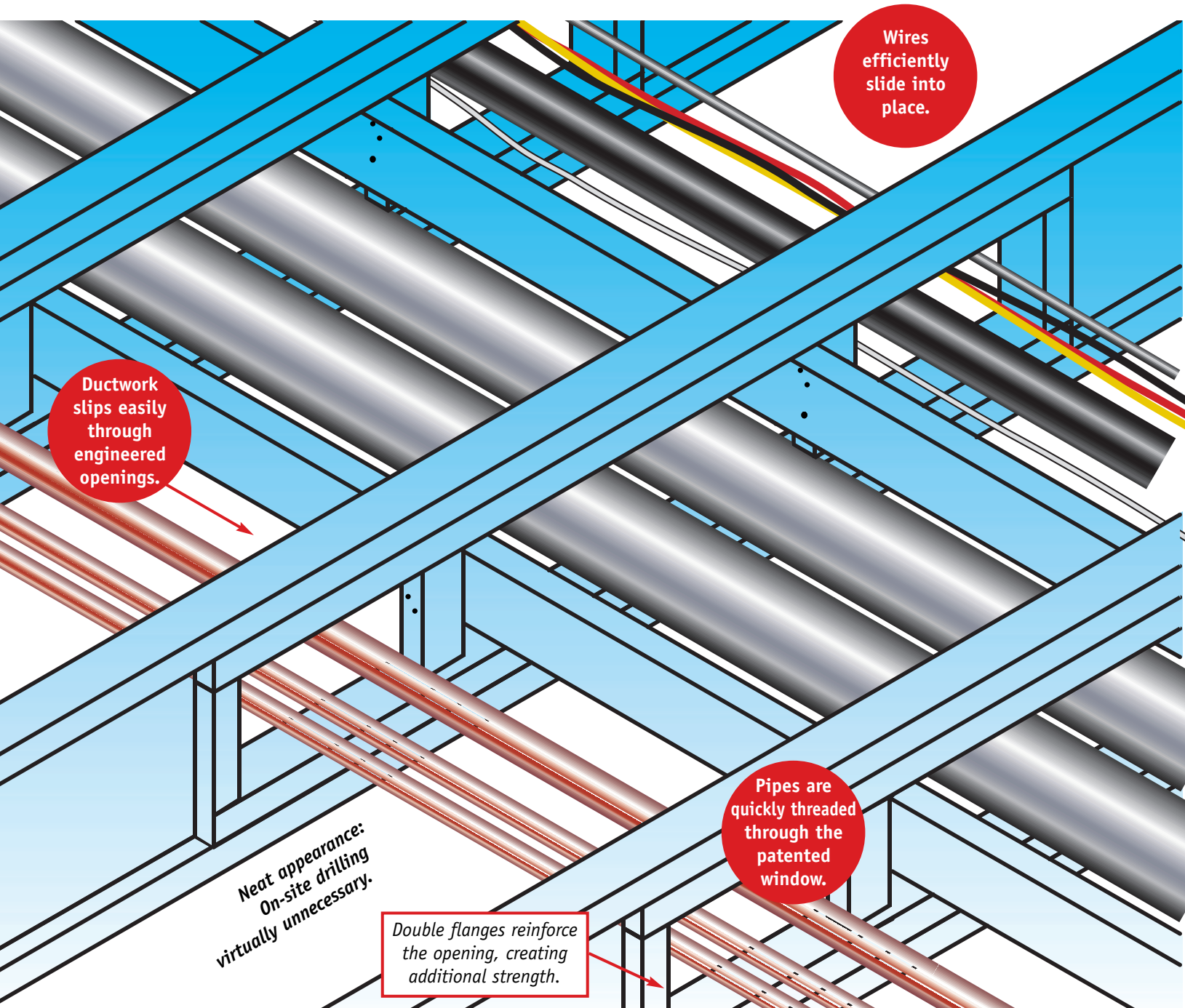
Floor System Inc. Warranty

LIFETIME PRODUCT WARRANTY

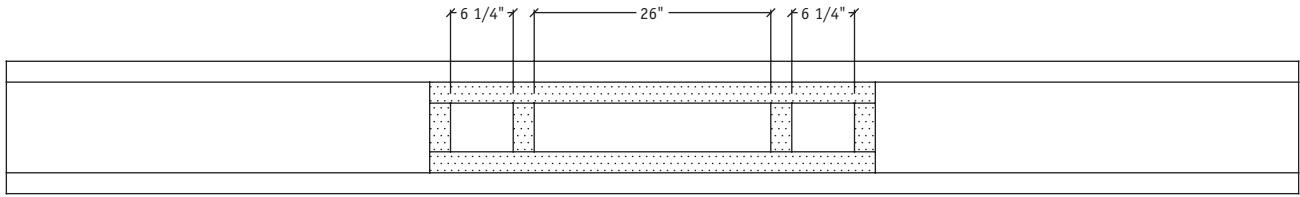
The AlpaJoist™ is warranted to be free from defects for the lifetime of the structure in which the product is installed. For full details, see page 20 of this brochure.

Our Design is the Difference

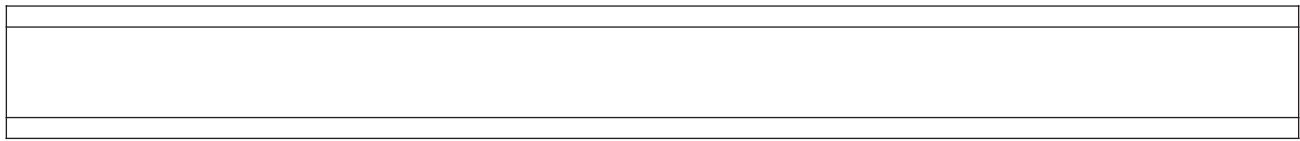
Built-in windows mean faster piping and wiring, a *real* time saver.



Product Description



ALPA QFS[•] I-JOIST A310E, A312E, A314, A314M

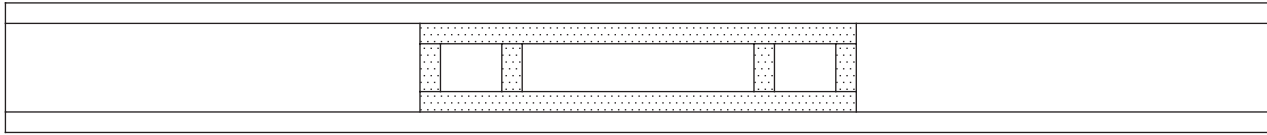


ALPA QFS[•] I-JOIST B310, B312, B314

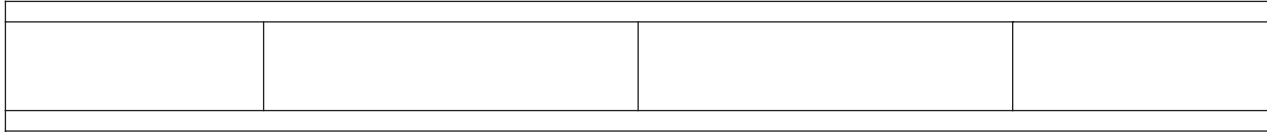
QFS[•] I-JOISTS

Joist Series	Flange <i>(Equivalent or Better)</i>	Web (10mm)	Dept	Window Opening Height
A 310E	3 x 2 SPF#2	3/8" OSB	9 1/2"	4 1/4"
A 312E	3 x 2 SPF#2	3/8" OSB	11 7/8"	6 5/8"
A 314	3 x 2 SPF#2	3/8" OSB	14"	8 3/4"
A 314M	3 x 2 APG ¹	3/8" OSB	14"	8 3/4"
B 310	3 x 2 SPF#2	3/8" OSB	9 1/2"	NONE
B 312	3 x 2 SPF#2	3/8" OSB	11 7/8"	NONE
B 314	3 x 2 SPF#2	3/8" OSB	14"	NONE

¹ ALPA #1 Proprietary Lumber Grade.

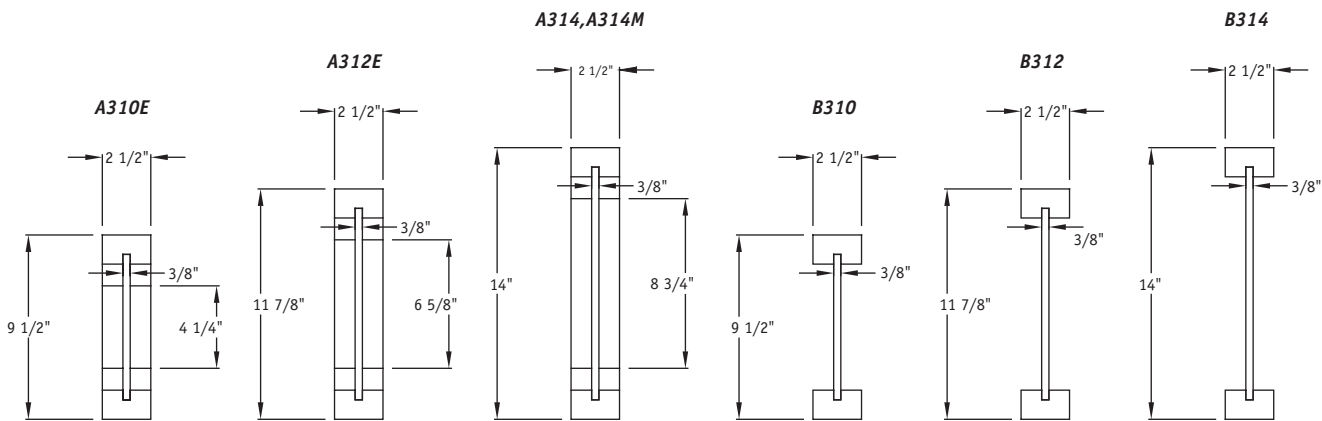


QFS®-A I-Joists series



QFS®-B I-Joists series

QFS® I-JOISTS



• TYPICAL I-JOIST CROSS SECTION

Allowable Design Properties

I-Joist	Depth (in.)	Allowable Moment (ft-lbf)	Allowable Reaction/Shear (lbf)			EI (in ² -lbf) x 10 ⁸	Shear Defl. 'K' factor (lbf) x 10 ⁶	Self Weigh (lbf/ft)
			1.5 in. Bearing	3.5 in. Bearing	3.5 in. Intermediate			
A310E	9.5	2298	697	747	747	1.72	3.62	2.43
A312E	11.875	2868	798	955	1093	2.91	4.52	2.71
A314	14	2458	760	1052	1018	4.28	5.33	2.96
A314M	14	3690	760	1052	1018	4.56	5.33	2.96
B310	9.5	1417	697	747	747	1.68	3.62	2.43
B312	11.875	1886	798	955	1093	2.79	4.52	2.71
B314	14	2307	760	1052	1018	4.02	5.33	2.96

SI: 1 in. = 25.4 mm, 1 ft = 304.8 mm, 1 lb = 4.4 N

Glossary of Terms:

RIM BOARD:

OSB parameter board provides lateral restraint to I-joists, transfers load from load bearing wall above as well as lateral load from shear wall and floor diaphragm above to support structure below.

SQUASH BLOCK:

Traditional 2x Lumber Block required for transferring gravity load between upper and lower bearing wall due to absence or inadequacy of rim board.

STRONGBACK:

Traditional, continuous 2x lumber installed perpendicular to joist direction to reduce vibration of a floor system.

BACKER BOARD:

OSB or 2x lumber to provide flange support for top mount hangers and support for face mount hanger.

WEB STIFFENER:

Plywood or OSB board required to prevent buckling of web at exterior or interior bearing when web capacity is exceeded.

FILLER BLOCK:

OSB or 2x lumber blocks required when laminating 2 I-joists together.

BLOCKING PANELS:

Section of solid joist between I-joists to provide lateral support at bearing.

OUTRIGGER:

Conventional pressure treated lumber nailed to I-joists for exterior balcony framing.

BRICK LEDGE:

Upper floor joists (siding condition) cantilever over brick veneer at storey below (maximum 5").

NON LOAD-BEARING

CANTILEVER:

Cantilever I-joists with no additional loading such as upper floor load or roof load.

LOAD-BEARING CANTILEVER:

Cantilever I-joists with additional loading from upper floor and/or roof load.

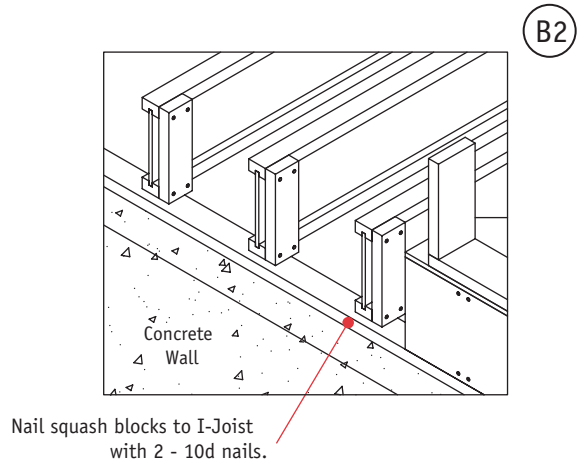
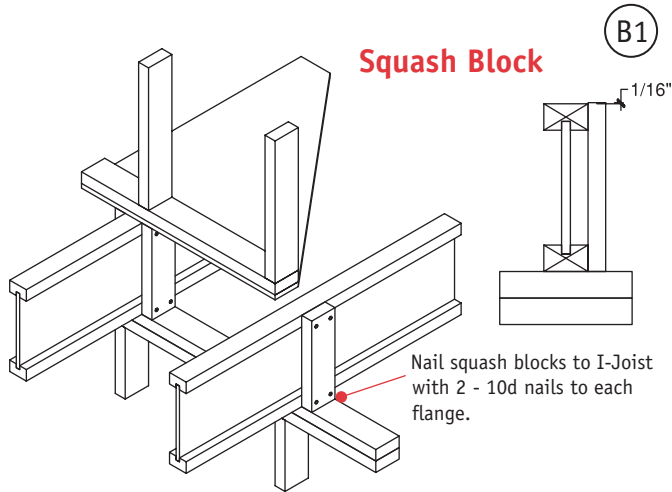
Installation Notes:

1. Proper temporary bracing must be in place during construction.
2. Joists are to be used for dry service conditions only.
3. Joists must be restrained from rotation or blocking. Use rim board at blocking panels at each end.
4. Minimum 1 1/2" bearing required unless otherwise specified.
5. Use rim joists and/or squash blocks for load transfer between floors.
6. JOISTS SHALL NOT be in direct contact with concrete or masonry.
7. Blocking panels are required between joists at cantilever bearing location.
8. DO NOT suspend load at bottom flange.
9. DO NOT exceed design load during construction.
10. When glued flooring is required, apply approximately 1/4" diameter of glue along the top of the joists in a loose "s" pattern and ensure floor sheathing edge is adequately glued. Apply glue to dry surface and follow manufacturer's instructions. Glue used to comply with standard CAN/CGSB-71.26-M. "Adhesives for Field - Gluing Plywood to Lumber Framing for Floor Systems".
11. Insert strongback before enclosing floor cavity.
12. At no time can the web on one side of the opening be more than two feet longer than that of the other side after field trimming.

Handling & Storage:

1. Stack joists in upright position.
2. Store package level and straight.
3. Joists shall be wrapped and shall not be in direct contact with the ground.
4. Leave bundles wrapped until installation.

Bearing Details

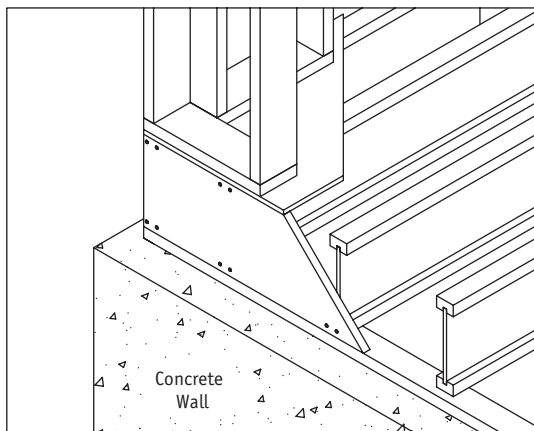


Notes:

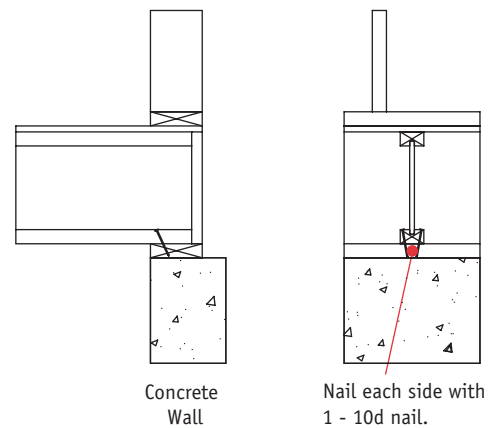
1. Squash blocks are required for vertical load transfer between floors, either to compliment or in absence of rim board.
2. Squash blocks are to be 1/16" higher than joist.
3. Squash blocks are to be 2 x 4 or 2 x 6 SPF#2.
4. Capacities shown are for one block per joist.

Maximum factored Squash Block capacity for vertical load transfer (PLF)

Size	Squash Block Spacing			
	12"	16"	19.2"	24"
2 x 4	2231	1674	1395	1116
2 x 6	3506	2630	2192	1753



Rim Board



Notes:

1. Rim board is required at all exterior bearing walls except cantilever joist location.
2. Rim board to be minimum 1 1/8" in thickness.
3. Rim board to be minimum OSB Type 1 design rated or equivalent.
4. Rim board to be fully supported on bearing wall plates.
5. Rim board to be full height of I-Joists.
6. Install rim board with face grain horizontal.
7. Connect rim board to wall plate with 10d nails @ 6" o.c.
8. Connect rim board to I-Joist flanges with 2 - 10d nails to each flange.
9. Rim board must be designed adequately for vertical load transfer.

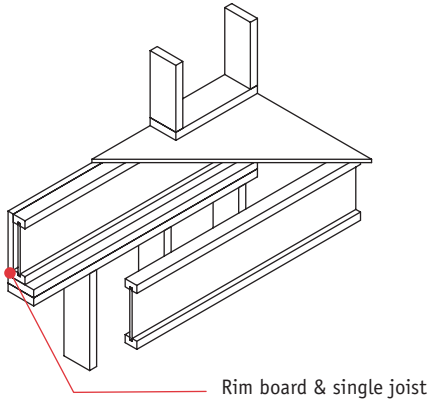
Maximum factored Rim Board capacity for vertical load transfer (PLF)

Depth	OSB Thickness 1 1/8"
9 1/2"	3825
11 7/8"	3825
14"	3825

Bearing Details

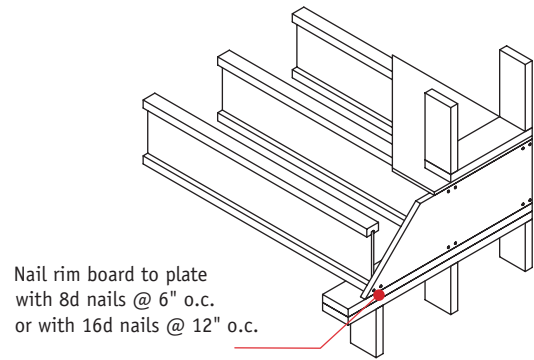
I-Joist Parallel

B4



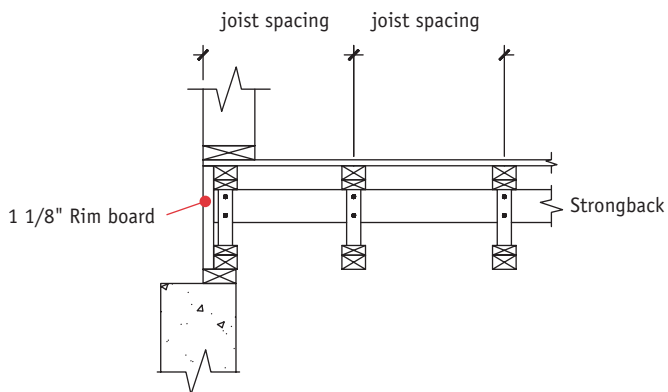
I-Joist Perpendicular

B5



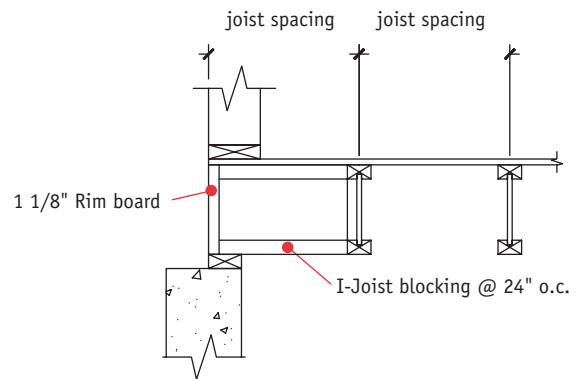
End Wall Support - Strongback

B6



End Wall Support - Blocking Panels

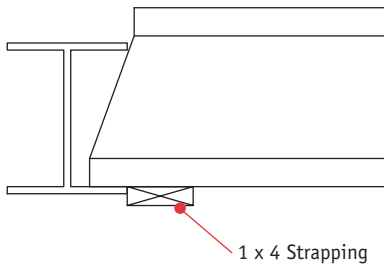
B7



Bearing Details

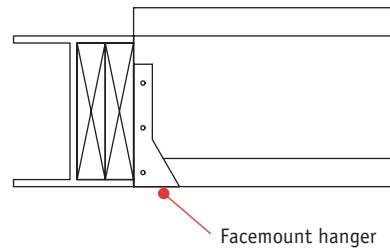
Joist Bearing at Steel Beam

B7



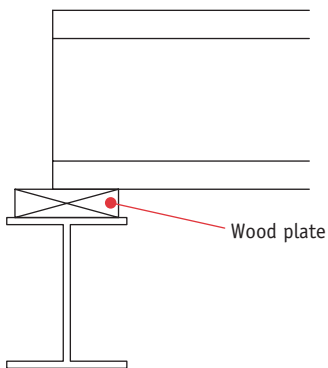
Joist Bearing at Steel Beam

B8



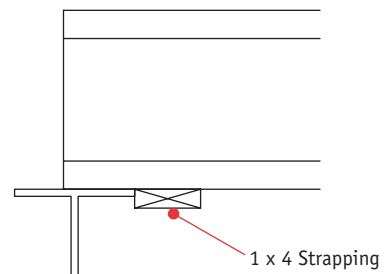
Joist Bearing at Steel Beam

B9

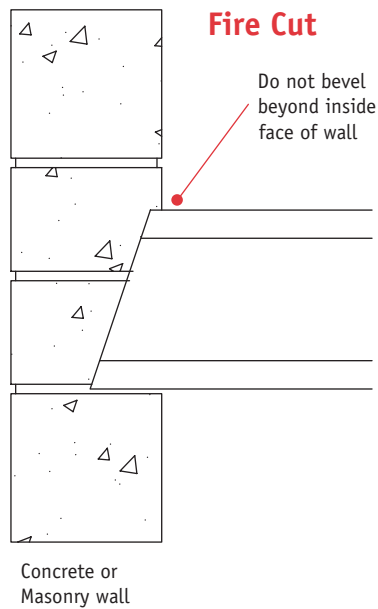


Joist Bearing at Steel Beam

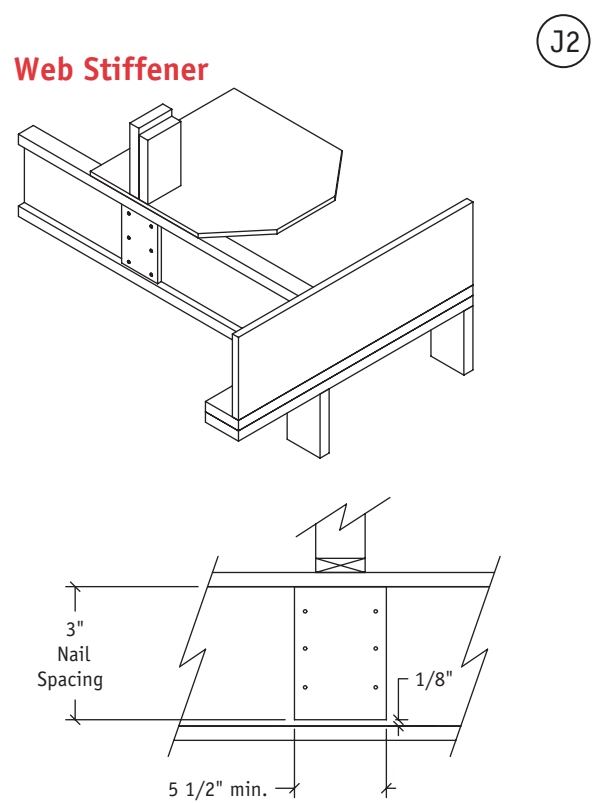
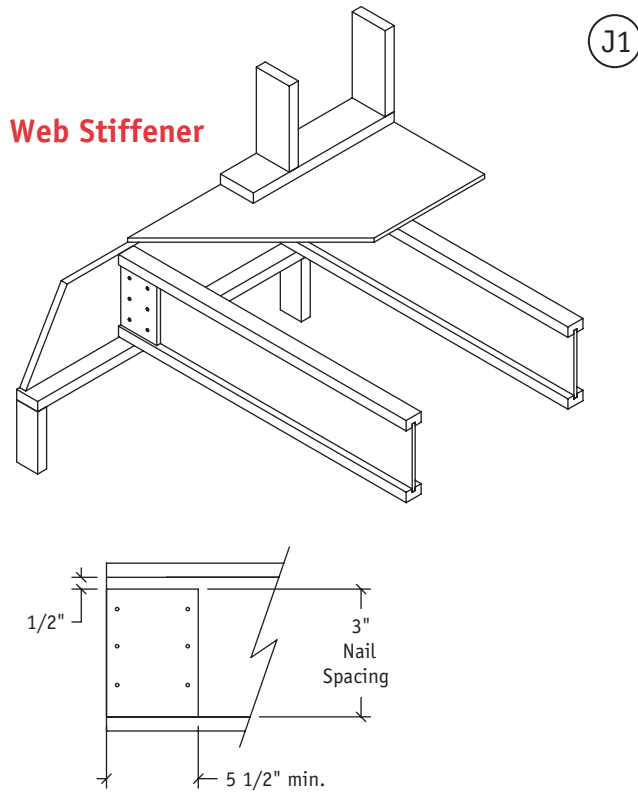
B10



B11



Joist Details



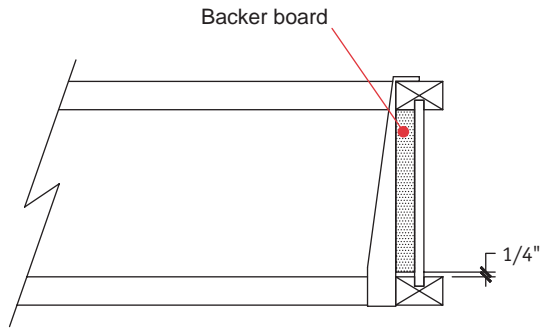
Notes:

1. Web stiffener may be required at bearing to prevent web buckling. When required, web stiffener must have 1/2" gap at top flange and be tight against the bottom flange.
2. Web stiffener may be required under heavy concentrated load. When required, web stiffener must have a 1/8" gap at the bottom flange and be tight against the top flange.
3. Web stiffeners are required when joist hangers do not laterally support the top flange of the joist.
4. Web stiffener may be made from 2x lumber, OSB or plywood.
5. When required, web stiffener to be applied to both sides of the web.
6. For most simple spans and uniform loading conditions, web stiffeners are not required.
7. Use 10d nails for web stiffener connection.
8. See design properties for maximum end reaction (without web stiffener.)
9. Consult Alpha design office for concentrated load requirement.

Joist Details

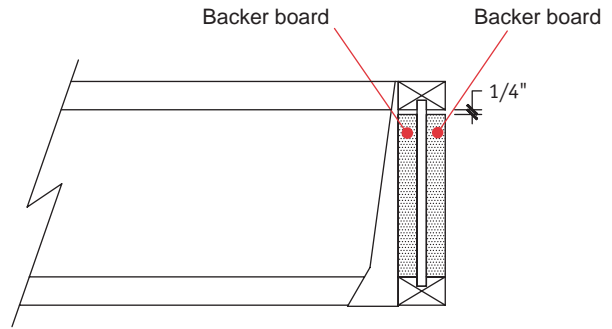
(J3)

Hanger Connection



(J4)

Hanger Connection

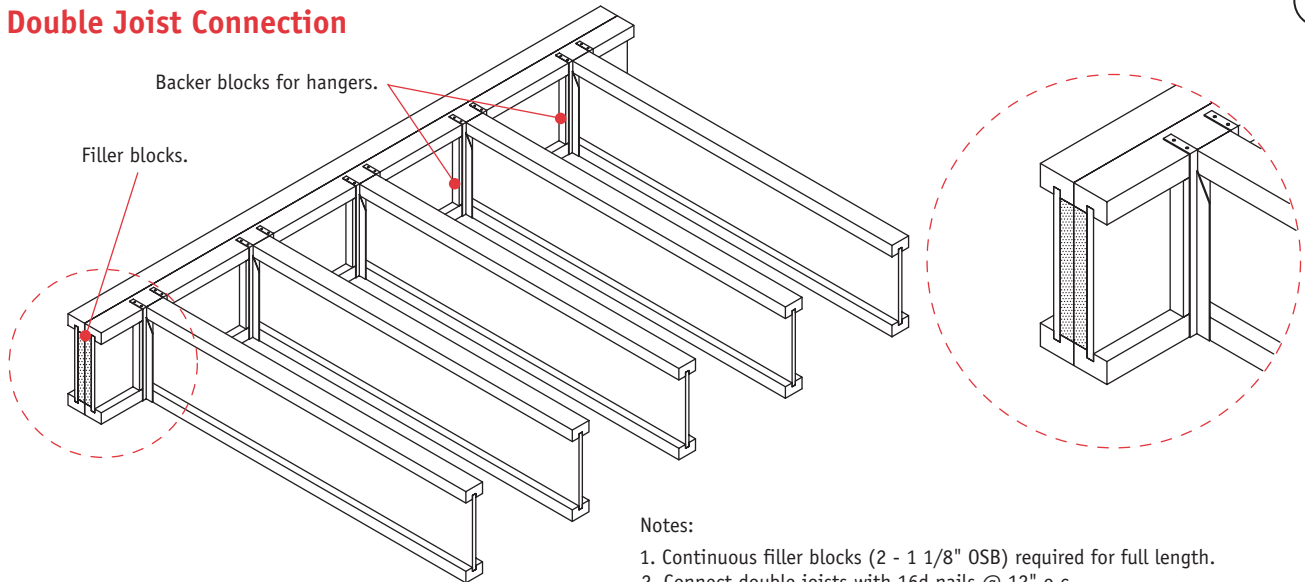


Notes:

1. When supporting hangers, Backer boards are required.
2. Backer board to be 1 1/8" OSB material.
3. Install backer board tight to the top flange for top mount hanger and tight to the bottom flange for face mount hanger.
4. Do not use face mount hanger in window area of joist.
5. Verify capacity and fastening requirements of hangers and connectors with manufacturers recommendations.

(J5)

Double Joist Connection

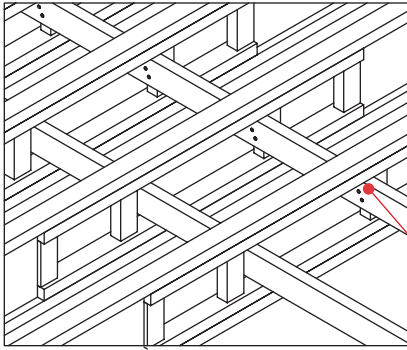


Notes:

1. Continuous filler blocks (2 - 1 1/8" OSB) required for full length.
2. Connect double joists with 16d nails @ 12" o.c. staggered on each side in 3 rows.
3. Maximum factored support load = 480 (PLF)

Joist Details

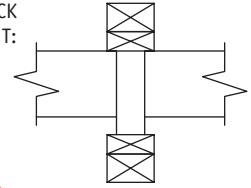
Strongback



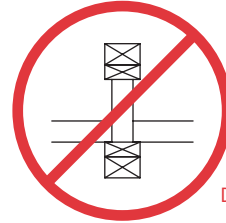
Joists	Strongback
A310E	2 x 4 SPF#2
A312E	2 x 4, 2 x 6 SPF#2
A314	2 x 4, 2 x 6 SPF#2
A314M	2 x 4, 2 x 6 SPF#2

Connect strongbacks to post with min. 2 - 10d nails

TYPICAL STRONGBACK ATTACHMENT:



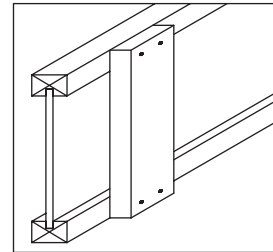
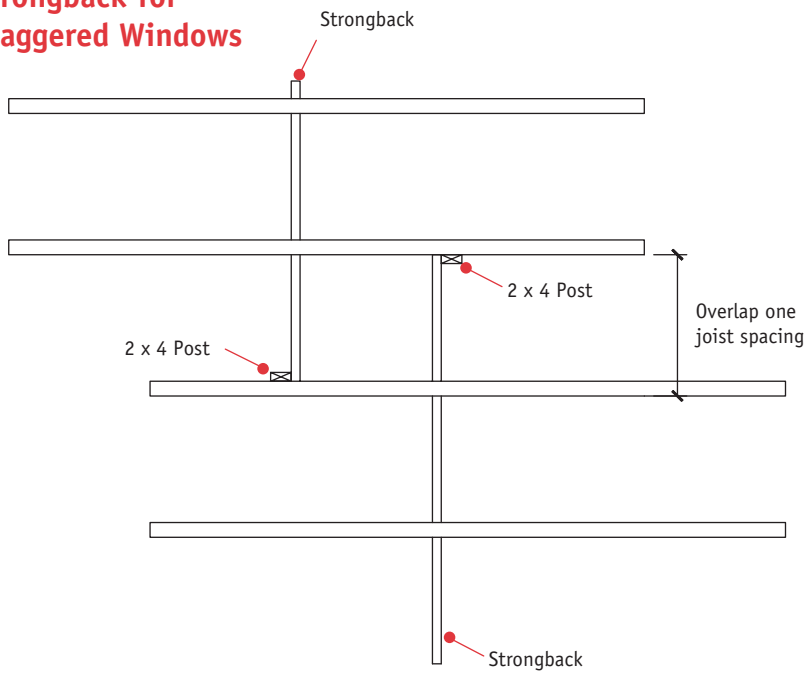
Strongback to be applied on edge only.



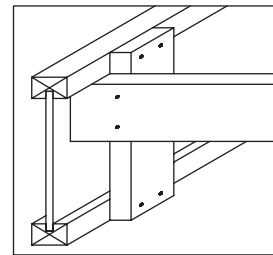
DO NOT PUT ON FLAT

J6

Strongback for Staggered Windows



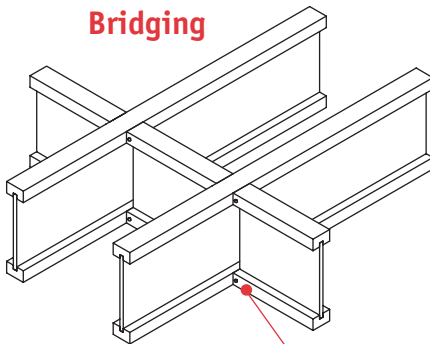
1) 2 x 4 Post nailed to side of joist with 2 - 10d nails.



2) Strongback nailed to side of post with 2 - 10d nails.

J7

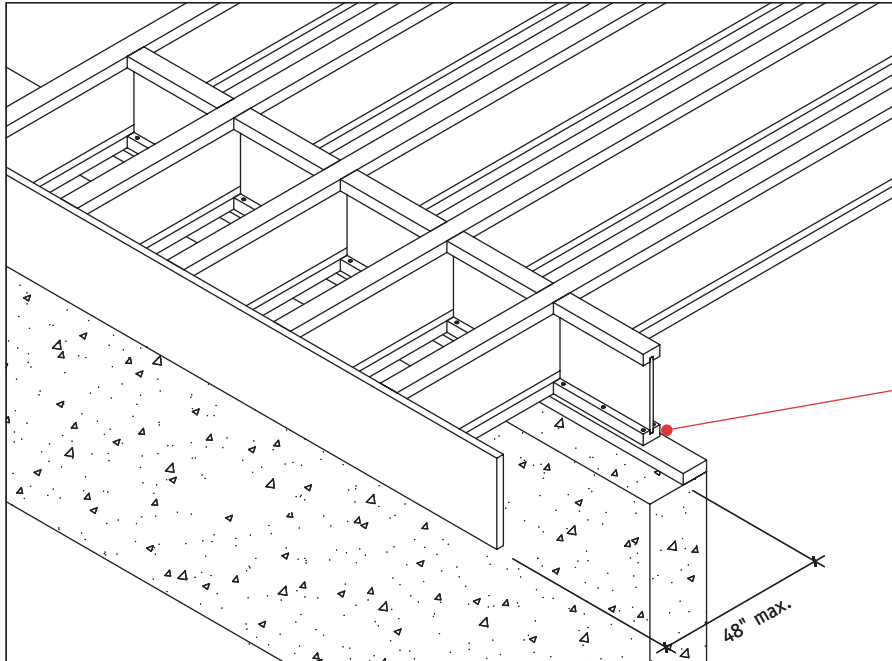
Bridging



Toe nail bridging at each end using 1 - 8d nail on each side of top and bottom flange.

Cantilever Details

C1



Non Load-Bearing Cantilever (Unreinforced)

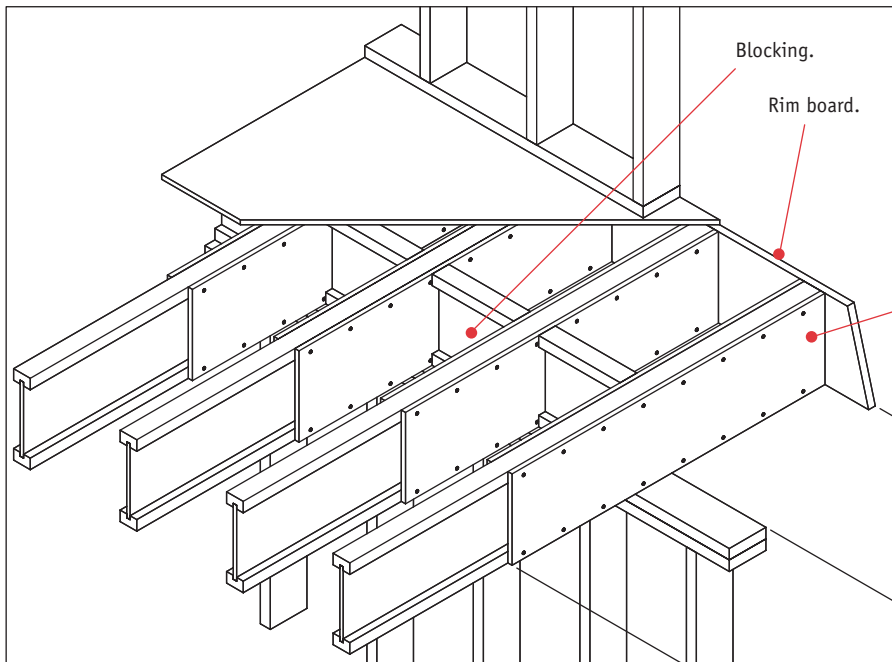
- with Blocking Panels

Nail blocking panels to bearing wall plate with 10d nails @ 6" o.c. staggered on both sides of bottom flange.

Notes:

1. Blocking panel provides lateral support for cantilever I-Joist at bearing.

C2



Load-Bearing Cantilever (Reinforced)

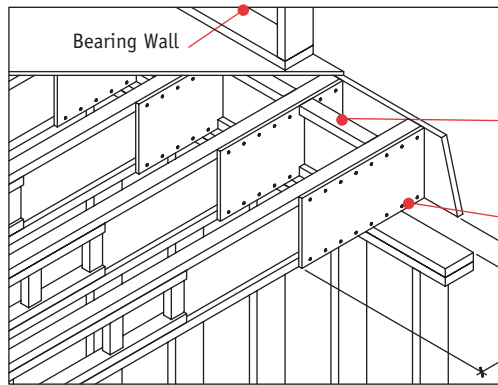
- with Blocking Panels

5/8" plywood reinforcement on both sides nailed to top and bottom flanges with 8d nails @ 6" o.c. staggered on each side.

Notes: 1. Consult Alpa Design office for load bearing capacity.

24" Maximum
48" Minimum

Cantilever Details



Brick Ledge - Uniform Load

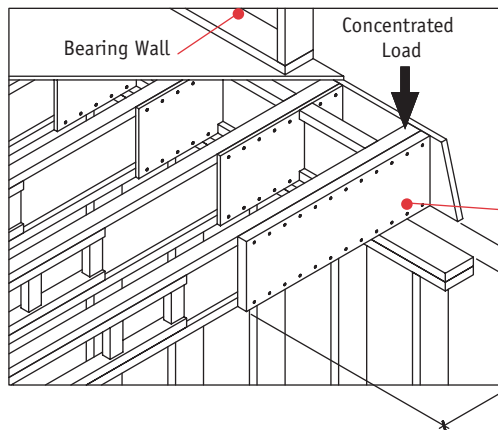
Nail blocking panels to bearing wall plate with 10d nails @ 6" o.c. staggered on both sides of the bottom flange.

5/8" plywood reinforcement (min. 24" long), nailed to top and bottom flanges with 8d nails @ 3" o.c.

5" Maximum cantilever.

24" Minimum

C3



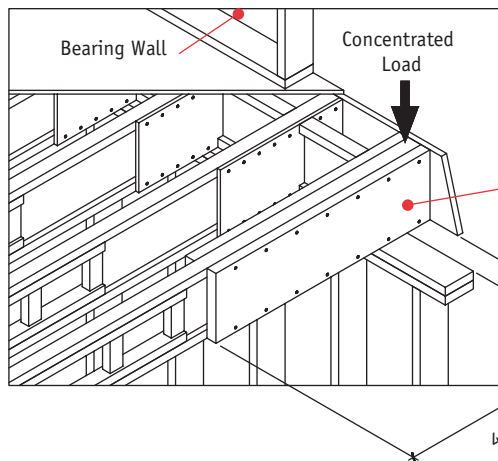
Brick Ledge - Concentrated Load

1 - 1 3/4" LVL on one side nailed to top and bottom flanges with 10d nails @ 3" o.c. (max. 2604# factored)

5" Maximum cantilever.

36" Minimum

C4



Brick Ledge - Concentrated Load

1 - 1 3/4" LVL on both sides nailed to top and bottom flanges with 10d nails @ 6" o.c. staggered each side (max. 5206# factored)

5" Maximum cantilever.

42" Minimum

C5

Maximum Floor Spans ASD - Clear Span

ALPA QFS-A SERIES WITH WINDOW

Product Code	Joist Depth (in)	Sheathing Connection	Load Dead/Live (psf)	Subfloor thickness = 5/8 in.							
				Live load deflection limit @ L/360				Live load deflection limit @ L/480			
				12"	16"	19.2"	24"	12"	16"	19.2"	24"
A310E	9 1/2"	Nailed only	10/40	18'-01"	16'-04"	15'-03"	13'-10"	16'-04"	14'-09"	13'-09"	12'-08"
			15/40	18'-01"	16'-04"	15'-03"	12'-07"	16'-04"	14'-09"	13'-09"	12'-07"
			20/40	18'-01"	16'-04"	14'-05"	11'-06"	16'-04"	14'-09"	13'-09"	11'-06"
		Nailed and glued	10/40	19'-03"	17'-07"	16'-07"	13'-10"	17'-05"	15'-10"	15'-00"	13'-10"
			15/40	19'-03"	17'-04"	15'-09"	12'-07"	17'-05"	15'-10"	15'-00"	12'-07"
			20/40	19'-01"	16'-08"	14'-05"	11'-06"	17'-05"	15'-10"	14'-05"	11'-06"
A312E	11 7/8"	Nailed only	10/40	21'-07"	19'-06"	18'-03"	15'-11"	19'-06"	17'-07"	16'-05"	15'-02"
			15/40	21'-07"	19'-04"	17'-08"	14'-05"	19'-06"	17'-07"	16'-05"	14'-05"
			20/40	21'-03"	18'-06"	16'-07"	13'-03"	19'-06"	17'-07"	16'-05"	13'-03"
		Nailed and glued	10/40	22'-10"	20'-03"	18'-06"	15'-11"	20'-08"	18'-10"	17'-09"	15'-11"
			15/40	22'-02"	19'-04"	17'-08"	14'-05"	20'-08"	18'-10"	17'-08"	14'-05"
			20/40	21'-03"	18'-06"	16'-07"	13'-03"	20'-08"	18'-06"	16'-07"	13'-03"
A314	14"	Nailed only	10/40	21'-07"	18'-10"	17'-03"	15'-01"	21'-07"	18'-10"	17'-03"	15'-01"
			15/40	20'-08"	18'-00"	16'-06"	13'-09"	20'-08"	18'-00"	16'-06"	13'-09"
			20/40	19'-10"	17'-03"	15'-09"	12'-07"	19'-10"	17'-03"	15'-09"	12'-07"
		Nailed and glued	10/40	21'-07"	18'-10"	17'-03"	15'-01"	21'-07"	18'-10"	17'-03"	15'-01"
			15/40	20'-08"	18'-00"	16'-06"	13'-09"	20'-08"	18'-00"	16'-06"	13'-09"
			20/40	19'-10"	17'-03"	15'-09"	12'-07"	19'-10"	17'-03"	15'-09"	12'-07"
A314M	14"	Nailed only	10/40	<u>25'-00"</u>	22'-01"	18'-11"	15'-01"	22'-07"	20'-05"	18'-11"	15'-01"
			15/40	24'-03"	20'-08"	17'-02"	13'-09"	22'-07"	20'-05"	17'-02"	13'-09"
			20/40	23'-03"	18'-11"	15'-09"	12'-07"	22'-07"	18'-11"	15'-09"	12'-07"
		Nailed and glued	10/40	<u>25'-05"</u>	22'-01"	18'-11"	15'-01"	<u>23'-10"</u>	21'-09"	18'-11"	15'-01"
			15/40	24'-03"	20'-08"	17'-02"	13'-09"	23'-10"	20'-08"	17'-02"	13'-09"
			20/40	23'-03"	18'-11"	15'-09"	12'-07"	23'-03"	18'-11"	15'-09"	12'-07"

Notes:

1. The spans are determined in accordance with National Design Specification for Wood Construction ANSI/AF&PA NDS-1977.
2. These spans are appropriate for single-span and simple-supported floors.
3. Consult appropriate sections of Alpa Floor System's "Application and Installation Guides using Alpa QFS®-A and QFS®-B Engineered Wood I-Joists" for proper installation procedures and methods.
4. Repetitive member Factor has been applied in accordance with ASTM D5055-98
5. Total load deflection is limited to L/240.
6. When the allowable span is governed by deflection, the composite effect of the floor sheathing has been taken into consideration in accordance with WIJMA guidelines.
8. When the span is underlined, check availability from supplier.

Maximum Floor Spans ASD - Clear Span

ALPA QFS-A SERIES WITH WINDOW

Product Code	Joist Depth (in)	Sheathing Connection	Load Dead/Live (psf)	Subfloor thickness = 3/4 in.							
				Live load deflection limit @ L/360				Live load deflection limit @ L/480			
				12"	16"	19.2"	24"	12"	16"	19.2"	24"
A310E	9 1/2"	Nailed only	10/40	18'-01"	16'-04"	15'-03"	13'-10"	16'-04"	14'-09"	13'-09"	12'-08"
			15/40	18'-01"	16'-04"	15'-03"	12'-07"	16'-04"	14'-09"	13'-09"	12'-07"
			20/40	18'-01"	16'-04"	14'-05"	11'-06"	16'-04"	14'-09"	13'-09"	11'-06"
		Nailed and glued	10/40	19'-05"	17'-09"	16'-08"	13'-10"	17'-07"	16'-00"	15'-01"	13'-10"
			15/40	19'-05"	17'-04"	15'-09"	12'-07"	17'-07"	16'-00"	15'-01"	12'-07"
			20/40	19'-01"	16'-08"	14'-05"	11'-06"	17'-07"	16'-00"	14'-05"	11'-06"
A312E	11 7/8"	Nailed only	10/40	21'-07"	19'-06"	18'-03"	15'-11"	19'-06"	17'-07"	16'-06"	15'-02"
			15/40	21'-07"	19'-04"	17'-08"	14'-05"	19'-06"	17'-07"	16'-06"	14'-05"
			20/40	21'-03"	18'-06"	16'-07"	13'-03"	19'-06"	17'-07"	16'-06"	13'-03"
		Nailed and glued	10/40	23'-01"	20'-03"	18'-06"	15'-11"	20'-10"	19'-00"	17'-11"	15'-11"
			15/40	22'-02"	19'-04"	17'-08"	14'-05"	20'-10"	19'-00"	17'-08"	14'-05"
			20/40	21'-03"	18'-06"	16'-07"	13'-03"	20'-10"	18'-06"	16'-07"	13'-03"
A314	14"	Nailed only	10/40	21'-07"	18'-10"	17'-03"	15'-01"	21'-07"	18'-10"	17'-03"	15'-01"
			15/40	20'-08"	18'-00"	16'-06"	13'-09"	20'-08"	18'-00"	16'-06"	13'-09"
			20/40	19'-10"	17'-03"	15'-09"	12'-07"	19'-10"	17'-03"	15'-09"	12'-07"
		Nailed and glued	10/40	21'-07"	18'-10"	17'-03"	15'-01"	21'-07"	18'-10"	17'-03"	15'-01"
			15/40	20'-08"	18'-00"	16'-06"	13'-09"	20'-08"	18'-00"	16'-06"	13'-09"
			20/40	19'-10"	17'-03"	15'-09"	12'-07"	19'-10"	17'-03"	15'-09"	12'-07"
A314M	14"	Nailed only	10/40	<u>25'-00"</u>	22'-01"	18'-11"	15'-01"	22'-07"	20'-05"	18'-11"	15'-01"
			15/40	24'-03"	20'-08"	17'-02"	13'-09"	22'-07"	20'-05"	17'-02"	13'-09"
			20/40	23'-03"	18'-11"	15'-09"	12'-07"	22'-07"	18'-11"	15'-09"	12'-07"
		Nailed and glued	10/40	<u>25'-05"</u>	22'-01"	18'-11"	15'-01"	<u>24'-01"</u>	21'-11"	18'-11"	15'-01"
			15/40	24'-03"	20'-08"	17'-02"	13'-09"	24'-01"	20'-08"	17'-02"	13'-09"
			20/40	23'-03"	18'-11"	15'-09"	12'-07"	23'-03"	18'-11"	15'-09"	12'-07"

Notes:

1. The spans are determined in accordance with National Design Specification for Wood Construction ANSI/AF&PA NDS-1977.
2. These spans are appropriate for single-span and simple-supported floors.
3. Consult appropriate sections of Alpa Floor System's "Application and Installation Guides using Alpa QFS®-A and QFS®-B Engineered Wood I-Joists" for proper installation procedures and methods.
4. Repetitive member Factor has been applied in accordance with ASTM D5055-98
5. Total load deflection is limited to L/240.
6. When the allowable span is governed by deflection, the composite effect of the floor sheathing has been taken into consideration in accordance with WIJMA guidelines.
8. When the span is underlined, check availability from supplier.

Maximum Floor Spans ASD - Clear Span

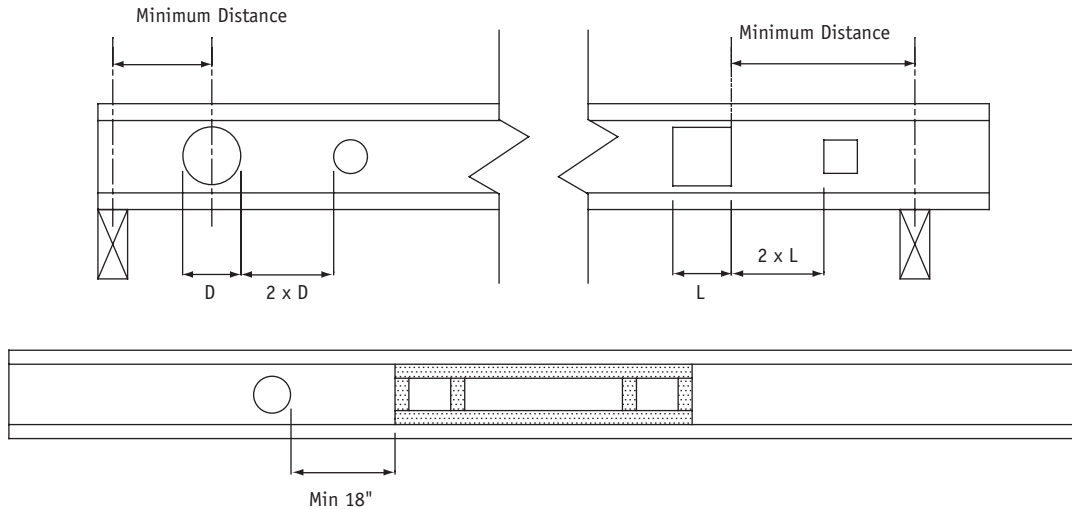
ALPA QFS-B SERIES (WITHOUT WINDOW)

Product Code	Joist Depth (in)	Sheathing Connection	Load Dead/Live (psf)	Subfloor thickness = 5/8 in. or 3/4 in.							
				Live load deflection limit @ L/360				Live load deflection limit @ L/480			
				12"	16"	19.2"	24"	12"	16"	19.2"	24"
B310	9 1/2"	Nailed only	10/40	16'-00"	13'-10"	12'-08"	11'-04"	16'-00"	13'-10"	12'-08"	11'-04"
			15/40	15'-03"	13'-02"	12'-01"	10'-09"	15'-03"	13'-02"	12'-01"	10'-09"
			20/40	14'-07"	12'-08"	11'-06"	10'-04"	14'-07"	12'-08"	11'-06"	10'-04"
		Nailed and glued	10/40	16'-00"	13'-10"	12'-08"	11'-04"	16'-00"	13'-10"	12'-08"	11'-04"
			15/40	15'-03"	13'-02"	12'-01"	10'-09"	15'-03"	13'-02"	12'-01"	10'-09"
			20/40	14'-07"	12'-08"	11'-06"	10'-04"	14'-07"	12'-08"	11'-06"	10'-04"
B312	11 7/8"	Nailed only	10/40	18'-06"	16'-00"	14'-07"	13'-01"	18'-06"	16'-00"	14'-07"	13'-01"
			15/40	17'-08"	15'-03"	13'-11"	12'-05"	17'-08"	15'-03"	13'-11"	12'-05"
			20/40	16'-11"	14'-07"	13'-04"	11'-11"	16'-11"	14'-07"	13'-04"	11'-11"
		Nailed and glued	10/40	18'-06"	16'-00"	14'-07"	13'-01"	18'-06"	16'-00"	14'-07"	13'-01"
			15/40	17'-08"	15'-03"	13'-11"	12'-05"	17'-08"	15'-03"	13'-11"	12'-05"
			20/40	16'-11"	14'-07"	13'-04"	11'-11"	16'-11"	14'-07"	13'-04"	11'-11"
B314	14"	Nailed only	10/40	20'-06"	17'-09"	16'-02"	14'-05"	20'-06"	17'-09"	16'-02"	14'-05"
			15/40	19'-06"	16'-11"	15'-05"	13'-09"	19'-06"	16'-11"	15'-05"	13'-09"
			20/40	18'-08"	16'-02"	14'-09"	12'-07"	18'-08"	16'-02"	14'-09"	12'-07"
		Nailed and glued	10/40	20'-06"	17'-09"	16'-02"	14'-05"	20'-06"	17'-09"	16'-02"	14'-05"
			15/40	19'-06"	16'-11"	15'-05"	13'-09"	19'-06"	16'-11"	15'-05"	13'-09"
			20/40	18'-08"	16'-02"	14'-09"	12'-07"	18'-08"	16'-02"	14'-09"	12'-07"

Notes:

1. The spans are determined in accordance with National Design Specification for Wood Construction ANSI/AF&PA NDS-1977.
2. These spans are appropriate for single-span and simple-supported floors.
3. Consult appropriate sections of Alpa Floor System's "Application and Installation Guides using Alpa QFS®-A and QFS®-B Engineered Wood I-Joists" for proper installation procedures and methods.
5. Repetitive Member Factor has been applied in accordance with ASTM D5055-98
6. Total load deflection ts limited to L/240.
7. When the allowable span is governed by deflection, the composite effect of the floor sheathing has been taken into consideration in accordance with WIJMA guidelines.

Web Holes



NOTES:

SINGLE ROUND HOLE:

1. The maximum hole diameter "D", referred in the above table shall be permitted to be located at a minimum distance "d", measured from the centerline of support to the centerline of the hole.
2. The distance between hole centerline and edge of the opening shall not be less than 18 inches.

MULTIPLE HOLES:

1. The minimum distance between any two holes, edge-to-edge, shall be $2 \times D^*$, where D^* being the diameter of the larger round hole.
2. When multiple web openings are grouped, the holes shall be arranged and placed to comply with the requirements for a single round or rectangular opening.

SQUARE AND RECTANGULAR HOLES:

1. The maximum square hole shall be 0.75 times the maximum round hole diameter (D) in the above table. The hole shall be a minimum dimension from the centerline of the support to the centerline of the hole. For a given square hole dimension, L, the equivalent round hole size shall be 1.33 times L which shall be less than the maximum round hole diameter (D).
2. The maximum height or length of a rectangular hole shall be no more than 0.75 times the maximum round hole diameter (D).
3. The minimum distance between any two holes shall be two times the larger dimension: $2 \times L$.

*THESE DRAWINGS ARE FOR ILLUSTRATION PURPOSES ONLY. THEY ARE NOT INTENDED FOR USE AS CONSTRUCTION DOCUMENTS FOR THE PURPOSE OF DESIGN, FABRICATION OR ERECTION.

Allowable Hole Location

Maximum Circular Hole Diameter "D" (in.)	Minimum Distance "d" (ft-in.) from Centerline of Support to Centerline of Hole								
	Span Length (ft)								
	8	10	12	14	16	18	20	22	24
JOIST DEPTH 9-1/2 IN.									
2	1-0	1-0	1-0	1-0	1-0	1-9	2-9	3-9	4-9
3	1-0	1-0	1-0	1-0	1-0	1-9	2-9	3-9	4-9
4	1-0	1-0	1-0	1-0	1-11	2-11	3-11	4-11	5-11
5	1-9	1-9	1-9	1-9	1-11	2-11	3-11	4-11	5-11
6	2-0	2-0	2-0	2-0	2-0	2-11	3-11	4-11	5-11
JOIST DEPTH 11-7/8 IN.									
2	1-0	1-0	1-0	1-0	1-0	1-0	1-8	2-8	3-8
3	1-0	1-0	1-0	1-0	1-0	1-0	1-8	2-8	3-8
4	1-0	1-0	1-0	1-0	1-0	1-1	2-1	3-1	4-1
5	1-0	1-0	1-0	1-0	1-0	1-1	2-1	3-1	4-1
6	2-0	2-0	2-0	2-0	3-0	4-0	5-0	6-0	7-0
7	2-0	2-0	2-0	2-0	3-0	4-0	5-0	6-0	7-0
8	2-0	2-0	2-0	2-0	3-0	4-0	5-0	6-0	7-0
JOIST DEPTH 14 IN.									
2	1-0	1-0	1-0	1-0	1-0	1-0	1-2	2-2	3-2
3	1-0	1-0	1-0	1-0	1-0	1-0	1-2	2-2	3-2
4	1-0	1-0	1-0	1-0	1-0	1-0	1-2	2-2	3-2
5	1-0	1-0	1-0	1-0	1-0	1-0	1-6	2-6	3-6
6	2-0	2-0	2-0	2-0	2-0	2-0	2-0	2-6	3-6
7	2-0	2-0	2-0	2-0	2-8	3-8	4-8	5-8	6-8
8	2-0	2-0	2-0	2-0	2-8	3-8	4-8	5-8	6-8
9	2-0	2-0	2-0	2-0	2-8	3-8	4-8	5-8	6-8
10	2-0	2-0	2-0	2-0	2-8	3-8	4-8	5-8	6-8

SI: 1 in. = 25.4 mm, 1 ft = 304.8 mm

Testimonials

"As a framing contractor, my experience in using the AlpaJoist has been very good. It is a very framer-friendly joist. Its built-in window that allows for mechanicals to be concealed within the joist system eliminates boxes for our back framers. It is a very positive evolution in joist technology.

Well done Alpa."

Frank DiBenedetto

PRESIDENT,
SUNGATE CONTRACTING INC.
(800 to 1,000 homes annually)
Stoney Creek, Ontario

"The AlpaJoist is quiet and it is strong. Our customers love it, and I like happy customers. Great product. We have used the new flooring system in our last three subdivisions and have not had any problems or complaints with it.

We are satisfied with the project and the results."

Ammon Baruch

VICE PRESIDENT, SITE OPERATIONS
PARADISE HOMES
(500 homes annually)
Markham, Ontario



The AlpaJoist™ rolls through the efficient production line

Lifetime Product Warranty

Alpa Floor System Inc. Alpa warrants that its QFS Quiet Floor System™ product will be free from defects in materials and workmanship for the lifetime of the structure in which the QFS Quiet Floor System™ is installed.

REMEDY

In the event of any product claim under this Lifetime Product Warranty, Alpa, in its sole and absolute discretion, will do one of the following:

- 1) *Repair any product which Alpa determines to be defective in material or workmanship; or*
- 2) *Replace at Alpa's cost with a like quantity of non-defective product; or*
- 3) *Refund the purchase price.*

Every claim under this Lifetime Product Warranty shall be deemed waived unless in writing and received by Alpa within 30 days after the defect to which each claim relates is discovered, or should have been discovered, and Alpa is given the opportunity to inspect the claim once notified.

LIMITATIONS

This Lifetime Product Warranty does not cover the following:

- QFS Quiet Floor System™ products that have not been paid for in full.
- Natural defects in wood, provided such wood meets NLGA grading rules.
- Problems and defects due to improper installation, abuse, negligence, improper use, careless handling, improper storage or unauthorized modification.
- Acts of God.
- Accidents.
- Subjecting QFS Quiet Floor System™ products to conditions outside its design limitations.

LIMITATION OF LIABILITY

Alpa shall not be liable for any incidental, consequential or special damages whether based on negligence, breach of warranty, strict liability, or any other theory.

MODIFICATION OR TERMINATION OF WARRANTY

No waiver or modification of these terms shall be binding upon Alpa unless made in writing and signed by a duly authorized representative of Alpa. Alpa disclaims all other representations and warranties of any kind, express or implied, in fact or in law, including, without limitation, the implied warranty of merchantability and the

implied warranty of fitness for a particular purpose. If any of these provisions are determined to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remainder of these terms shall be unaffected.

GOVERNING LAW

This agreement is governed by, and interpreted in accordance with, the laws of the province of Ontario and the federal laws of Canada applicable thereto.

DOMESTIC SALE OF GOODS

The parties agree that Ontario Sale of Goods Laws shall apply to this order and not the International Sale of Goods Act RSO 1990, c. 1-10.



Now In Your Market

AlpaJoist™ from Alpa Floor System Inc., part of the Alpa Lumber Group



Alpa Lumber Group over 50 years strong

Alpa Lumber Group has been providing the United States and Canada with superior building products for over 50 years. The Alpa Lumber Group is renowned for creating innovative construction components. The organization has stayed one step ahead of its competition by anticipating the needs of the building community and meeting them – even before a request is made.

PRODUCT EXCELLENCE: KEY TO SUCCESS

Product excellence is another important contributor to the Alpa Lumber Group's success. Alpa Floor System Inc.'s manufacturing facility for the **QFS Quiet Floor System™** features state-of-the-art machinery and is closely monitored by an on-site team of quality control personnel, as well as an accredited third-party inspection agency. This ensures the highest quality joist possible.

SUPERIOR SERVICE: ANOTHER HALLMARK

Superior service ensures Alpa Lumber Group's customers are well satisfied. Buyers of the AlphaJoist™ can be assured that they are backed up by a

technical support group that includes experienced engineers and designers. They will provide services to builders and specifiers to ensure the creation of properly structured and economical roof and floor systems.

NO MIDDLEMEN: IMPROVED COMMUNICATIONS

Because Alpa Floor System Inc. produces the joists and sells through the Alpa Lumber Group, buyers have easy access to the manufacturer with no middlemen. Communication is more effective, problems can be addressed quickly and lead times are shortened.

Buyers of the AlphaJoist™ know that the company behind this product is strong, stable and dedicated to superior product and service.

For more information on the AlphaJoist™, call **(905) 456-9112**.

Alpa Floor System Inc.

101 Glidden Rd.
Brampton, Ontario
Canada
L6T 3W6

The AlphaJoist™ is part of the **QFS Quiet Floor System™**.

Joist™

QUIET FLOOR SYSTEM



The only I-Joist engineered with the exclusive, patented, built-in window for running plumbing, electrical and ductwork. Cross-bridging and bulkheads are also eliminated, saving time and money!