H *Seismic & Hurricane Ties*

The Hurricane Tie series features various configurations of wind and seismic ties for trusses and rafters.

The H2A features an improved design and higher uplift loads to replace the H2. The H10A has a similar design as the H10 but offers higher uplift capacity.

The H10S provides a high capacity connection from truss/rafter to stud. A flexible nailing pattern allows installation where the stud is offset from the rafter up to 1". Suitable for wood-to-wood and wood-to-CMU/concrete applications.

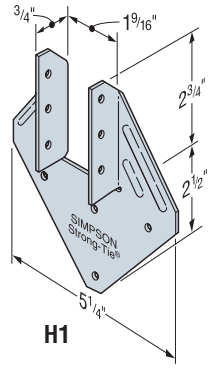
The H2.5T's truncated design was developed to accommodate trusses with 2x4 bottom chords. The easy to install, five nail pattern is stronger and gets better uplift loads than our popular H2.5 hurricane tie. H1, H10, H10S, H10-2, H11Z and H14 have also been rated for download to provide additional bearing capacity between the truss and wall.

MATERIAL: See table.

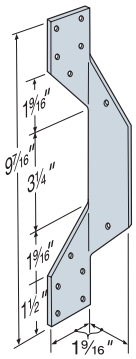
FINISH: Galvanized. H7Z and H11Z—ZMAX® coating. Some models available in stainless steel or ZMAX; see Corrosion Information, page 10-11.

INSTALLATION: • Use all specified fasteners. See General Notes.
- H1 can be installed with flanges facing inwards *(reverse of H1 drawing number 1)*.
- H2.5, H2.5T, H3, H4, H5 and H6 ties are only shipped in equal quantities of rights and lefts. *(Rights shown.)*
- Hurricane Ties do not replace solid blocking.
- Do not drive nails through the truss plate on the opposite side of single-ply trusses, which could force the plate off the truss.

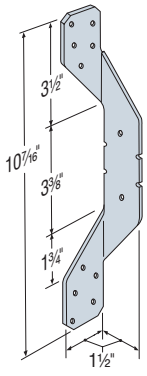
CODES: See page 12 for Code Reference Key Chart.



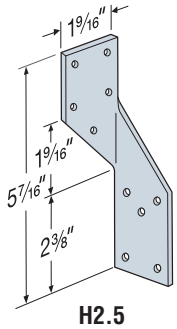
H1



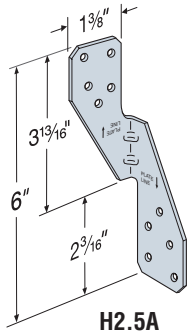
H2



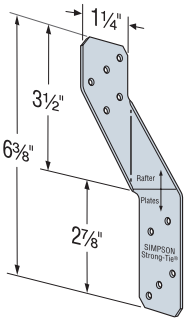
H2A



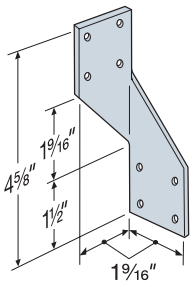
H2.5



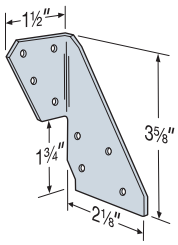
H2.5A



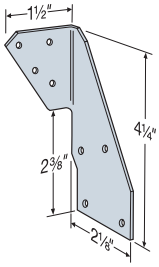
H2.5T



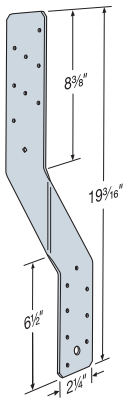
H3



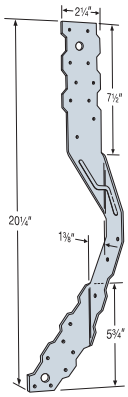
H4



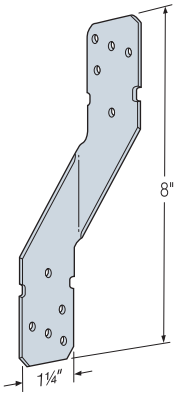
H5



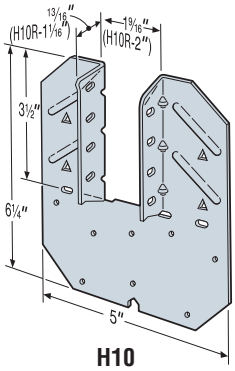
H6



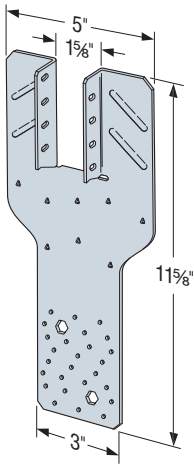
H7Z



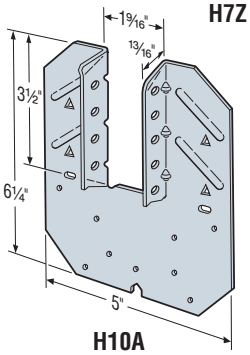
H8



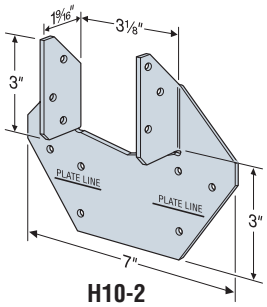
H10
(H10R similar)



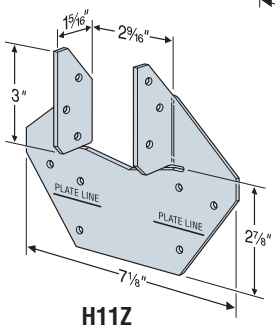
H10S



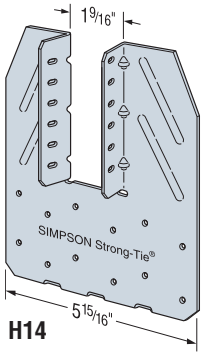
H10A



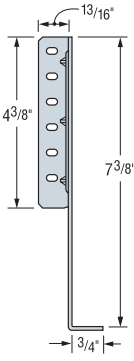
H10-2



H11Z



H14



H14 Profile

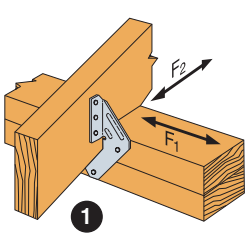
H Seismic & Hurricane Ties

SIMPSON Strong-Tie®

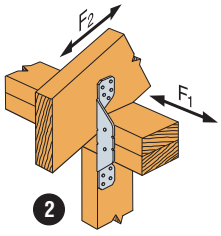
These products are available with additional corrosion protection. Additional products on this page may also be available with this option, check with Simpson Strong-Tie for details.

Model No.	Ga	Fasteners: To Rafters/ Truss	Fasteners: To Plates	Fasteners: To Studs	DF/SP Allowable Loads: Uplift (160)	DF/SP Allowable Loads: Lateral (160) F_1	DF/SP Allowable Loads: Lateral (160) F_2	Uplift Load with 8dx1½ Nails (160)	SPF/HF Allowable Loads: Uplift (160)	SPF/HF Allowable Loads: Lateral (160) F_1	SPF/HF Allowable Loads: Lateral (160) F_2	Uplift Load with 8dx1½ Nails (160)	Code Ref.
H1	18	6-8dx1½	4-8d	—	585	485	165	455	400	415	140	370	I17, L22, F16
H2	18	5-8d	—	5-8d	335	—	—	335	230	—	—	230	
H2A	18	5-8dx1½	2-8dx1½	5-8dx1½	575	130	55	—	495	130	55	—	IP1, F25
H2.5	18	5-8d	5-8d	—	415	150	150	415	365	130	130	365	I17, L22, F16
H2.5A	18	5-8d	5-8d	—	600	110	110	480	535	110	110	480	I17, F16
H2.5T	18	5-8d	5-8d	—	545	135	145	425	545	135	145	425	IP1, F25
H3	18	4-8d	4-8d	—	455	125	160	415	320	105	140	290	
H4	20	4-8d	4-8d	—	360	165	160	360	235	140	135	235	I17, L22, F16
H5	18	4-8d	4-8d	—	455	115	200	455	265	100	170	265	
H6	16	—	8-8d	8-8d	950	—	—	—	820	—	—	—	I17, F16
H7Z	16	4-8d	2-8d	8-8d	985	400	—	—	845	345	—	—	
H8	18	5-10dx1½	5-10dx1½	—	745	75	—	630	565	75	—	510	F26
H10	18	8-8dx1½	8-8dx1½	—	995	590	285	—	850	505	235	—	I17, F16
H10A	18	9-10dx1½	9-10dx1½	—	1140[7]	590	285	—	1015	505	285	—	I17, F25
H10S[9,10]	18	8-8dx1½	8-8dx1½[10]	8-8d	1010	660	215	550	870	570	185	475	IP1, F25
H10-2	18	6-10d	6-10d	—	760	455	395	—	655	390	340	—	I17, F16
H11Z	18	6-16dx2½	6-16dx2½	—	830	525	760	—	715	450	655	—	170
H14	18	[1] 12-8dx1½	13-8d	—	1350[7]	515	265	—	1050	480	245	—	IP1, F25
		[2] 12-8dx1½	15-8d	—	1350[7]	515	265	—	1050	480	245	—	

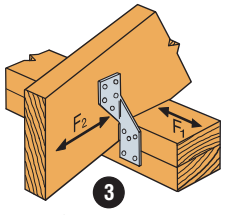
1. Loads have been increased 60% for wind or earthquake loading with no further increase allowed; reduce where other loads govern.
2. Allowable loads are for one anchor. A minimum rafter thickness of 2½" must be used when framing anchors are installed on each side of the joist and on the same side of the plate *(exception: connectors installed such that nails on opposite sides don't interfere).*
3. Allowable DF/SP uplift load for stud to bottom plate installation *(see detail 15)* is 400 lbs. (H2.5); 390 lbs. (H2.5A); 360 lbs. (H4) and 310 lbs. (H8). For SPF/HF values multiply these values by 0.86.
4. Allowable loads in the F_1 direction are not intended to replace diaphragm boundary members or prevent cross grain bending of the truss or rafter members.
5. When cross-grain bending or cross-grain tension cannot be avoided in the members, mechanical reinforcement to resist such forces may be considered.
6. Hurricane Ties are shown installed on the outside of the wall for clarity and assume a minimum overhang of 3½" installation on the inside of the wall is acceptable *(see General Instructions for the Installer notes u on page 14).* For uplift Continuous Load Path, connections in the same area *(i.e. truss to plate connector and plate to stud connector)* must be on same side of the wall.
7. Southern Pine allowable uplift loads for H10A = 1340 lbs. and for H14 = 1465 lbs.
8. Refer to technical bulletin T-HTIEBEARING for H1, H10, H10S, H10-2, H11Z, H14 allowable bearing enhancement loads *(see page 191 for details).*
9. H10S can have the stud offset a maximum of 1" from rafter *(center to center)* for a reduced uplift of 890 lbs. (DF/SP), and 765 lbs. (SPF).
10. H10S nails to plates are optional for uplift but required for lateral loads.
11. **NAILS:** 16dx2½ = 0.162" dia. x 2½" long, 10d = 0.148" dia. x 3" long, 10dx1½ = 0.148" dia. x 1½" long, 8d = 0.131" dia. x 2½" long, 8dx1½ = 0.131" dia. x 1½" long. See page 16-17 for other nail sizes and information.



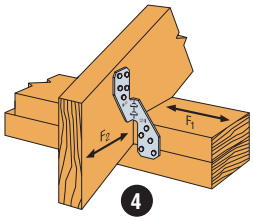
1 H1 Installation



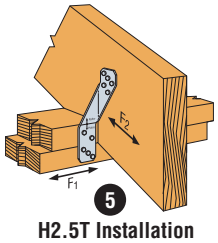
2 H2A Installation
(H2 similar)



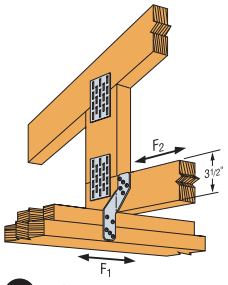
3 H2.5 Installation
(Nails into both top plates)



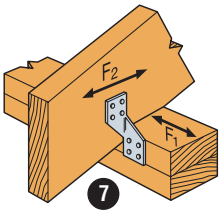
4 H2.5A Installation
(Nails into both top plates)



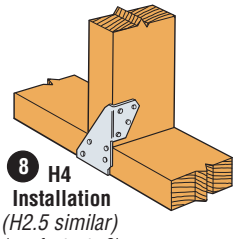
5 H2.5T Installation
(Nails into both top plates)

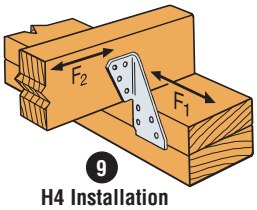


6 H2.5T Installation

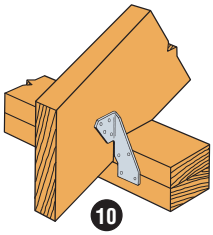


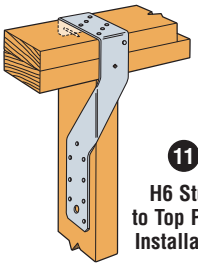
7 H3 Installation
(Nails into upper top plate)

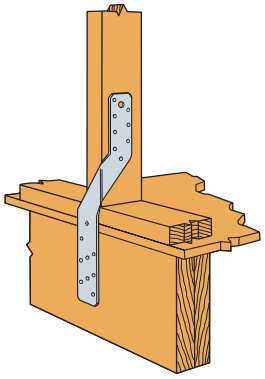

8 H4 Installation
(H2.5 similar)
(see footnote 3)

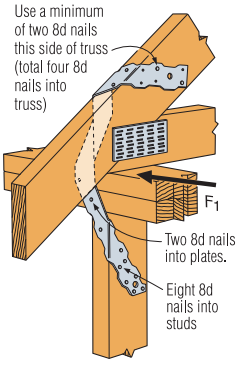


9 H4 Installation
(Nails into upper top plate)


10 H5 Installation
(Nails into both top plates)

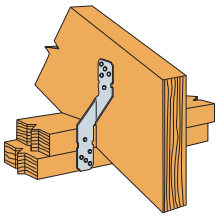

11 H6 Stud to Top Plate Installation


12 H6 Stud to Band Joist Installation

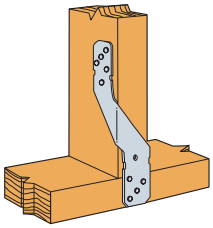


13 H7Z Installation

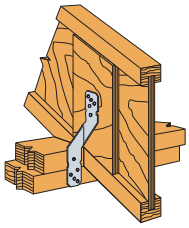
H *Seismic & Hurricane Ties*



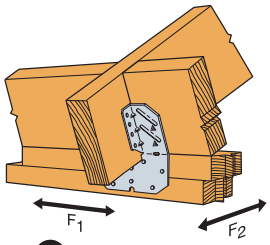
14 **H8 attaching rafter to double top plates**



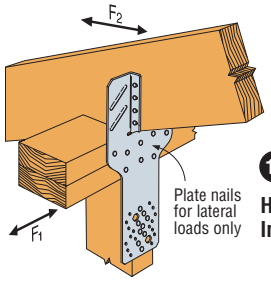
15 **H8 attaching stud to sill** *(4-8d into plate, 5-8d into stud, refer to footnote 3 for loads)*



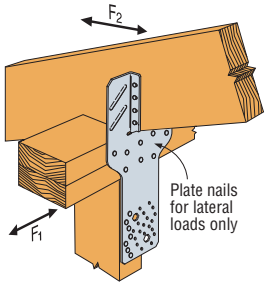
16 **H8 attaching I-joist to double top plates**



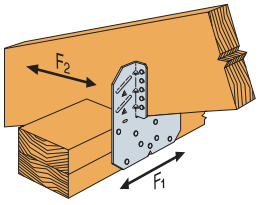
17 **H10 Installation**



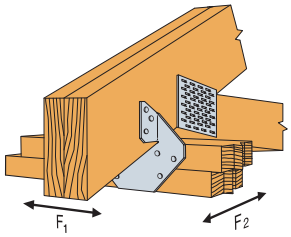
18 **H10S Installation**



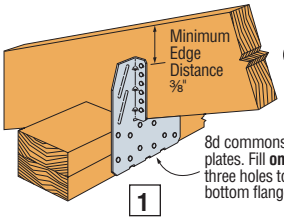
19 **H10S Installation with stud offset**



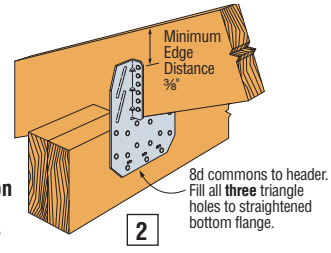
20 **H10A Installation**



21 **H10-2 Installation** *(H11Z similar)*

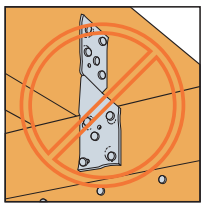


22 **H14 Installation to double top plates**



23 **H14 Installation to double 2x header**

AVOID A MISINSTALLATION



Do not make new holes or overdrive nails!

H10 optional positive angle nailing connects shear blocking to rafter. Use 8d common nails. Slot allows maximum field-bending up to a pitch of 6/12, use 75% of the table uplift load; bend one time only.

Considerations for Hurricane Tie Selection

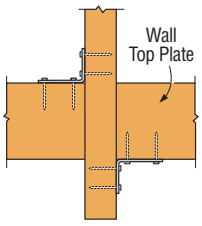
1. What is the uplift load?
2. What is the parallel-to-plate load?
3. What is the perpendicular-to-plate load?
4. What is the species of wood used for the rafter and the top plates? *(Select the load table based on the lowest performing species of wood.)*
5. Will the hurricane tie be nailed into both top plates or the upper top plate only?
6. What load or loads will the hurricane tie be taking?

> Allowable simultaneous loads in more than one direction on a single connector must be evaluated as follows:
>
> Design Uplift/Allowable Uplift + Design Lateral Parallel to Plate / Allowable Lateral Parallel to Plate + Design Lateral Perpendicular to Plate / Allowable Lateral Perpendicular to Plate < 1.0.
>
> The three terms in the unity equation are due to possible directions that exist to generate force on a hurricane tie. The actual number of terms used in the equation for each condition is dependant on designer's method of calculating wind forces and the utilization of the tie in the structural system.

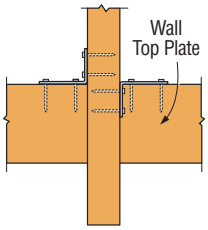
7. Select hurricane tie based on performance, application, installed cost and ease of installation.

Hurricane Tie Installations to Achieve Twice the Load (Top View)

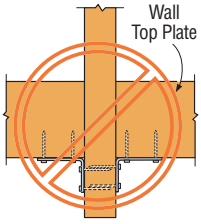
Both connectors shall be same model.



Install diagonally across from each other for minimum 2x truss.



Products can be on the same side of the wall provided they are configured as shown.



Nailing into both sides of a single ply 2x truss may cause the wood to split.

VB *Knee Braces*

The VB provides lateral resistance force at the bottom of beams when installed approximately 45° or more to the vertical plane.

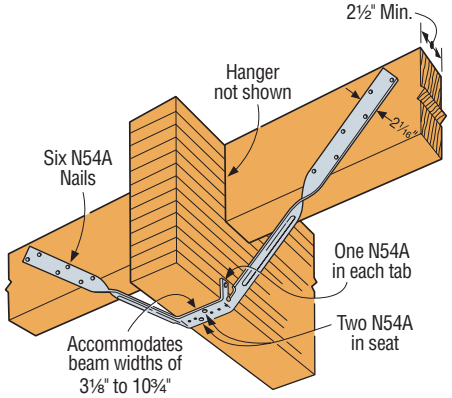
MATERIAL: 12 gauge **FINISH**: Galvanized

INSTALLATION: • Use specified fasteners. See General Notes.
• 16-N54A fasteners are included with the brace.

CODES: See page 12 for Code Reference Key Chart.

Model No.	H (Beam Depth)	L	Fasteners (Total)	Allowable Tension Loads[1]		Code Ref.
				Floor (100)	Roof (125)	
VB5	10" - 15"	5'	16-N54A	990	1240	I15, F14
VB7	15" - 22½"	7'	16-N54A	990	1240	
VB8	22½" - 28½"	8'	16-N54A	990	1240	
VB10	28½" - 36"	10'	16-N54A	990	1240	
VB12	36" - 42"	12'	16-N54A	990	1240	

1. Roof loads have been increased 25% with no further increase allowed.



Typical VB Installation

H *Seismic & Hurricane Ties*

The hurricane tie series features various configurations of wind and seismic ties for trusses and rafters.

The H16 series has a presloped seat of 5:12 for double trusses.

The presloped 5⁄12 seat of the H16 provides for a tight fit and reduced deflection. The strap length provides for various truss height up to a maximum of 13½" (*H16 series).* Minimum heel height for H16 series is 4".

The HGA10 attaches to gable trusses and provides good lateral wind resistance. The HS24 attaches the bottom chord of a truss or rafter at pitches from 0:12 to 4:12 to double 2x4 top plates. Double shear nailing allows for higher lateral resistance.

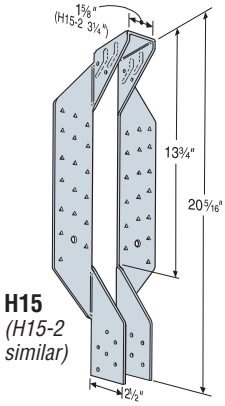
MATERIAL: See table

FINISH: Galvanized. See Corrosion Information, page 10-11.

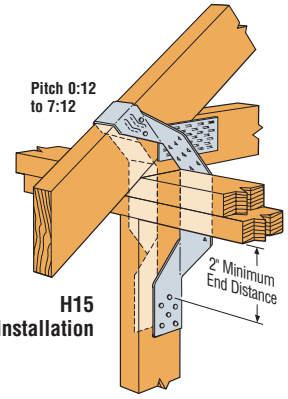
INSTALLATION: • Use all specified fasteners. See General Notes.

- The HGA10KT: screws are provided.
- HS24 requires slant nailing only when bottom chord of truss or rafter has no slope.

CODES: See page 12 for Code Reference Key Chart.



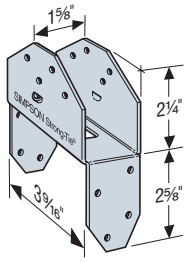
H15
(H15-2 similar)



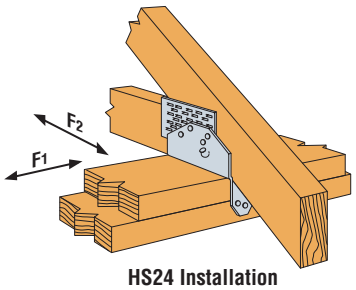
H15 Installation

Model No.	Ga	Fasteners			DF/SP Allowable Loads[1]			SPF/HF Allowable Loads[1]			Code Ref.
		To Rafters/ Truss	To Plates	To Studs	Uplift	Lateral (160)		Uplift	Lateral (160)		
					(160)	F_1	F_2	(160)	F_1	F_2	
HGA10KT	14	4-SDS ¼"x1½"	4-SDS ¼"x3"	—	695	1165	940	500	840	675	F26
HS24	18	8-8dx1½ & 2-8d slant	8-8d	—	605[3]	645[3]	1025[3]	520[3]	555[3]	880[3]	I17, F16
H15	16	4-10dx1½	4-10dx1½	12-10dx1½	1300	480	—	1120	410	—	
H15-2	16	4-10dx1½	4-10dx1½	12-10dx1½	1300	480	—	1120	410	—	
H16	18	2-10dx1½	10-10dx1½	—	1470	—	—	1265	—	—	F26
H16S	18	2-10dx1½	10-10dx1½	—	1470	—	—	1265	—	—	
H16-2	18	2-10dx1½	10-10dx1½	—	1470	—	—	1265	—	—	
H16-2S	18	2-10dx1½	10-10dx1½	—	1470	—	—	1265	—	—	

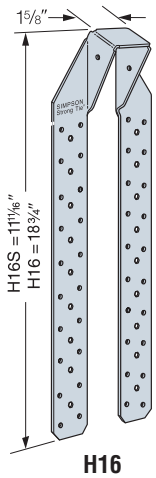
1. Loads have been increased for wind or earthquake loading with no further increase allowed; reduce where other loads govern.
2. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered.
3. HS24 DF/SP allowable loads without slant nailing are **605** lbs. (uplift), 590 lbs. (F_1), 640 lbs. (F_2). For SPF/HF loads multiply these values by 0.86.
4. For H16-2S, S = short.
5. Allowable loads in the F_1 direction are not intended to replace diaphragm boundary members or prevent cross grain bending of the truss or rafter members. Additional shear transfer elements shall be considered where there may be effects of cross grain bending or tension.
6. **NAILS:** 10dx1½ = 0.148" dia. x 1½" long, 8d = 0.131" dia. x 2½" long, 8dx1½ = 0.131" dia. x 1½" long. See page 16-17 for other nail sizes and information.



HS24
U.S. Patents 5,603,580

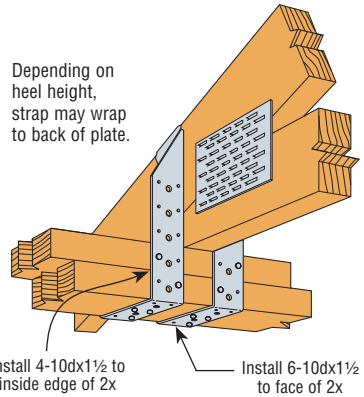


HS24 Installation

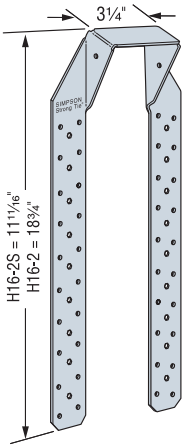


H16 and H16S

Presloped at 5:12. Truss/ Rafter Pitch of 3:12 to 7:12 is acceptable

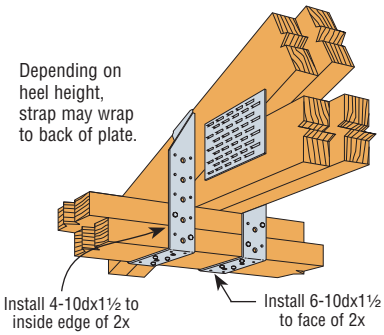


H16 Installation

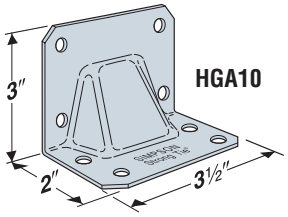


H16-2 and H16-2S

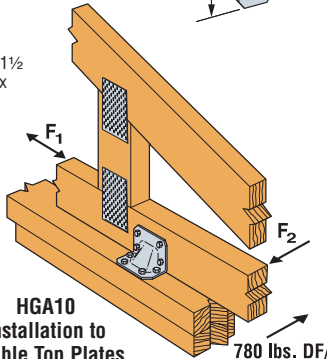
Presloped at 5:12. Pitch of 3:12 to 7:12 is acceptable



H16-2 Installation

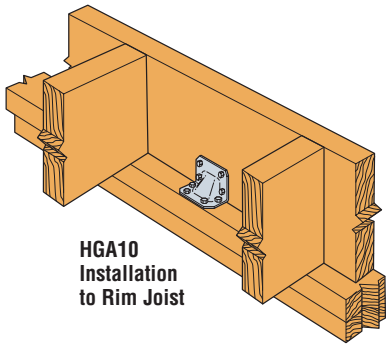


HGA10



HGA10 Installation to Double Top Plates

780 lbs. DF/SP
495 lbs. SPF/HF



HGA10 Installation to Rim Joist