

DESIGN & SPECIFICATION GUIDE

2007



JOIST-IN-TIME™

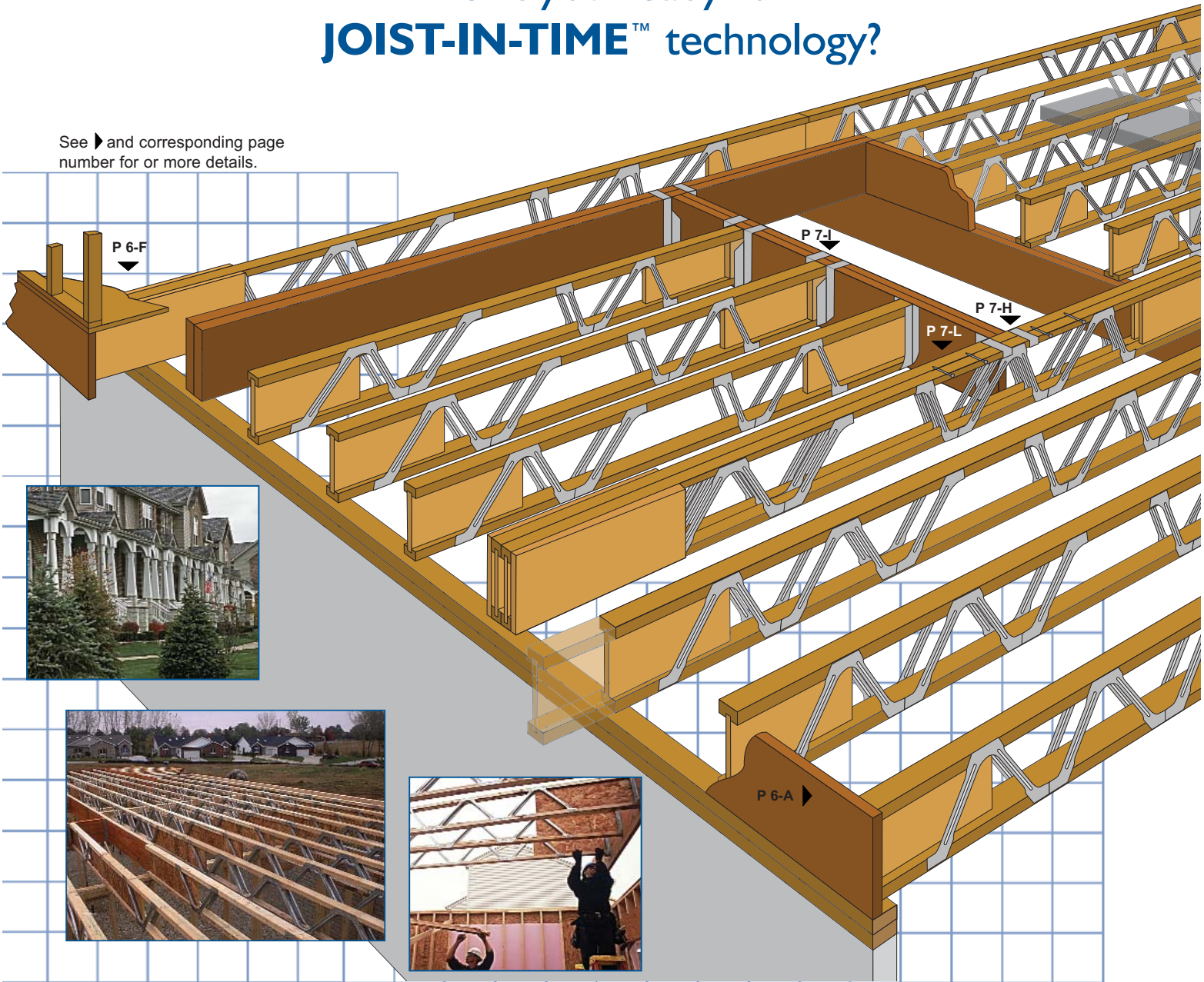
ENGINEERED WOOD SYSTEMS

U.S. Pat. 5,867,962
Other Patents Pending

Simplicity & flexibility to do what you need,
where & when you need it.

Aren't you ready for
JOIST-IN-TIME™ technology?

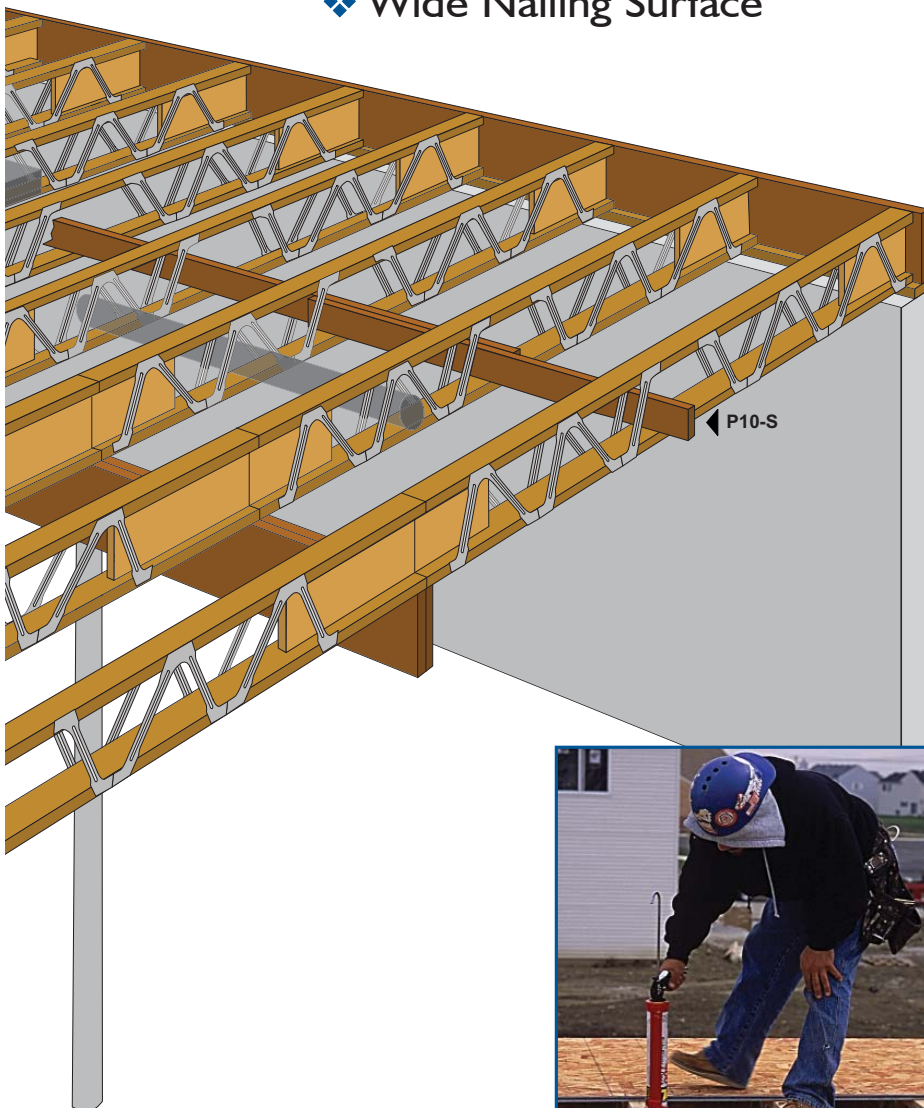
See ▶ and corresponding page
number for or more details.



STRENGTH ❖ ECONOMY ❖ EFFICIENCY ❖ FLEXIBILITY ❖ AVAILABILITY



- ❖ 12" Trimmable Ends
- ❖ Open Web Floor Design
- ❖ Engineered Design
- ❖ Wide Nailing Surface



Features & Benefits

- ❖ **A variety of floor applications** are possible with depths available in 9.25", 11.25", 14" and 16".
- ❖ **Trimmable Ends** allow field cutting up to 12" on both ends to suit on-site needs.
- ❖ **Non-combustible High-strength SpaceJoist Webs**
- ❖ **Wide Nailing Surface**
- ❖ **Rim Board** for shear connection, lateral support, and convenient nailing surface.
- ❖ **Continuous Bridging** to maximize load sharing with adjacent trusses for reduced vibration.
- ❖ **Large Open Web Design** allows easy passage of duct work, plumbing and electrical wiring within the floor system.
- ❖ **Design Flexibility**
- ❖ U.S. Pat. 5,867,962 Other Patents Pending



BUILD IT FAST... BUILD IT TO LAST... BUILD IT FOR LESS!

To maintain a competitive edge these days, you have to build it fast, build it to last and build it for less. That's why designers, specifiers and lumber dealers are turning to SpaceJoist TE™ for solutions to these demands and more.

SpaceJoist TE offers today's builder a truly unique truss system that combines the best features of a wood I-joist and open web floor truss to deliver a quality product for maximum efficiency on the job site.

Build it Fast! Meet the special demands of wiring, plumbing and HVAC systems for residential and light construction applications with TE's patented open web configuration.

Build it to Last! SpaceJoist TE can be field-trimmed up to 12" on each end to offer on-site flexibility and accuracy.

Build it for Less! SpaceJoist TE's innovative lightweight open web design creates on-site savings and labor reductions that translate into profit for your bottom line.

CONTENTS

INTRODUCTION

Design Guide Detail	2-3
About SpaceJoist TE & Floor Performance Facts ..	4

GENERAL NOTES

FLOOR APPLICATIONS

Floor Details	6-7
Residential Floor Spans & Max. Allowable Floor Loads	8

GENERAL NOTES

Warnings and Instructions	
Weights of Typical Construction Materials, Strongback Bracing, Rafter Cut Detail, These Conditions Not Permitted & Cantilever Details	9-11

ROOF APPLICATIONS

Roof Details & Bevel Cut Warning	12
Roof Spans	13
Slope Factor Table & Roof Span Notes	14

FRAMING CONNECTORS

RELATED DESIGN INFORMATION

Fire Assemblies Summary	
Sound Test Summary	16
Truss Characteristics & Maximum Dimensions ..	17
Typical Rim Board Information	18

INTELLIGENT BUILDING SOLUTIONS



TO OUR USERS

The SpaceJoist TE™ Design & Specification Guide is intended for use by architects, engineers and design professionals responsible for the specification of structural components in building projects. This manual also provides useful information to lumber suppliers and building contractors and serves as a reference guide for building code officials. The loading tables included in this manual are limited to common loading conditions for typical construction; however, many other loading conditions are possible. SpaceJoist TE users are cautioned to fully investigate all loading conditions to which specific trusses may be subjected. Contact your SpaceJoist TE

representative with any questions. The information contained herein is valid only for the loads and conditions stipulated and applies solely to construction utilizing the SpaceJoist TE product.

Every effort has been made to ensure that the information in this manual is accurate. It remains the responsibility of the manual's user, however, to validate its adequacy for the particular situation in which the product is being utilized. SpaceJoist TE and the holders of trade names referenced in this manual expressly disclaim any responsibility arising from the improper use of the information in this manual.

FLOOR PERFORMANCE FACTS

The technical information in this manual has been developed based on state-of-the-art engineering analysis and on commonly accepted guidelines contained in major building codes utilized throughout the U.S. However, in addition to the structural integrity of a floor system, the perception of the floor system's performance is an important consideration. Since this is a subjective matter, what may be judged as a "good" floor by one person could be unacceptable to someone else. Knowledge of the client's expectations is an important factor in floor design.

To produce a stiffer floor system, be mindful of the following principles.

- ❖ For a given span and loading, deeper joists exhibit less deflection.
- ❖ Reducing the spacing between trusses reduces truss deflection.
- ❖ Increasing the floor decking thickness improves floor performance.
- ❖ Use of proper adhesives between decking and joists produces a stiffer floor and is an excellent weapon against floor squeaks.
- ❖ Proper installation of strongback bracing reduces localized floor deflection in areas of concentrated load by providing for load sharing between joists.
- ❖ Correct installation of framing connectors is critical to proper floor system performance.
- ❖ Proper installation of the floor system's components helps prevent problems, reduces expensive call backs, and promotes good will.
- ❖ Specification of a floor assembly that exceeds minimum deflection requirements yields a better performing floor system.



MINIMUM BEARING REQUIREMENTS

- ❖ 1-3/4" minimum bearing length is required at SpaceJoist TE ends.
- ❖ Reinforcement, or closure refers to 3/4" APA rated sheathing or other 3/4" exterior grade 48/24 span rated sheathing that is cut to match the full depth of the SpaceJoist TE.
- ❖ Rim boards and cantilever reinforcement must bear fully on the bearing wall.

NAILING REQUIREMENTS

- ❖ If nailing SpaceJoist TE at bearing, use two (2) 8d nails (1 each side) placed a minimum of 1-1/2" from end of joist.
- ❖ Toe-nail rim board to bearing plate with 8d (box or common) at 6" O.C. per APA specifications. When used for shear transfer, nail to bearing plate as specified by the building designer.
- ❖ Nail rim board or closure to SpaceJoist TE with two (2) 8d nails.
- ❖ Attach squash blocks (2x4 minimum) per DETAIL B and DETAIL D to top chord and bottom chord with two (2) 8d nails.

DECKING

- ❖ For the best floor performance of SpaceJoist TE, use a minimum of 3/4" T&G APA rated sheathing, glued & screwed or glued & nailed in accordance with APA and local building code specifications.

RIM BOARD AND BLOCKING

- ❖ For single-story applications and second story applications, refer to DETAIL A.
- ❖ For main floor rim of two-story application refer to DETAIL A.
- ❖ Details provide 4,400 plf vertical load transfer for each 1-1/8" rim board. Refer to page 18 for other rim board load transfer information.
- ❖ Details in this manual are the same as those represented on the SpaceJoist TE installation poster.

BRACING

- ❖ Strongback bracing, as shown in DETAIL S on page 10, is required in accordance with ANSI/TPI 1-2002, Section 7.5.2.4 and BCSI 1-03. Strongback bracing minimizes vibration and localized deflection in the floor system.

WEB STIFFENER REQUIREMENTS

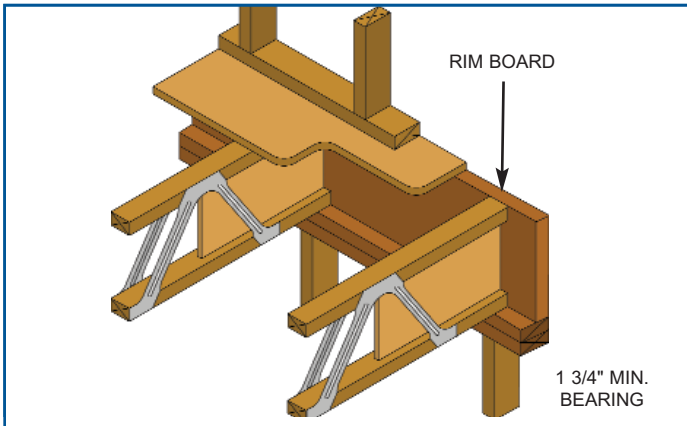
- ❖ Web stiffeners are required if the sides of the hanger do not laterally support the SpaceJoist TE top flange.

RESIDENTIAL FLOOR SPAN TABLES**RESIDENTIAL FLOOR SPAN TABLES FOUND ON PAGE 8.**

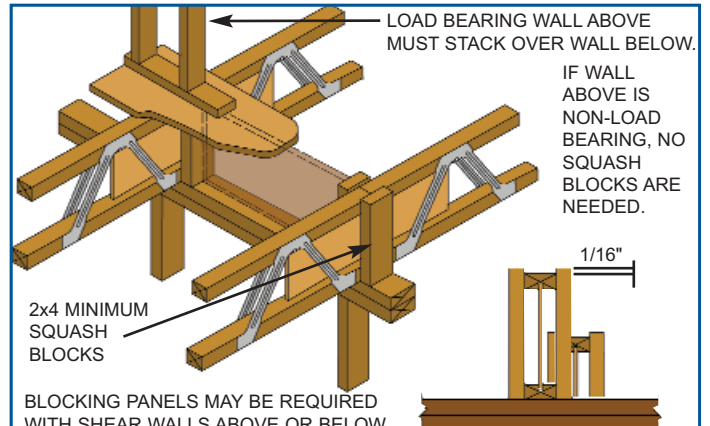
- ❖ Up to 12" may be field-trimmed from each end of the SpaceJoist TE truss. Contact your SpaceJoist TE representative or Engineering Department prior to any additional trimming.
- ❖ Span charts reflect the benefit of composite action afforded by a glued-nailed or glued-screwed connection of the sheathing to the top chord of the truss. Consult your SpaceJoist TE representative for appropriate spans if a nailed-only or screwed-only connection is to be utilized.
- ❖ Span dimensions are out-to-out at bearing supports.
- ❖ Minimum required bearing length is 1-3/4".
- ❖ Span charts are for the uniformly loaded conditions specified in the heading of each chart.
- ❖ For SpaceJoist TE trusses supporting concentrated (point) loads, cantilevered end conditions, or other special loading conditions, contact your TE representative.
- ❖ Some spans may require top chord supports and/or web stiffeners. Contact SpaceJoist TE engineering for required reinforcements.
- ❖ **Span charts for additional loadings are available from your SpaceJoist TE representative.**



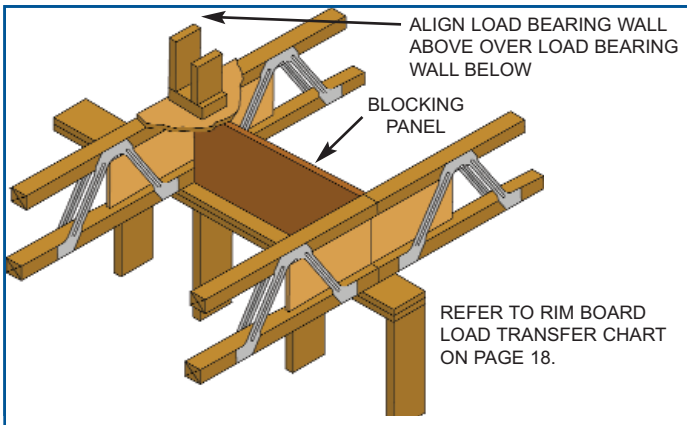
FLOOR APPLICATIONS



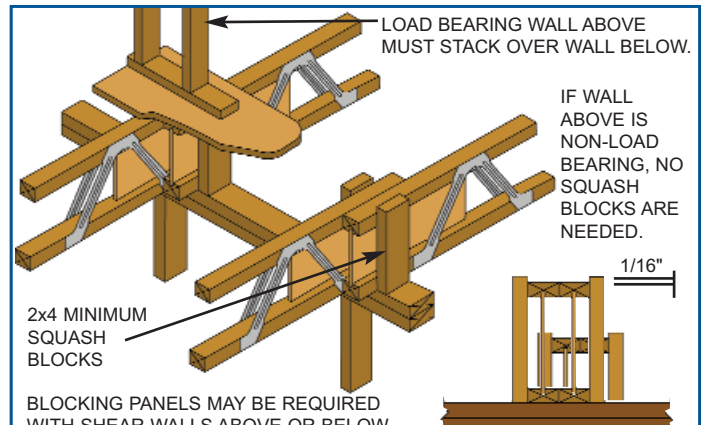
End Bearing Transfer - Detail A



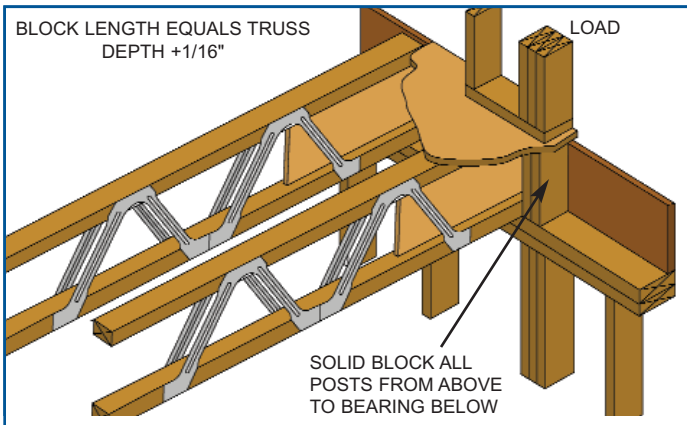
Interior Bearing with Squash Blocks - Detail B



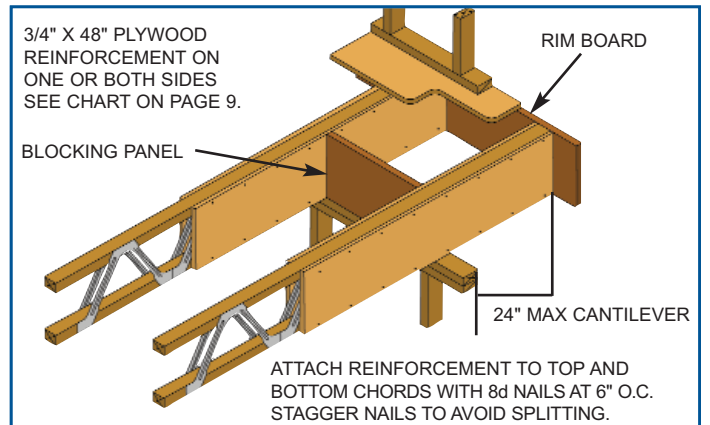
Interior Bearing with Blocking Panel - Detail C



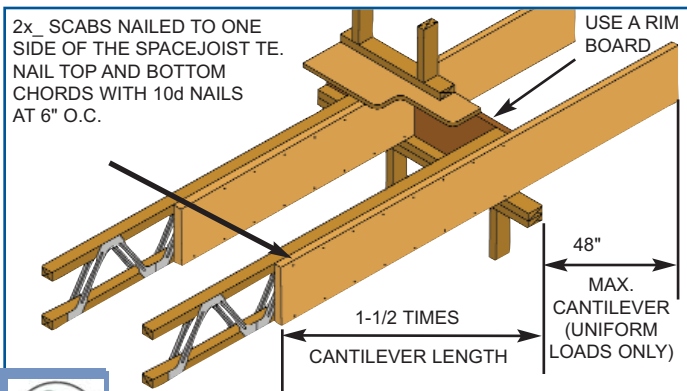
Overlap - Detail D



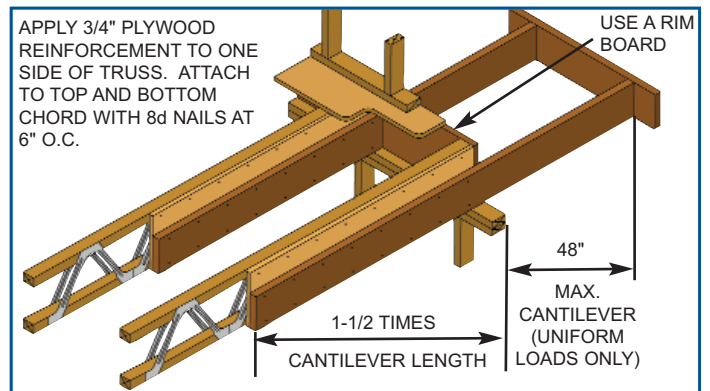
Load Transfer - Detail E



Load Bearing Cantilever - Detail F

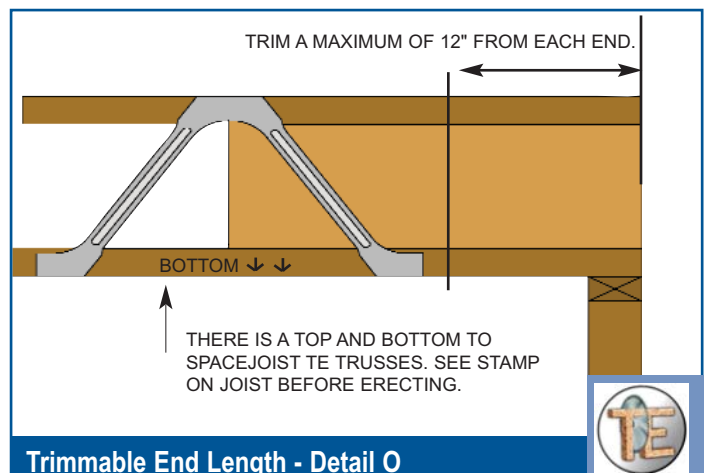
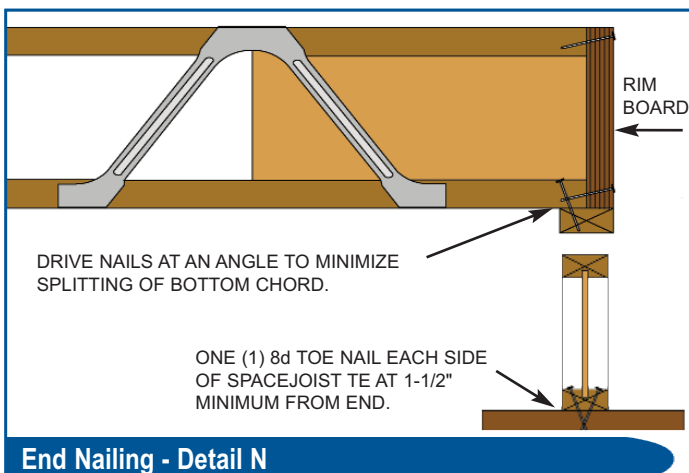
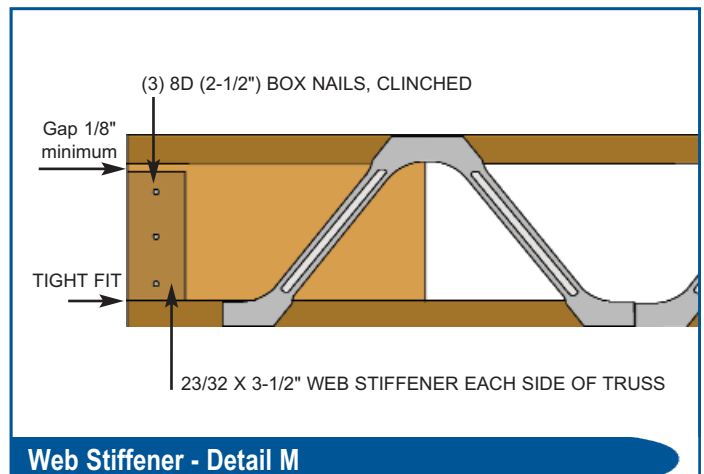
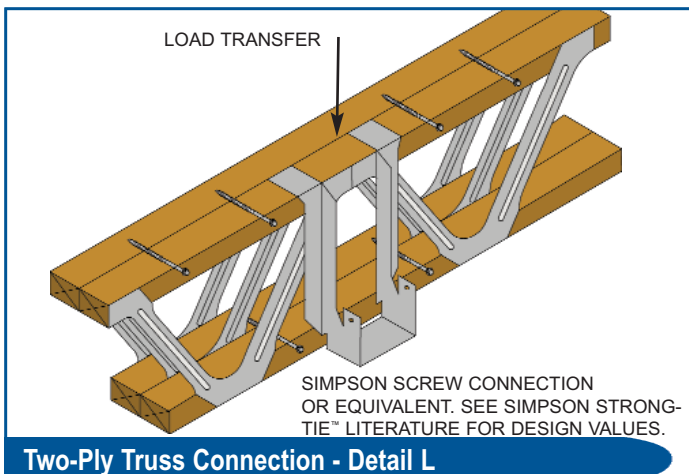
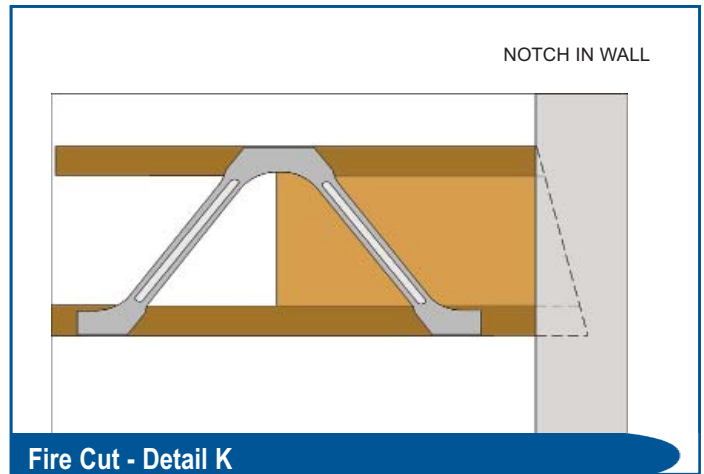
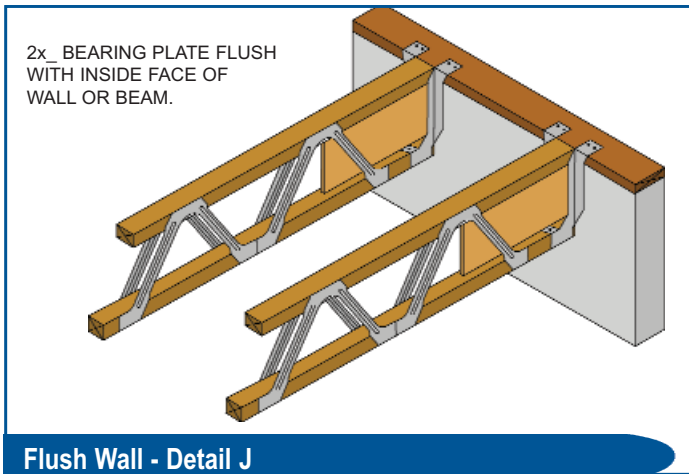
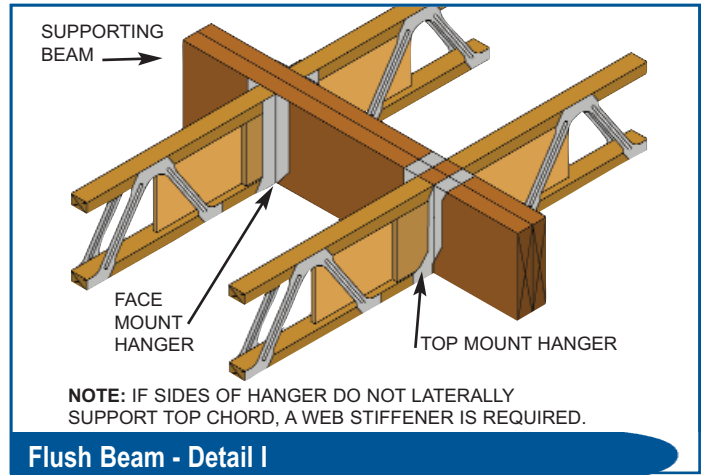
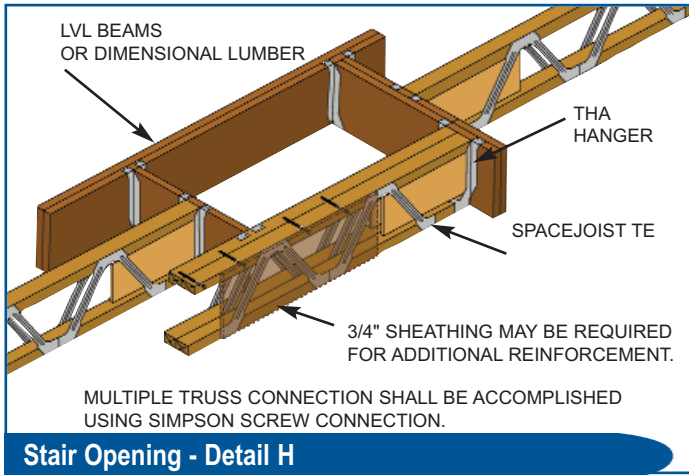


Non-Load Bearing Cantilever Using 2x_ - Detail G-1



Drop Balcony with Cantilever - Detail G-2





FLOOR APPLICATIONS

SPACEJOIST TE RESIDENTIAL FLOOR SPANS

320 SERIES	Maximum Spans: 40-10-5 • 320 SERIES Inverted Truss Designs • M.S.R. S-P-F CAN					
	DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9 1/4"	L/480		14'-3"	14'-10"	16'-1"	17'-9"
	L/360		15'-8"	16'-7"	17'-9"	18'-0"
11 1/4"	L/480		16'-10"	18'-3"	19'-2"	21'-2"
	L/360		17'-9"	19'-11"	21'-2"	22'-0"
14"	L/480		20'-1"	21'-5"	22'-9"	24'-0"
	L/360		20'-1"	22'-7"	24'-0"	24'-0"
16"	L/480		21'-9"	24'-2"	25'-8"	28'-0"
	L/360		21'-9"	24'-5"	26'-8"	28'-0"

420 SERIES	Maximum Spans: 40-10-5 • 420 SERIES Inverted Truss Designs • M.S.R. S-P-F CAN					
	DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9 1/4"	L/480		15'-10"	16'-8"	17'-10"	19'-7"
	L/360		16'-11"	18'-5"	19'-7"	20'-0"
11 1/4"	L/480		18'-9"	20'-4"	21'-5"	23'-7"
	L/360		20'-0"	22'-0"	23'-7"	24'-0"
14"	L/480		20'-3"	23'-10"	25'-3"	27'-11"
	L/360		20'-3"	24'-0"	27'-10"	28'-0"
16"	L/480		22'-0"	26'-0"	28'-6"	30'-0"
	L/360		22'-0"	26'-0"	30'-0"	30'-0"

320 SERIES	Maximum Spans: 40-20-5 • 320 SERIES Inverted Truss Designs • M.S.R. S-P-F CAN					
	DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9 1/4"	L/480		13'-7"	14'-9"	16'-0"	17'-9"
	L/360		13'-7"	16'-3"	17'-9"	18'-0"
11 1/4"	L/480		14'-0"	18'-0"	19'-2"	21'-2"
	L/360		14'-0"	18'-0"	20'-2"	22'-0"
14"	L/480		16'-0"	20'-0"	22'-8"	24'-0"
	L/360		16'-0"	20'-0"	22'-8"	24'-0"
16"	L/480		18'-3"	22'-0"	24'-9"	28'-0"
	L/360		18'-3"	22'-0"	24'-9"	28'-0"

420 SERIES	Maximum Spans: 40-20-5 • 420 SERIES Inverted Truss Designs • M.S.R. S-P-F CAN					
	DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9 1/4"	L/480		15'-10"	16'-8"	17'-0"	19'-7"
	L/360		16'-0"	18'-5"	19'-7"	20'-0"
11 1/4"	L/480		16'-0"	20'-0"	21'-3"	23'-7"
	L/360		16'-0"	20'-0"	23'-7"	24'-0"
14"	L/480		18'-0"	22'-0"	24'-0"	27'-11"
	L/360		18'-0"	22'-0"	24'-0"	28'-0"
16"	L/480		18'-3"	22'-0"	26'-0"	30'-0"
	L/360		18'-3"	22'-0"	26'-0"	30'-0"

Spans are not evaluated for vibration or bounce.



JOIST FRAMING IS UNSTABLE UNTIL BRACED Laterally.

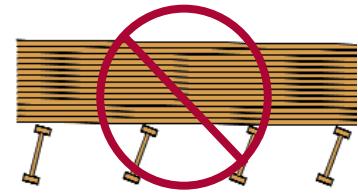


IF BRACING IS CUT OR ALTERED CONTACT YOUR SPACEJOIST TE REPRESENTATIVE.

BRACING INCLUDES: ❖ END RESTRAINTS
❖ TEMPORARY LATERAL BRACING
❖ HANGERS ❖ BLOCKING ❖ SHEATHING



Do not allow workers to walk on SpaceJoist TE until braced or injury may result. See Notes 1, 2, and 3 below.



Do not stack building materials on unsheathed SpaceJoist TE. Stack building materials only over beams or bearing walls. See Note 4 below.

WEIGHTS OF TYPICAL CONSTRUCTION MATERIALS

For Calculating Dead Loads

CATEGORY	TYPE	WEIGHT (psf)
Sheathing	1/2" plywood	1.5
	5/8" plywood	1.8
	3/4" plywood	2.3
	1-1/8" plywood	3.4
	1/2" OSB	1.7
	5/8" OSB	2.0
	3/4" OSB	2.5
	1-1/8" OSB	3.7
	For SYP increase decking weight by 10%	
Roofing Materials	Asphalt shingles	2.5
	Wood Shingles	2.0
	Clay Tile	9.0 to 14.0
	Slate (3/8" thick)	15
	16 ga. Corrugated Galvanized Steel	2.9
	20 ga. Corrugated Galvanized Steel	1.8
	22 ga. Corrugated Galvanized Steel	1.5
Roll or Batt Insulation	Rock wool (1" thick)	0.2
	Glass wool (1" thick)	0.1
Floor	Hardwood (nominal 1")	4.0
	Concrete (1" thick)	
	Regular	12.0
	Lightweight	8.0 to 10.0
	Sheet vinyl	0.5
	Carpet & pad	1.0
	3/4" ceramic or quarry tile	10.0
	Gypsum concrete (3/4")	6.5
Ceilings	Acoustical fiber board	1.0
	1/2" gypsum board	2.2
	5/8" gypsum board	2.8
	Plaster (1" thick)	8.0

WARNING NOTES

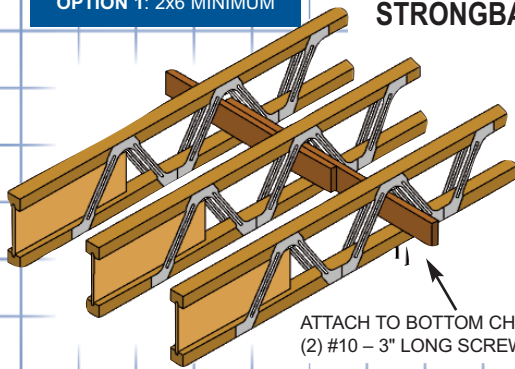
Lack of proper bracing during construction is a major cause of serious accidents. Accidents can be reduced if the following guidelines are practiced.

1. Attach temporary 1x4 (minimum) lateral bracing to each SpaceJoist TE truss during installation. Lateral bracing must be securely anchored to a braced end wall or other rigid support prior to truss installation to prevent truss rollover.
2. Solid end bracings, such as a braced end wall or an existing deck, must be established at the ends of each span. This can also be accomplished by temporary or permanent deck (sheathing) nailed to the first four feet of joist at the end of the span.
3. All blocking, reinforcements, hangers, and rim boards at the end supports of the SpaceJoist TE and sheathing must be completely installed and properly nailed prior to loading the trusses.
4. Sheathing must be fully attached to each SpaceJoist TE before loading the system.
5. Ends of cantilevers require rim board attachment on both the top and bottom flanges.
6. See "BCSI 1-03 Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses, BCSI-B1 Summary Sheet and the BCSI Summary Sheet-Series" by the Truss Plate Institute and the Wood Truss Council of America.

Failure to comply with these recommendations may cause serious injury, structural malfunction and/or collapse.

NOTE: USE EITHER APPLICATION AS SHOWN IN OPTION 1 OR 2

OPTION 1: 2x6 MINIMUM



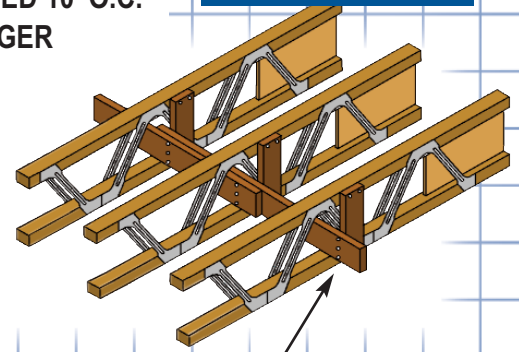
ATTACH TO BOTTOM CHORD WITH TWO (2) #10 - 3" LONG SCREWS.

STRONGBACK BRACING TO BE SPACED 10' O.C. FOR SPANS 14' AND LONGER

NOTE: TWO (2) 2x4s MAY BE USED IN LIEU OF 2x6. NAIL 2x4s TOGETHER WITH 10d NAILS AT 12" O.C.

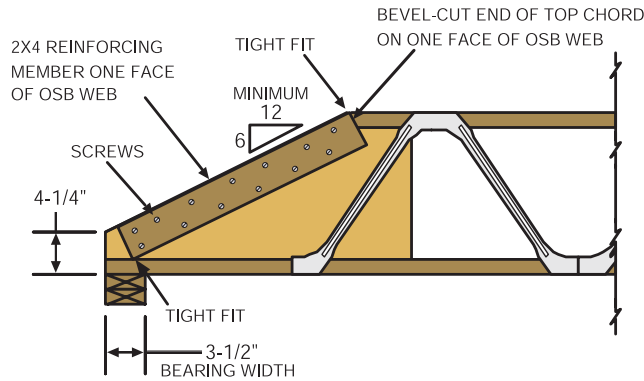
LAP STRONGBACK BRACING A MINIMUM OF ONE TRUSS SPACING.

OPTION 2: 2x6 MINIMUM



2x_ SCAB NAILED TO TOP CHORD AND BOTTOM CHORD WITH TWO (2) 10d NAILS EACH.

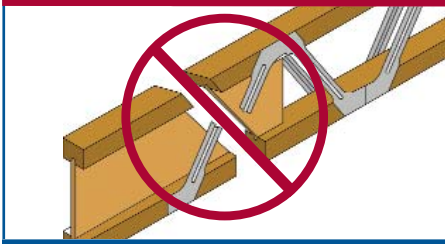
STRONGBACK BRACING IS REQUIRED - DETAIL 5



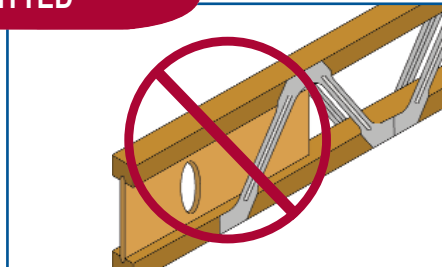
A "RAFTER CUT DETAIL" similar to the detail shown is possible with SpaceJoist TE. A heel height of 4-1/4" and a minimum 6/12 slope is required. Depending on the heel height, rafter slope and truss span, SpaceJoist TE will determine what reinforcement is required. SpaceJoist TE Engineering must be contacted for specific reinforcement details.

RAFTER CUT DETAIL

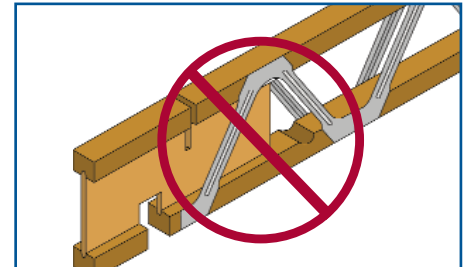
THESE CONDITIONS ARE NOT PERMITTED



Do Not Trim Past Metal Web

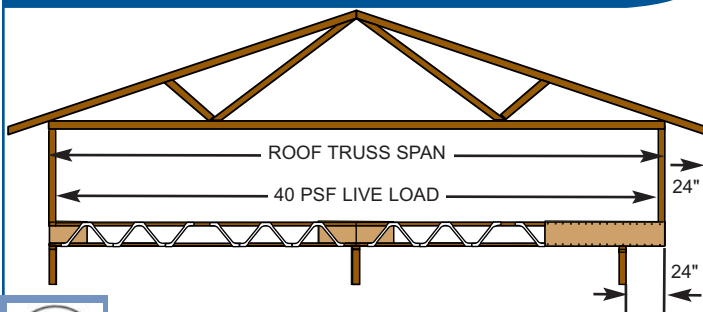


Do Not Drill Holes in OSB or Web

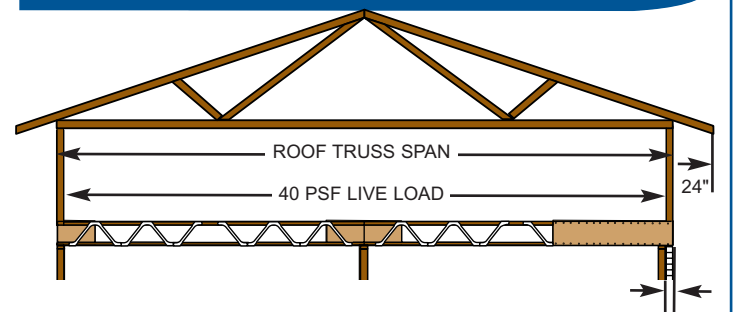


Do Not Cut, Drill or Notch

CANTILEVER DETAIL



CANTILEVER BRICK LEDGE DETAIL



MAXIMUM 5"



FLOOR CANTILEVER APPLICATIONS

24" CANTILEVER REINFORCEMENT DETAIL TABLE

DETAIL TYPES

THE FOLLOWING NOTES
REFERENCE CHARTS
ABOVE & BELOW

0 No Reinforcement
Required

1 Web Stiffener
DETAIL M

2 3/4" x 48" Plywood
Reinforcement One Side
Only DETAIL F

3 3/4" x 48" Plywood
Reinforcement Both
Sides DETAIL F

4 Requires Special
Engineering

GENERAL NOTES

Tables based on

- ❖ 15 psf roof dead load
- ❖ 80 plf exterior wall load
- ❖ 24" roof truss overhang

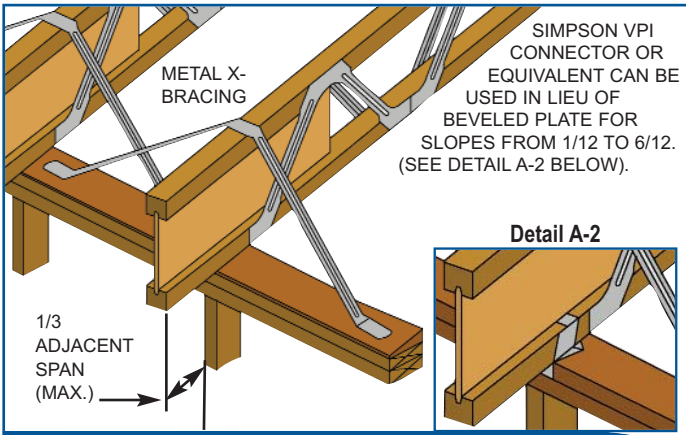
The cantilever truss must be analyzed in the SpaceJoist TE software program to confirm un-reinforced truss span.

DEPTH	ROOF TRUSS SPAN	ROOF TOTAL LOAD psf											
		35				45				55			
		24" O.C.	19.2" O.C.	16" O.C.	12" O.C.	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9-1/4"	20'	1	1	0	0	2	1	0	0	2	1	1	0
	22'	1	1	0	0	2	1	1	0	2	2	1	0
	24'	2	1	0	0	2	1	1	0	2	2	1	0
	26'	2	1	0	0	2	1	1	0	3	2	1	0
	28'	2	1	1	0	2	2	1	0	3	2	1	1
	30'	2	1	1	0	2	2	1	0	3	2	2	1
	32'	2	2	1	0	3	2	1	0	4	2	2	1
	34'	2	2	1	0	3	2	2	1	4	2	2	1
	36'	2	2	1	0	3	2	2	1	4	3	2	1
	38'	3	2	1	0	4	2	2	1	4	3	2	1
40'	3	2	1	1	4	2	2	1	4	3	2	1	
11-1/4"	20'	1	1	0	0	2	1	0	0	2	1	1	0
	22'	1	1	0	0	2	1	1	0	2	2	1	0
	24'	2	1	0	0	2	1	1	0	2	2	1	0
	26'	2	1	1	0	2	2	1	0	3	2	1	0
	28'	2	1	1	0	2	2	1	0	3	2	2	1
	30'	2	1	1	0	3	2	1	0	3	2	2	1
	32'	2	2	1	0	3	2	1	1	4	2	2	1
	34'	2	2	1	0	3	2	2	1	4	3	2	1
	36'	3	2	1	0	4	2	2	1	4	3	2	1
	38'	3	2	1	1	4	2	2	1	4	3	2	1
40'	3	2	2	1	4	3	2	1	4	3	2	1	
14"	20'	1	0	0	0	2	1	0	0	2	1	1	0
	22'	1	1	0	0	2	1	0	0	2	1	1	0
	24'	1	1	0	0	2	1	1	0	2	2	1	0
	26'	2	1	0	0	2	1	1	0	2	2	1	0
	28'	2	1	0	0	2	2	1	0	3	2	1	0
	30'	2	1	1	0	2	2	1	0	3	2	1	1
	32'	2	1	1	0	2	2	1	0	3	2	2	1
	34'	2	2	1	0	3	2	1	0	4	2	2	1
	36'	2	2	1	0	3	2	2	1	4	2	2	1
	38'	3	2	1	0	4	2	2	1	4	3	2	1
40'	3	2	1	0	4	2	2	1	4	3	2	1	
16"	20'	1	0	0	0	2	1	0	0	2	1	1	0
	22'	1	1	0	0	2	1	1	0	2	1	1	0
	24'	2	1	0	0	2	1	1	0	2	2	1	0
	26'	2	1	0	0	2	1	1	0	3	2	1	0
	28'	2	1	1	0	2	2	1	0	3	2	1	0
	30'	2	1	1	0	2	2	1	0	3	2	2	1
	32'	2	1	1	0	3	2	1	0	4	2	2	1
	34'	2	2	1	0	3	2	1	1	4	2	2	1
	36'	2	2	1	0	3	2	2	1	4	3	2	1
	38'	3	2	1	0	4	2	2	1	4	3	2	1
40'	3	2	1	1	4	2	2	1	4	3	2	1	

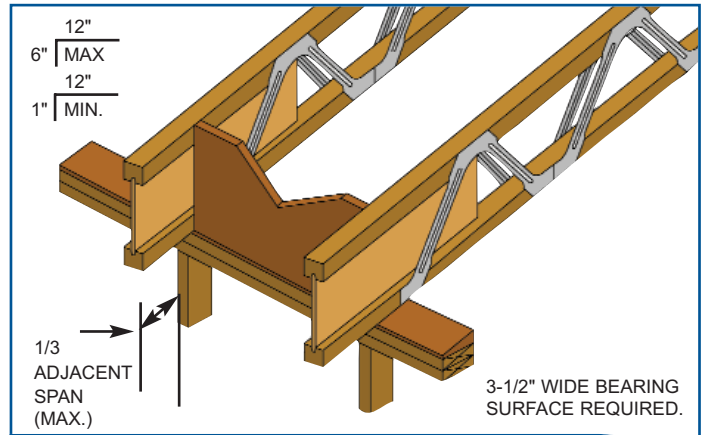
5" BRICK CANTILEVER REINFORCEMENT DETAIL TABLE

DEPTH	ROOF TRUSS SPAN	ROOF TOTAL LOAD psf											
		35				45				55			
		24" O.C.	19.2" O.C.	16" O.C.	12" O.C.	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9-1/4"	20'	1	0	0	0	1	1	0	0	2	1	0	0
	22'	1	0	0	0	2	1	0	0	2	1	1	0
	24'	1	1	0	0	2	1	1	0	2	1	1	0
	26'	2	1	0	0	2	1	1	0	2	2	1	0
	28'	2	1	0	0	2	1	1	0	2	2	1	0
	30'	2	1	1	0	2	2	1	0	3	2	1	1
	32'	2	1	1	0	2	2	1	0	3	2	2	1
	34'	2	2	1	0	3	2	1	1	4	2	2	1
	36'	2	2	1	0	3	2	2	1	4	2	2	1
	38'	2	2	1	0	3	2	2	1	4	3	2	1
40'	3	2	1	1	4	2	2	1	4	3	2	1	
11-1/4"	20'	1	0	0	0	1	1	0	0	2	1	0	0
	22'	1	0	0	0	1	1	0	0	2	1	1	0
	24'	1	1	0	0	2	1	0	0	2	1	1	0
	26'	1	1	0	0	2	1	1	0	2	2	1	0
	28'	2	1	0	0	2	1	1	0	2	2	1	0
	30'	2	1	1	0	2	2	1	0	3	2	1	0
	32'	2	1	1	0	2	2	1	0	3	2	2	1
	34'	2	1	1	0	3	2	1	0	3	2	2	1
	36'	2	2	1	0	3	2	1	1	4	2	2	1
	38'	2	2	1	0	3	2	2	1	4	3	2	1
40'	3	2	1	0	4	2	2	1	4	3	2	1	
14"	20'	1	0	0	0	1	1	0	0	2	1	1	0
	22'	1	1	0	0	2	1	0	0	2	1	1	0
	24'	1	1	0	0	2	1	1	0	2	2	1	0
	26'	2	1	0	0	2	1	1	0	2	2	1	0
	28'	2	1	1	0	2	2	1	0	2	2	1	1
	30'	2	1	1	0	2	2	1	0	3	2	2	1
	32'	2	1	1	0	3	2	1	1	3	2	2	1
	34'	2	2	1	0	3	2	2	1	4	2	2	1
	36'	2	2	1	0	3	2	2	1	4	3	2	1
	38'	3	2	1	1	4	2	2	1	4	3	2	1
40'	3	2	2	1	4	2	2	1	4	3	2	1	
16"	20'	1	0	0	0	1	1	0	0	2	1	1	0
	22'	1	1	0	0	2	1	0	0	2	1	1	0
	24'	1	1	0	0	2	1	1	0	2	2	1	0
	26'	2	1	0	0	2	1	1	0	2	2	1	0
	28'	2	1	1	0	2	2	1	0	3	2	1	1
	30'	2	1	1	0	2	2	1	0	3	2	2	1
	32'	2	1	1	0	2	2	1	0	3	2	2	1
	34'	2	2	1	0	3	2	1	1	4	2	2	1
	36'	2	2	1	0	3	2	2	1	4	2	2	1
	38'	3	2	1	1	4	2	2	1	4	3	2	1
40'	3	2	1	1	4	2	2	1	4	3	2	1	

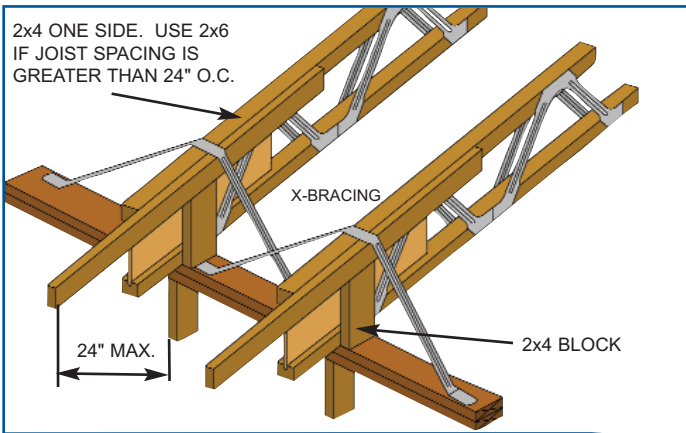
ROOF APPLICATIONS



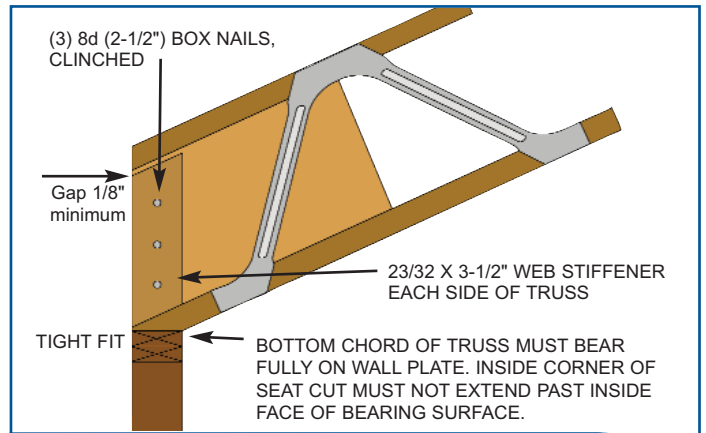
Beveled Plate Use - Detail R-A



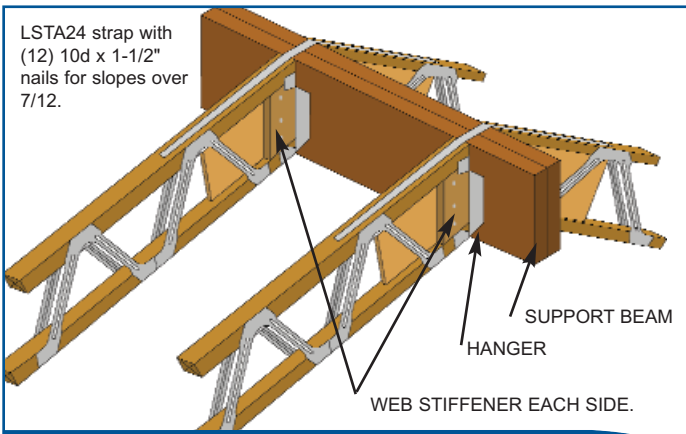
Blocking at Bearing Wall - Detail R-B



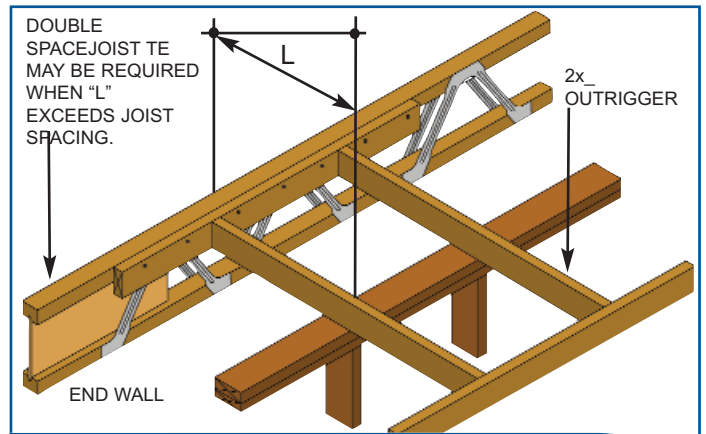
Alternate Overhang - Detail R-C



Web Stiffener Application to Seat Cut - Detail R-D



Ridge Beam Attachment - Detail R-E

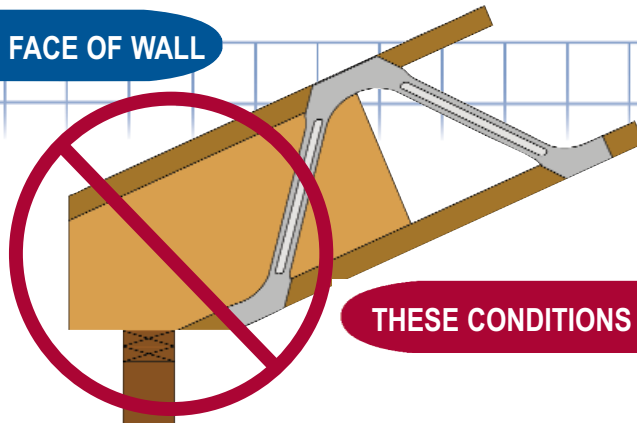


Outrigger/Ladder - Detail R-F

DO NOT BEVEL CUT BEYOND INSIDE FACE OF WALL

DO NOT BEVEL CUT SPACEJOIST TE BEYOND INSIDE FACE OF WALL.

MUST NOT OVERHANG INSIDE FACE OF PLATE.



THESE CONDITIONS ARE NOT PERMITTED



SPACEJOIST TE RESIDENTIAL ROOF SPANS 320 SERIES

Live Load 20 psf / Dead Load 20 psf / Load Duration Factor 1.15					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	19'-09"	22'-01"	22'-05"	22'-05"
11¼"	L/240	22'-04"	25'-00"	25'-11"	25'-11"
14"	L/240	24'-09"	29'-09"	30'-09"	30'-09"
16"	L/240	27'-01"	30'-05"	33'-01"	33'-01"

Live Load 20 psf / Dead Load 20 psf / Load Duration Factor 1.25					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	20'-07"	22'-05"	22'-05"	22'-05"
11¼"	L/240	23'-02"	25'-11"	25'-11"	25'-11"
14"	L/240	24'-09"	29'-08"	30'-09"	30'-09"
16"	L/240	28'-04"	31'-09"	33'-01"	33'-01"

Live Load 30 psf / Dead Load 17 psf / Load Duration Factor 1.15					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	18'-04"	20'-06"	21'-11"	22'-05"
11¼"	L/240	20'-04"	23'-01"	25'-03"	25'-11"
14"	L/240	21'-09"	25'-11"	29'-02"	30'-09"
16"	L/240	25'-01"	28'-02"	30'-11"	30'-01"

Live Load 30 psf / Dead Load 17 psf / Load Duration Factor 1.25					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	18'-04"	20'-06"	21'-11"	22'-05"
11¼"	L/240	20'-04"	23'-01"	25'-03"	25'-11"
14"	L/240	21'-09"	25'-11"	29'-02"	30'-09"
16"	L/240	25'-01"	28'-02"	30'-11"	33'-01"

Live Load 30 psf / Dead Load 10 psf / Load Duration Factor 1.25					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	17'-10"	19'-11"	21'-10"	22'-05"
11¼"	L/240	19'-05"	22'-05"	24'-07"	25'-11"
14"	L/240	20'-09"	24'-08"	28'-04"	30'-09"
16"	L/240	23'-11"	27'-04"	30'-00"	33'-01"

Live Load 40 psf / Dead Load 17 psf / Load Duration Factor 1.15					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	16'-08"	18'-08"	19'-11"	21'-09"
11¼"	L/240	17'-06"	20'-09"	23'-01"	25'-11"
14"	L/240	18'-09"	22'-02"	25'-07"	30'-08"
16"	L/240	21'-06"	25'-08"	28'-02"	32'-07"

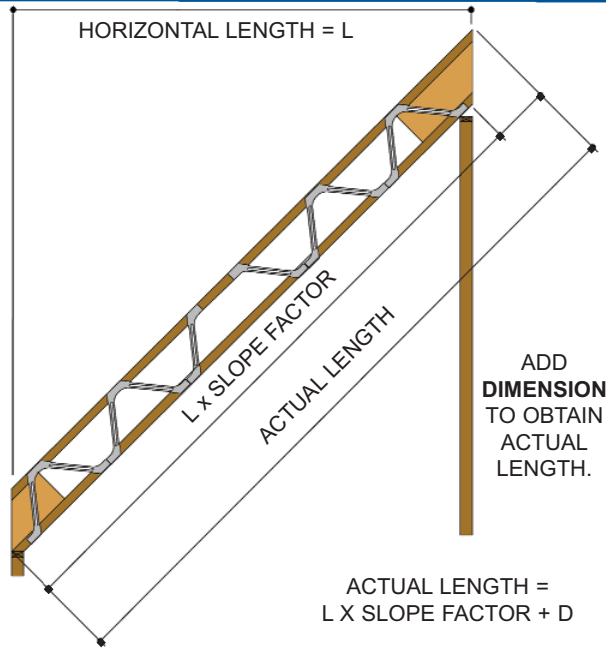
Live Load 40 psf / Dead Load 17 psf / Load Duration Factor 1.25					
DEPTH	DEFLECTION	24" O.C.	19.2" O.C.	16" O.C.	12" O.C.
9¼"	L/240	16'-08"	18'-08"	19'-11"	21'-09"
11¼"	L/240	17'-06"	20'-09"	23'-01"	25'-11"
14"	L/240	18'-09"	22'-02"	25'-07"	30'-08"
16"	L/240	21'-06"	25'-08"	28'-02"	32'-07"

SPACEJOIST TE RESIDENTIAL ROOF SPANS — GENERAL NOTES

- ❖ Tables assume SpaceJoist TE's are trimmed symmetrically from each end, and that chases are covered with plywood reinforcement.
- ❖ All spans are horizontal dimensions.



SPACEJOIST TE RESIDENTIAL ROOF SPANS — SLOPE FACTOR TABLE



SLOPE	SLOPE FACTOR	D DIMENSION			
		9¼"	11¼"	14"	16"
2½" in 12	1.022	2"	2-3/8"	3"	3-3/8"
3" in 12	1.031	2-3/8"	2-7/8"	3-5/8"	4"
3½" in 12	1.042	2-3/4"	3-3/8"	4-1/4"	4-5/8"
4" in 12	1.054	3-1/8"	3-3/4"	4-3/4"	5-1/4"
4½" in 12	1.068	3-1/2"	4-1/4"	5-3/8"	6"
5" in 12	1.083	3-7/8"	4-3/4"	6"	6-5/8"
6" in 12	1.118	4-5/8"	5-5/8"	7-1/8"	7-7/8"
7" in 12	1.158	5-3/8"	6-5/8"	8-3/8"	9-1/4"
8" in 12	1.202	6-1/4"	7-1/2"	9-1/2"	10-1/2"
9" in 12	1.25	6-3/8"	8-1/2"	10-3/4"	11-7/8"
10" in 12	1.302	7-3/4"	9-3/8"	11-7/8"	13-1/8"
11" in 12	1.357	8-1/2"	9-1/2"	13-1/8"	14-1/2"
12" in 12	1.414	9-1/4"	11-1/4"	14-1/4"	15-3/4"

GENERAL NOTES

MINIMUM BEARING LENGTH

- ❖ 1¾" minimum bearing width is required at SpaceJoist TE end supports.

LATERAL SUPPORT TO PREVENT ROLLOVER

- ❖ To prevent truss rollover, provide lateral support at all SpaceJoist TE end bearing locations and at cantilever bearing locations with SpaceJoist TE rim board or cross bracing (2x_ wood or metal).

WEB STIFFENER REQUIREMENTS

- ❖ Web stiffeners are required at all sloped hanger locations and at all seat cut locations. See DETAIL R-D.

SLOPE/BEVEL PLATE CRITERIA

- ❖ Unless otherwise noted, all details are valid to a maximum 12/12 slope.
- ❖ A sloped bearing plate is required for all slopes exceeding ½" per foot. At the low end of SpaceJoist TE a seat cut may be used in lieu of a beveled bearing plate. See DETAIL R-D.
- ❖ To resist sliding forces, uplift forces and Seismic forces, supplemental connections to the bearing plate may be required for slopes greater than 4". Specifying these connections is the responsibility of the building designer.



SPACEJOIST TE™ HANGERS FOR 320 JOIST

320 SERIES SINGLE

Joist Height	Top Flange			
	Model	Fastener Type		Down Load ²
		Header	Joist	
9¼"	ITT39.25	6-10d	2-10dx1½	1450
11¼"	ITT 311.25	6-10d	2-10dx1½	1450
14"	ITT314	6-10d	2-10dx1½	1450
16"	ITT316	6-10d	2-10dx1½	1450

Face Mount			
Model	Fastener Type		Down Load ²
	Header	Joist	
IUT310	8-10d	2-10dx1½	890
IUT312	10-10d	2-10dx1½	1110
IUT314	14-10d	2-10dx1½	1555
IUT316	16-10d	2-10dx1½	1775

45° Skew			
Model	Fastener Type		Down Load ²
	Header	Joist	
SUR/L310	14-16d	6-10dx1½	1860
SUR/L310	14-16d	6-10dx1½	1860
SUR/L314	18-16d	8-10dx1½	2395
SUR/L314	18-16d	8-10dx1½	2395

Joist Height	Adjustable Height			
	Model	Fastener Type		Down Load ²
		Header	Joist	
9¼"	THAI322	6-10d	2-10dx1½	1835
11¼"	THAI322	6-10d	2-10dx1½	1835
14"	THAI322 ⁶	6-10d	2-10dx1½	1835
16"	THAI322 ⁶	6-10d	2-10dx1½	1835

Field Slope and Skew			
Model	Fastener Type		Down Load ²
	Header	Joist	
LSSUH310	18-16d	12-10dx1½	1600
LSSUH310	18-16d	12-10dx1½	1600
LSSUH310	18-16d	12-10dx1½	1600
LSSUH310 ³	18-16d	12-10dx1½	1600

Variable Pitch			
Model	Fastener Type		Down Load ²
	Header	Joist	
VPA3	9-10d	2-10dx1½	1230
VPA3	9-10d	2-10dx1½	1230
VPA3	9-10d	2-10dx1½	1230
VPA3	9-10d	2-10dx1½	1230

320 SERIES DOUBLE

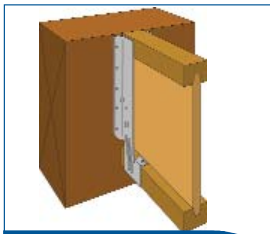
Joist Height	Top Flange			
	Model	Fastener Type		Down Load ²
		Header	Joist	
9¼"	LBV39.25-2	6-10d	2-10dx1½	2035
11¼"	LBV311.25-2	6-10d	2-10dx1½	2035
14"	LBV314-2	6-10d	2-10dx1½	2035
16"	LBV316-2	6-10d	2-10dx1½	2035

Face Mount			
Model	Fastener Type		Down Load ²
	Header	Joist	
MIU39-2	14-16d	2-10dx1½	1860
MIU311-2	16-16d	2-10dx1½	2130
MIU314-2	18-16d	2-10dx1½	2395
MIU316-2	20-16d	2-10dx1½	2660

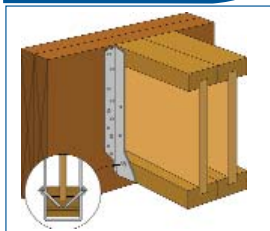
Adjustable Height			
Model	Fastener Type		Down Load ²
	Header	Joist	
	Top	Face	
THAI-2 ⁵	4-10d	2-10dx1½	2020
THAI-2 ⁵	4-10d	2-10dx1½	2020

Refer to Simpson Strong-Tie® catalog *Connectors For Composite Wood Products*

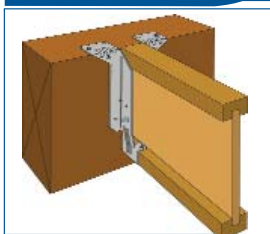
SIMPSON STRONG-TIE® — GENERAL NOTES



IUT



MIU

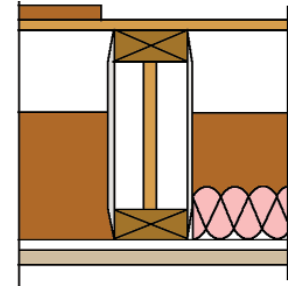
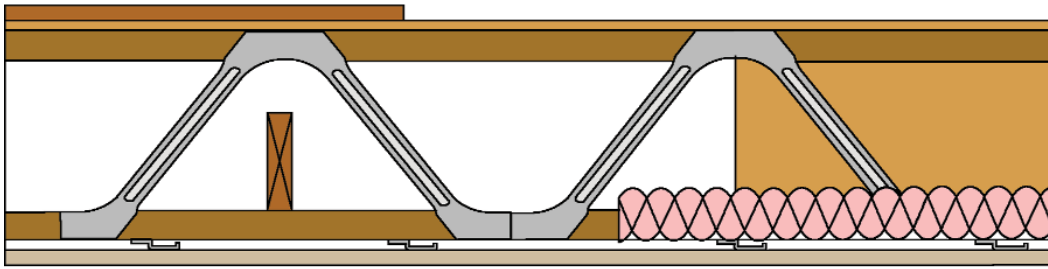


ITT

- Highlighted hangers require web stiffeners at I-joist ends. Web stiffeners may be required for hangers that are not highlighted—contact your SpaceJoist TE representative for more information.
- Loads listed are based on Douglas-Fir-Larch or Southern Pine species of LVL or solid sawn header.
 - Download column represents floor loading at 100% duration. Other load durations may apply. Refer to the Simpson Strong-Tie® *Composite Wood Products Connectors* catalog for allowable increases.
 - Minimum nail penetration required to achieve loads listed for face mount hangers:
 - 10d common min. penetration = 1¾"
 - 16d common min. penetration = 2"
 - Top flange hanger capacities listed require a minimum header width of 3" for hangers using 10d common nails and 3½" for hangers using 16d common nails.
 - When top flange hangers are supported by a SpaceJoist TE header, the following download applies with no further increase allowed:
 - 755 lbs. for ITT
 - 895 lbs. for LBV
 - top nails: (4) 10d - 1½"
 - face nails: (2) 10d - 1½"
 - When ITT hangers are supported by a single, less than 1½" thick, DF or SP LVL, the following load applies with no further increase allowed:
 - 1235 lbs. for ITT hangers
 - top nails: (4) 10d - 1½"
 - face nails: (2) 10d - 1½"
 - THAI hangers require a minimum of four (4) top and two (2) face 10d nails installed.
- If hanger height is less than 60% of joist height, potential joist rotation may occur—consult Simpson Strong-Tie® literature for additional information.
- Refer to the current Simpson Strong-Tie® *Composite Wood Products Connectors* catalog for hanger models and joist sizes not shown.
- THAI-2 hangers must be special ordered. Specify hanger seat width between 3-1/8" and 5-5/16".
- Joists taller than 14" require lateral restraint at the top chord when used with THAI hanger. Lateral restraint can be accomplished as described by the "Prevent Rotation" illustration on page 8 of the Simpson Strong-Tie® *Composite Wood Products Connectors* catalog or with blocking.



SPACEJOIST TE™ FIRE-RATED ASSEMBLIES



TEST RESULT SUMMARY

- ❖ DESIGN NO. TSC/FCA 60-01
- ❖ WITH SPACEJOIST METAL WEB, ASSEMBLY RATING: 60 MINUTES - UNRESTRAINED
- ❖ FLOOR/CEILING ASSEMBLY; FINISH RATING - 22 MINUTES
- ❖ STC 50 WITH INSULATION AND RESILIENT CHANNELS
- ❖ STC 55 WITH LIGHTWEIGHT CONCRETE

SPACEJOIST TE™ FIELD SOUND TRANSMISSION TEST— GENERAL NOTES

TEST	F-IIC	Def. (db)
Carpet/padding with 3/4" gypcrete	70	15
Vinyl flooring with 3/4" gypcrete	51	27
3/8" laminate wood flooring with 3/4" gypcrete	54	30
Ceramic tile / insulayment with 3/4" gypcrete	52	28

TEST RESULT SUMMARY

- ❖ The test results contained in this report pertain only to the actual assemblies tested and not necessarily to all similar constructions.
- ❖ Please call SpaceJoist TE Engineering Dept. for complete documentation.

- ❖ PROJECT NUMBER 3018 02 50879
- ❖ STORK® Twin City Testing Corp, 622 Cromwell Avenue, St. Paul, Minnesota 55114-1776
- ❖ FIELD SOUND TRANSMISSION CLASS (F-STC) - ASTM E366-97
- ❖ FIELD IMPACT INSULATION CLASS (F-IIC) - ASTM E1007-97

SPACEJOIST TE™ FIRE-RATED ASSEMBLIES AND SUMMARY OF SOUND RATINGS

*ASSEMBLY	FIRE RATING	CEILING	RESILIENT CHANNEL	INSULATION *(3)	STC RATING	STC W/LIGHT WT. CONCRETE
TSC / FCA 60-01	60 minutes	1 LAYER 5/8" TYPE C	Yes	*(4)	50	55
TSC / FCA 60-03	60 minutes	SUSPENDED	*(1)	N/A	NO RATING	NO RATING
TSC / FCA 60-09	60 minutes	2 LAYERS 1/2" TYPE X	*(5)	NO	50	55
TSC / FCA 90-01	90 minutes	2 LAYERS 5/8" TYPE X	*(5)	*(4)	52	57
QUALTIM	120 minutes	3 LAYERS 5/8" TYPE X	Yes	NO	53	60

- *(1) FIRE-RATED CEILING SYSTEM
- *(2) 1 1/2" "MINERAL WOOL BATTS"
- *(4) REQUIRED FOR SOUND RATINGS ONLY
- *(5) RESILIENT CHANNEL REQUIRED FOR SOUND RATINGS ONLY

FOR COMPLETE DETAILS

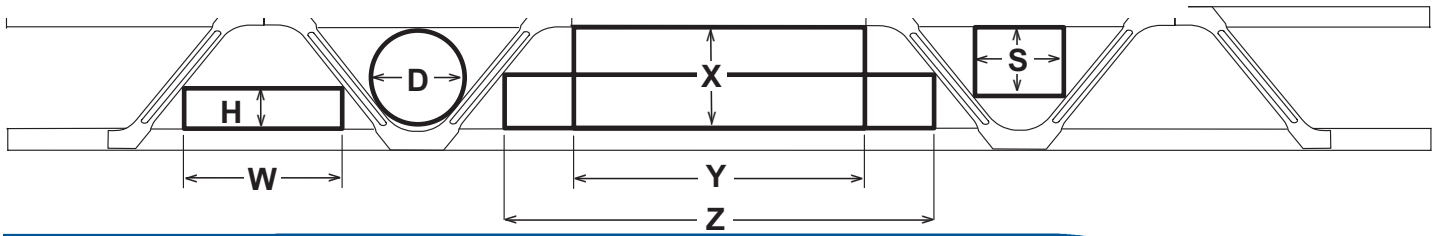
Details of each assembly can be found at *Intertek Testing Services Directory*
www.etlsemko.com/ProdDir/index.htm

- ❖ Warnock Hersey Listed Products
- ❖ Directory of Listed Products Research
- ❖ Search Name: Truswal

Or contact SpaceJoist TE Engineering Department at 800-238-8678



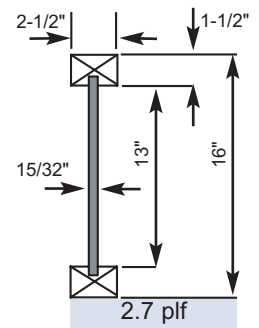
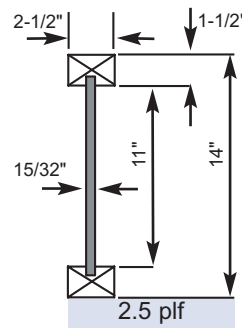
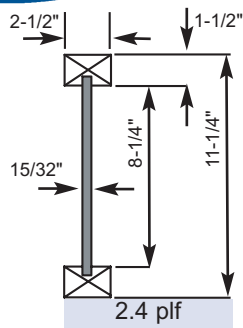
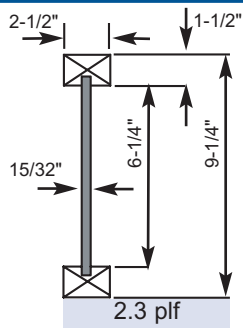
SPACEJOIST TE TRUSS CHARACTERISTICS



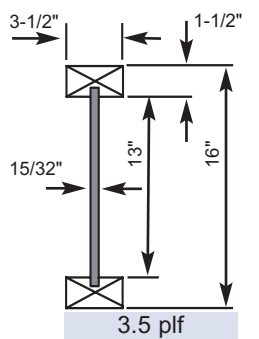
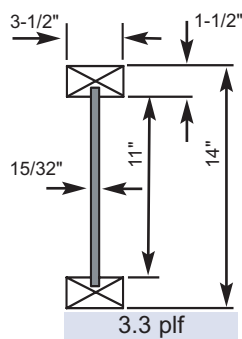
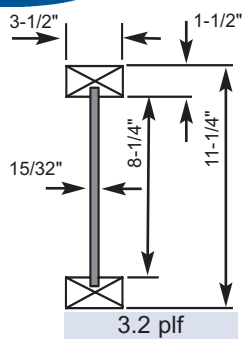
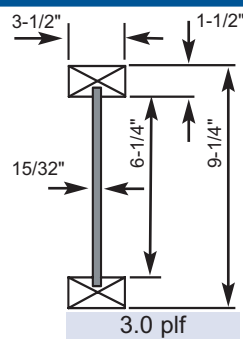
MAXIMUM DIMENSIONS

DEPTH	D	H	W	S	X	Y	Z (8" dp)	Z (6" dp)
9 1/4"	6.0"	3.8"	8.1"	5.2"	6.25"	24"	N/A	26"
11 1/4"	7.5"	4.7"	8.4"	6.0"	8.25"	24"	26"	30"
14"	9.9"	6.2"	11.1"	8.0"	11.0"	20"	28"	31"
16"	10.4"	7.0"	10.3"	8.4"	13.0"	20"	29"	32"
EXCEPTION				TE14-20		12"	22"	24"
				TE16-10		12"	22"	25"

320 SERIES



420 SERIES



TYPICAL RIM BOARD

TECHNICAL DATA

APPLICABLE STANDARDS

- ❖ SpaceJoist TE rim board has not been evaluated as a structural joist, header or ledger, or rafter member.
- ❖ SpaceJoist TE rim board is 1 1/8" thick and is manufactured to meet APA's requirements.

INSTALLATION

FASTENER VALUES

- ❖ **Nail Values:** For nailed connections in the wide face of rim board, use the design values for the Spruce-Pine-Fir lumber group (specific gravity = .42) listed in National Design Specification for Wood Construction.
- ❖ **Bolt Values:** 350# for 1/2" diameter bolt in single shear with load applied perpendicular to bolt axis. (For other load durations, multiply this value by an appropriate load duration factor). Provide fender washers at bolt connections to SpaceJoist TE rim board.
- ❖ SpaceJoist TE rim board must be supported by continuous structural bearing. For detailed installation specifications, contact your SpaceJoist TE representative.

AVAILABILITY

- ❖ SpaceJoist TE rim board is available nationwide through SpaceJoist TE distributors.

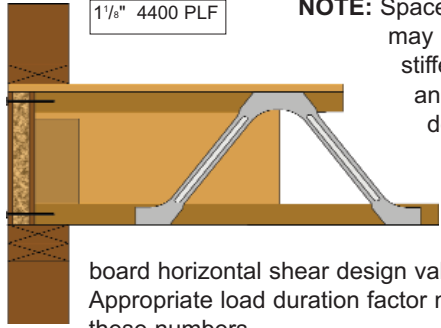
RIM BOARD LOAD TRANSFER CHART

RIM BOARD	LOAD TRANSFER
1" COMPOSITE RIM BOARD	3300 plf
1 1/8" COMPOSITE RIM BOARD	4400 plf
1 1/8" RIM BOARD PLUS	4850 plf

Load Transfer Chart based on APA Performance Rated Rim Board or equal

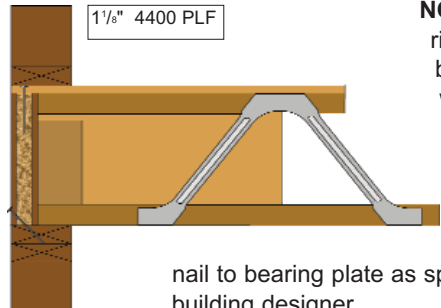
SpaceJoist TE Rim Board Specifications			
THICKNESS	DEPTH	LENGTH	WEIGHT (PLF)
1 1/8"	9 1/4"	16'	2.9
1 1/8"	11 1/4"	16'	3.6
1 1/8"	14"	16'	4.3
1 1/8"	16"	16'	4.8

Maximum Load Connection



NOTE: SpaceJoist TE may or may not require web stiffeners. Please analyze joist design.
Maximum transfer load for rim board is 4400 PLF. Rim board horizontal shear design value is 180 PLF. Appropriate load duration factor may be applied to these numbers.

Connection - Rim Board Joist



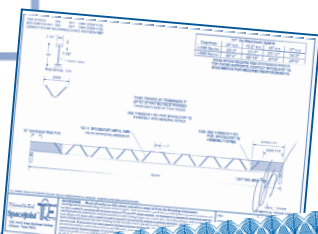
NOTE: Toe-nail rim board to bearing plate with 8d (box or common) at 6" O.C. per APA specifications. When used for shear transfer, nail to bearing plate as specified by the building designer.

NOTE: Nail rim board to each SpaceJoist TE with two 8d box or common nails (one nail in the top chord and one nail in the bottom chord).





SpaceJoist TE™ Trimmable End Truss offers Joist-in-Time™ technology that delivers a truly unique floor system to today's builders. What you may not know is that SpaceJoist is a part of a larger family of companies that has been serving the structural building component industry for decades.



GUARANTEED QUALITY

SpaceJoist TE™, LLC guarantees that all its products have been built in accordance with stringent quality criteria and have no defects that compromise their proper performance provided they are installed in accordance with directions and under the conditions outlined in this manual. Should your floor or roof structural system not perform within limits as stipulated in governing local building codes, or if none are stipulated, within design tolerances, SpaceJoist TE™, LLC will make every reasonable effort to solve the perceived problem.



For more than 40 years, Truswal Systems Corporation has been a key player in the metal-plate-connected wood component industry. Truswal has invested millions of dollars and thousands of labor hours in the development of state-of-the-art software programs for component design, engineering, building layout and truss plant management.

And now, Truswal Systems is taking innovation to new levels.

With the acquisition of Intelligent Building Systems—the industry's leading wall panel software and equipment manufacturer—Truswal has revolutionized the world of whole house design. Truswal's new IntelliBuild™ software integrates all components of a structure—walls, openings, roofs and floors—into one application. The beauty of IntelliBuild is parametric modeling technology, which promotes design changes anytime, anywhere, by allowing all design modifications to instantly and completely flow through the entire structure!



While other companies boast about the capabilities of their high-tech voicemail systems, Truswal believes that people are the most important part of doing business. That's why we turn to our customers for input when we develop our products. That's why we provide comprehensive training when you buy our products. And that's why we have a friendly customer service team that is there when you need someone.



So now you have the whole picture. From the floors on up, no matter what your current needs or future plans might be, the Truswal Systems family of companies is the intelligent place to start.



DESIGN & SPECIFICATION GUIDE

JOIST-IN-TIME™ ENGINEERED WOOD SYSTEMS

U.S. Pat. 5,867,962 Other Patents Pending

© TRUSWAL SYSTEMS CORP.—APRIL 2007

STRONG

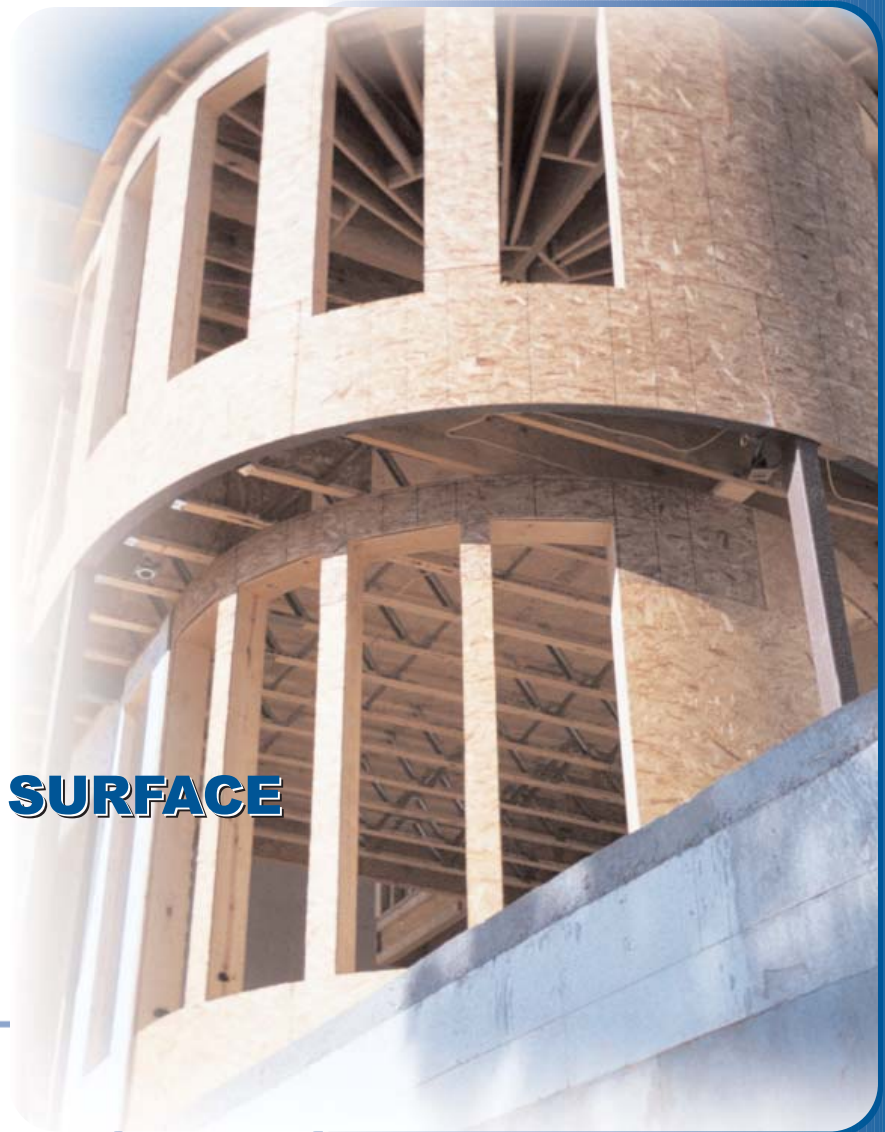
ECONOMICAL

EFFICIENT

FLEXIBLE

LIGHTWEIGHT

WIDE NAILING SURFACE



Distributed by:

SpaceJoist TE, LLC
220 Westway Place, Suite 200
Arlington TX 76018
Phone: (800) 238-8678 • Fax: (817) 652-3079
www.spacejoist.com

ITW Building Components Group



- ❖ SpaceJoist TE™ is a registered trademark of SpaceJoist TE, LLC.
- ❖ SpaceJoist is a registered trademark of Truswal Systems Corporation
- ❖ SpaceJoist TE, LLC is a member of these industry organizations:

