



TRIFORCE®

OPEN JOIST

Barrette Structural Distribution Inc. manufactures **TRIFORCE®**, an engineered floor joist that features a triangulated configuration for strength with an open-web that provides easy installation of mechanical, plumbing and electrical. **TRIFORCE®** made-to-stock open joist is constructed entirely of wood and assembled using finger-joint technology.

TRIFORCE® open joist is trimmable up to 2 feet at one end to accommodate dimension changes and out-of-square foundations. Individually tested and produced in a state-of-the-art robotic manufacturing facility, **TRIFORCE®** open joist has surpassed industry standards by establishing a new level of excellence in the engineering of floor systems, while optimizing the use of lumber in its components. The **TRIFORCE®** open joist provides... *Peace of mind underfoot!*™



Uniform ES

Accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC)



See the TRIFORCE® evaluation report at:
www.iapmoes.org/EvaluationReports



Mid Span Stongback Bridging Table

Strongbacks contribute to floor system performance but are not required by ICC IRC/IBC code.

Depth	11 7/8"				14"				16"			
	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.	12" o.c.	16" o.c.	19.2" o.c.	24" o.c.
8'-0"	None	None	None	None	None	None	None	None	None	None	None	None
10'-0"	None	None	None	None	None	None	None	None	None	None	None	None
12'-0"	None	None	None	None	None	None	None	None	None	None	None	None
14'-0"	None	None	None	None	None	None	None	None	None	None	None	None
16'-0"	None	1-2x4	1-2x4	1-2x4	None	None	None	None	None	None	None	None
18'-0"	1-2x4	1-2x6	1-2x6	1-2x6	None	1-2x6	1-2x6	1-2x6	None	None	1-2x6	1-2x6
20'-0"	2-2x4	1-2x6	2-2x6	2-2x6	1-2x6	1-2x6	2-2x6	2-2x6	1-2x6	1-2x6	1-2x6	1-2x6
22'-0"	1-2x6	2-2x6	2-2x6	2-2x6	1-2x6	1-2x6	2-2x6	2-2x6	None	1-2x6	1-2x6	1-2x6
24'-0"					1-2x6	2-2x6	2-2x6	2-2x6	1-2x6	1-2x6	2-2x6	2-2x6
26'-0"					2-2x6	2-2x6	2-2x6	---	1-2x6	2-2x6	2-2x6	2-2x6
28'-0"									2-2x6	2-2x6	2-2x6	2-2x6
30'-0"									2-2x6	2-2x6	2-2x6	---

Maximum Allowable Live Loads for Residential Application

Dead loads 15 psf, L/480, Glued and Nailed												
Depth	11 7/8"				14"				16"			
	Live Load (psf)				Live Load (psf)				Live Load (psf)			
Length	12"	16"	19.2"	24"	12"	16"	19.2"	24"	12"	16"	19.2"	24"
8'-0"	315	232	191	150	319	236	194	152	325	240	197	155
10'-0"	233	171	140	109	253	186	152	119	257	189	155	121
12'-0"	157	114	92	71	191	139	113	88	211	155	126	98
14'-0"	108	79	63	48	136	98	79	60	156	113	92	70
16'-0"	75	57	45	---	100	71	57	42	116	83	66	50
18'-0"	58	44	---	---	81	62	53	40	107	81	65	49
20'-0"	58	44	---	---	61	47	---	---	80	62	49	---
22'-0"	52	---	---	---	63	48	41	---	96	73	62	46
24'-0"					57	44	---	---	76	58	49	40
26'-0"					46	---	---	---	61	46	---	---
28'-0"									54	41	---	---
30'-0"									44	---	---	---

Notes:

- The indicated loads are based on simple span joist, measured center to center of bearings.
- Minimum end bearing length is 1½", **bold values require web stiffeners at OSB end panel.**
- Live Load deflection is limited to **L/480** and Total Load deflection is limited to L/240.
- The indicated load are based on the Allowable Stress Design method as per NDS, ICC IBC/IRC code.
- The considered subfloor is a "20 oc APA rated panel" for joist's spacing of 12", 16" and 19.2" o.c. and is a "24 oc APA rated panel" for joist's spacing of 24" o.c. The subfloor must be glued as per APA Specification AFG-01 or ASTM D3498 and nailed as per NDS, ICC IBC/IRC code.
- Refer to appropriate sections of the Specifier Guide for installation guidelines and construction details.

Maximum Allowable Spans for Residential Application

Glued And Nailed, L/480

Depth	Spacing		LL=40 psf DL=15 psf			
			12"	16"	19.2"	24"
	Subfloor ⁽⁷⁾		19/32"			
	Series		Maximum Floor span o.c.			
11 7/8"	OJ314	3x2	16'-0"	16'-0"	16'-0"	14'-10"
	OJ315	3x2	18'-0"	18'-0"	17'-6"	16'-4"
	OJ415	4x2	20'-0"	20'-0"	19'-5"	18'-2"
	OJ418	4x2	22'-0"	21'-9"	20'-6"	19'-1"
14"	OJ314	3x2	16'-0"	16'-0"	16'-0"	16'-0"
	OJ315	3x2	20'-0"	20'-0"	19'-10"	18'-0"
	OJ415	4x2	22'-0"	22'-0"	22'-0"	20'-7"
	OJ418	4x2	26'-0"	24'-9"	23'-3"	20'-0"
16"	OJ314	3x2	16'-0"	16'-0"	16'-0"	16'-0"
	OJ315	3x2	20'-0"	20'-0"	20'-0"	19'-3"
	OJ418	4x2	26'-0"	26'-0"	25'-8"	24'-0"
	OJ420	4x2	30'-0"	28'-2"	26'-6"	----

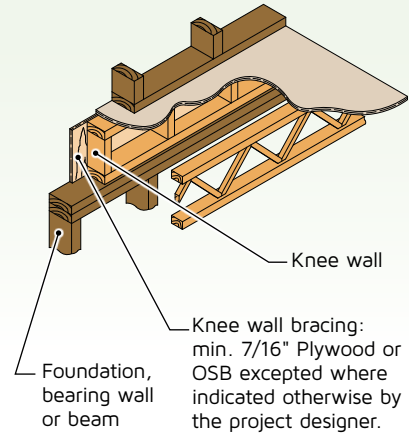
Notes:

- The indicated spans are based on simple span joists.
- Minimum end bearing length is 1½", **bold spans require web stiffeners at OSB end panel.**
- Maximum spans are measured **centerline to centerline** of bearing and are based on uniformly loaded joists.
- Total Load deflection is limited to L/240.
- Live Load deflection is limited to **L/480**.
- The indicated spans are based on the Allowable Stress Design method as per NDS, ICC IBC/IRC code.
- The considered subfloor is a "20 oc APA rated panel" for joist's spacing of 12", 16" and 19.2" o.c. and is a "24 oc APA rated panel" for joist's spacing of 24" o.c. The subfloor must be glued as per APA Specification AFG-01 or ASTM D3498 and nailed as per NDS, ICC IBC/IRC code.
- Refer to appropriate sections of the Specifier Guide for installation guidelines and construction details.

Typical Details

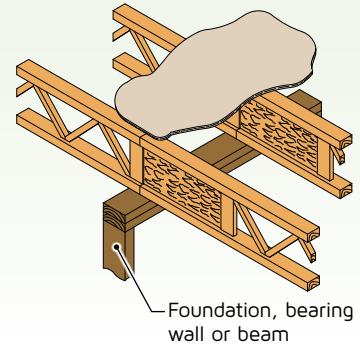
Detail 6M

Knee Wall



Detail 3P1

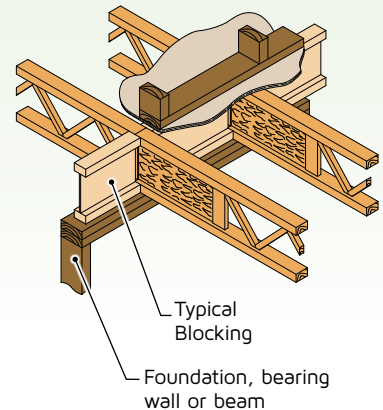
End to End Joist



Blocking not required between joists for detached one- and two-family dwellings, assigned to Seismic Design Category A, B or C or located where the mapped $S_s < 0.4g$

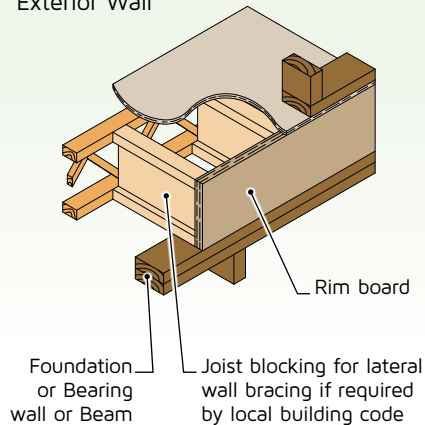
Detail 3P1B

End to End Joist with Bearing Wall Above



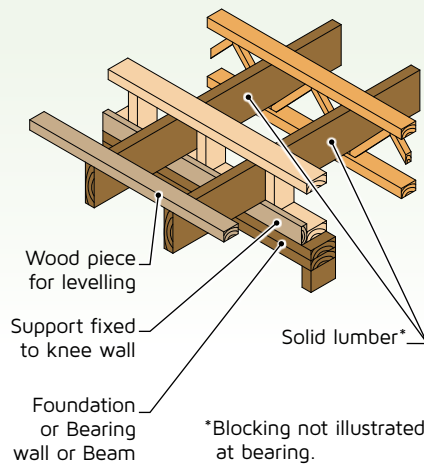
Detail 6R1B

Rim Board and Blocking at Exterior Wall



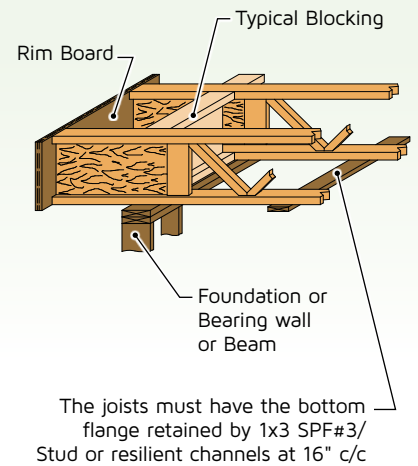
Detail 13M

Cantilever Perpendicular to Open Joist



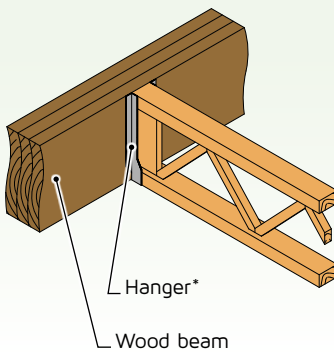
Detail 8P

Cantilevered Joist



Detail 4

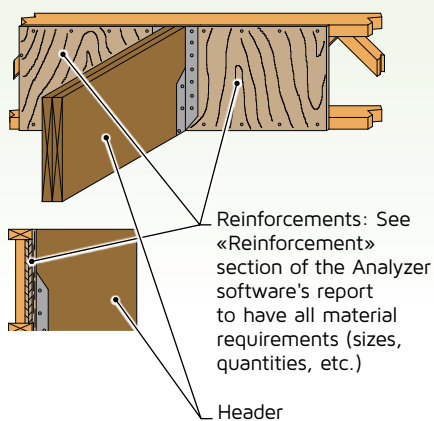
Wood Beam Connections with Hanger



* top mount or face mount hangers

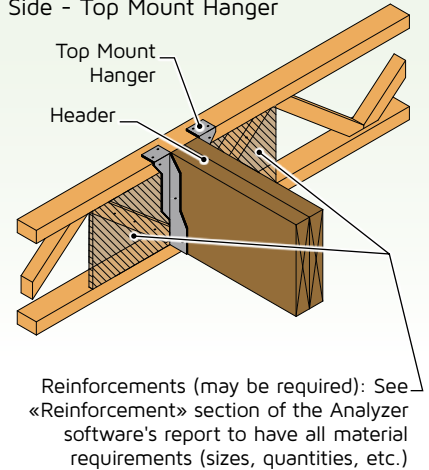
Detail 10F

Reinforcement for a Concentrated Side Load - Face Mount Hanger



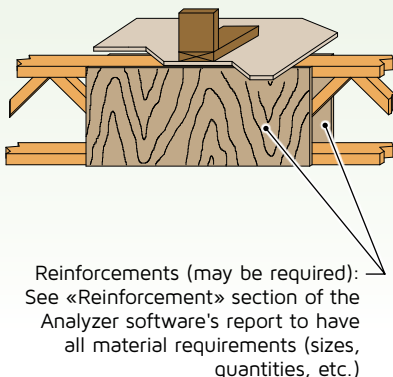
Detail 10T

Reinforcement for a Concentrated Side - Top Mount Hanger



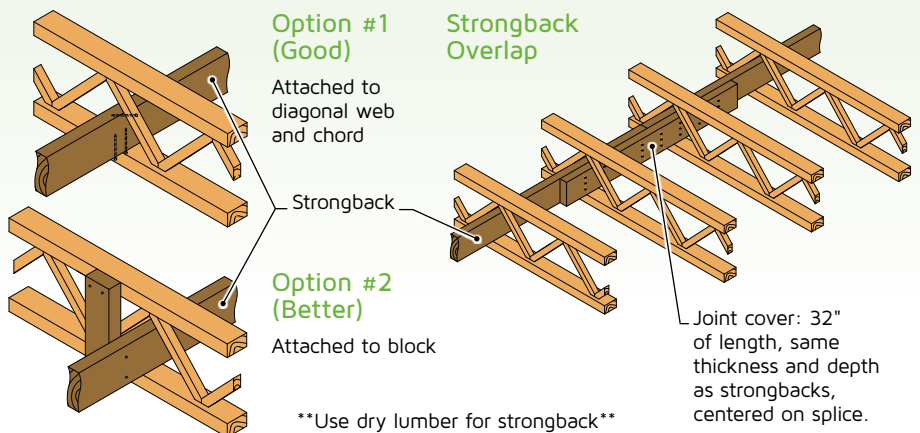
Detail 11

Reinforcement for a Concentrated Top Load



Detail 5

Use gun nails 0.122" x 3.25" or 3" screws to secure strongback at mid span of joist. If two strongbacks are specified, install the second one adjacent to the next closest diagonal web bay.

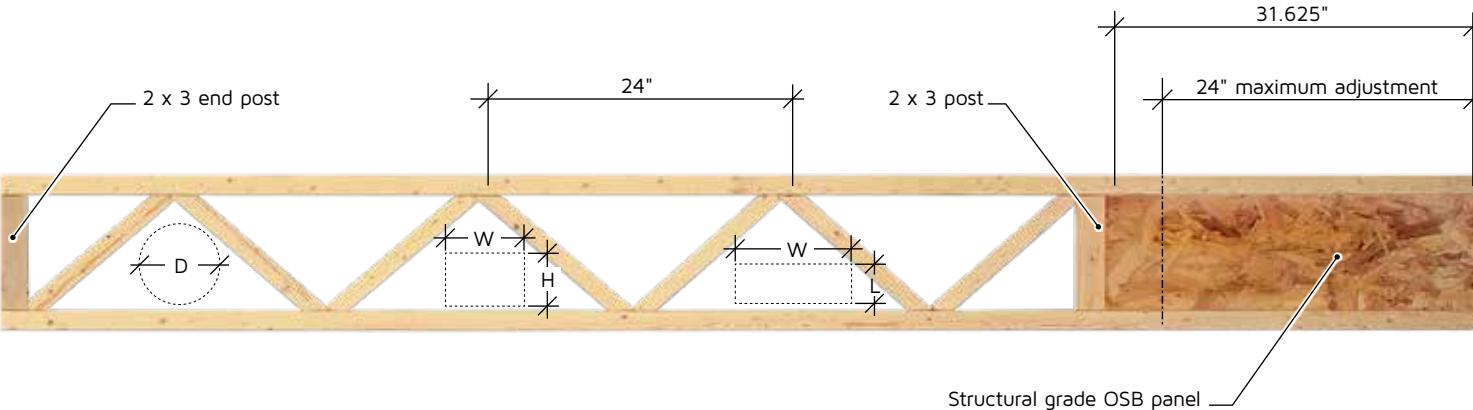


Available Joist Sizes

TRIFORCE® open joist is produced in several depths and lengths to fulfill floor framing needs. Lengths are offered in two foot increments due to their 24" trimmability.

Depth	Series	Weight lbs/ft	Stock Lengths (feet)											
			8	10	12	14	16	18	20	22	24	26	28	30
11 7/8"	OJ314	2.80	✓	✓	✓	✓	✓							
	OJ315	2.80						✓						
	OJ415	3.35							✓					
	OJ418	3.35						S	S	✓				
14"	OJ314	2.85	✓	✓	✓	✓	✓							
	OJ315	2.85						✓	✓					
	OJ415	3.45								✓				
	OJ418	3.45							S		✓	✓		
16"	OJ314	2.95	✓	✓	✓	✓	✓							
	OJ315	2.95						✓	✓					
	OJ418	3.55							S	✓	✓	✓		
	OJ420	3.55											✓	✓

✓ = In stock
S = Limited inventory. Please contact your representative to determine quantities.



Mechanical Clearances

Maximum Size of Pipes, Ducts and Cable Trays Through Diagonal Web Members			
Depth	Round D	Square W x H	Rectangular W x L
11 7/8"	7 1/4"	5 3/4" x 5 3/4"	3" x 13"
14"	8 1/2"	6 1/2" x 6 1/2"	3" x 14", 6" X 8"
16"	9 1/2"	7 1/2" x 7 1/2"	3" x 15"

