SIM200803

Used for Florida State Wide Product Approval #

FL11470

Products on this Report which are approved:

Product	FL#
DSC2	11470.1
H16	11470.2
H16-2	11470.2
H16-2S	11470.2
H16S	11470.2
H8	11470.3
HGA10	11470.4
HRS12	11470.5
HRS6	11470.5
HRS8	11470.5
LGT2	11470.7
LGT3-SDS2.5	11470.7
LGT4-SDS3	11470.7
MGT	11470.9
MSTA49	11470.10
MSTC48B3	11470.1
MSTC66B3	11470.1
MTS24C	11470.1
MTS28C	11470.1
MTS30C	11470.1
TSP	11470.1
VGT	11470.9

SIMPSON Strong-Tie®

SIMPSON STRONG-TIE COMPANY, INC

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Evaluation reports are the opinion of the engineer who prepared the report, based on the findings, and in no way constitute or imply approval by a local building authority. The engineer, in review of the data submitted, finds that, in his opinion, the product, material, system, or method of construction specifically identified in this report conforms with or is a suitable alternate to that specified in the Florida Building Code, SUBJECT TO THE LIMITATIONS IN THIS REPORT

Jeffrey P. Arneson, an employee of Jax Apex Technology, Inc. (Apex Technology), is the authorized evaluating engineer of this report. Apex Technology is the prime professional, as defined in Florida Rule 61G-30.002, authorized to sell the engineering services performed by Jeffrey P. Arneson, and is in no way acting, nor attempting to act, as an approved evaluation entity. Neither Jeffrey P. Arneson, nor any other employee of Apex Technology, has performed calculations or testing for the products listed in this report. This evaluation is based solely upon the review, under the direct supervision of Jeffrey P. Arneson, of testing and/or calculations submitted by the manufacturer.

The capacities listed in this report are based on the limiting capacities as determined from the substantiating data. We reviewed the substantiating data to a degree that allowed us to determine whether or not the work performed is consistent with the intended use of the product, and that the methods used are in compliance with, or meet the intent of, the Florida Building Code. All test reports were prepared by an approved testing laboratory.

REPORT NO.: SIM200803

CATEGORY: Structural Components
SUB CATEGORY: Metal Connectors

SUBMITTED BY:

SIMPSON STRONG-TIE COMPANY, INC.
5956 W. LAS POSITAS BOULEVARD
PLEASANTON, CA 94588

1. CERTIFICATION OF INDEPENDENCE:

Jeffrey P. Arneson, the Florida engineer who prepared this report, and Apex Technology have no financial interest in the manufacturing, sales, or distribution of the products included in this report. Jeffrey P. Arneson and Apex Technology comply with all criteria as stated in Florida Administrative Code Chapter 9B-72.110.

2. PRODUCT NAME

Truss to Wall Connectors
H8, MTS24C, MTS28C, MTS30C, H16, H16S, H16-2, H16-2S, HGA10

Girder Tiedowns
LGT2, LGT3-SDS2.5, LGT4-SDS3, MGT, VGT, VGTR, VGTL
Strap Ties
HRS6, HRS8, HRS12
Pre-bent Strap Ties
MSTC48B3, MSTC66B3
Stud to Plate Tie
TSP
Drag Strut Connector
DSCR-SDS3, DSRL-SDS3

3. SCOPE OF EVALUATION

Load Evaluation as a Structural Component using the requirements of the *Florida Building Code*

4. DESCRIPTION:

4.1 H8 Hurricane Tie. The H8 is used to anchor wood trusses or rafters to wood top plates, wood top plates to studs, and studs to bottom plates. They can be used to resist uplift loads from wind or other loading. It is installed with 10-10d×1½" nails. The H8 is manufactured from 18 ga. steel meeting ASTM A-653 SS Grade 40. It is coated with a G90 galvanized finish. Allowable loads and fasteners are shown in Table 1. See Figure 1 for additional details.

4.2 MTS24C, MTS28C, and MTS30C Twist Strap. These Twist Straps are used to anchor wood trusses or rafters to wood top plates, wood top plates to studs, and other applications requiring uplift anchorage. They can be used to resist uplift from wind or other loading. The C denotes that the twist is in the center of the strap. They are installed with either 14-10d common nails or 14-10d×1½" nails. The MTS24C, MTS28C, and MTS30C are manufactured from 16 ga. steel meeting ASTM A-653 SS Grade 33. They are coated with a G90 galvanized finish. Allowable loads and fastener schedule are shown in Table 1. See Figure 1 for additional details.

4.3 H16 , H16S, H16-2, H16-2S Hurricane Tie. The H16, H16S, H16-2, and H16-2S are used to anchor wood trusses or rafters to wood top plates. The H16 and H16-2 can also be used to anchor wood trusses to masonry or concrete walls. These connectors wrap over the top of the rafter or truss. For wood wall applications, the straps are then wrapped under the top plate and nailed to the face of the top plate with 4-10d×1½"nails and to the bottom of the top plate with 6-10d×1½" nails. For masonry or concrete wall applications, the straps are fastened to a masonry wall with ¼×2¼" Titen Masonry Screws, or a concrete wall with ¼×1¾" Titen Masonry Screws. These connectors are manufactured from 18 ga. steel meeting ASTM A-653 SS Grade 40. They are coated with a G90 galvanized finish. Allowable loads and fastener schedule are shown in Table 1 for wood framing and Table 2 for masonry walls. See Figures 2 and 3 for additional details.

4.4 HGA10 Heavy Gusset Angle. The HGA10 is used to anchor wood trusses, rafters, or beams to wood walls. The HGA10 fastens to the truss, rafter, or beam with Simpson ¼ X 1½" SDS screws (provided with the part), and fastens to the wall with Simpson ¼ X 3" SDS screws (provided with the part). Allowable loads are shown in Table 1. The HGA10 is manufactured from 14 ga. steel meeting ASTM A-653 SS Grade 33. It is coated with a G90 galvanized finish. Allowable loads and fastener schedule are shown in Table 1. See Figure 2 for additional details.

4.5 LGT2 Light Girder Tiedown. The LGT2 is used to anchor a two-ply wood truss or beam (3" wide) to a wood or masonry wall. The LGT2 fastens to the wood truss or beam with 16-16d sinker nails. It attaches to wood studs beneath with 14-16d sinker nails, to a masonry wall beneath with 7-¼×2¼" Titen Masonry Screws, or to a concrete wall beneath with 7-¼×1¾" Titen Masonry Screws. The LGT2 is manufactured from 14 gauge steel meeting ASTM A-653 SS Grade 50, Class 1. It is coated with a G90 galvanized finish. Allowable loads and fastener schedule are shown in Table 3. See Figure 4 for additional details.

4.6 LGT3-SDS2.5 Truss/Girder Tiedown: The LGT3-SDS2.5 is used to anchor a three-ply wood truss or beam (maximum 5" wide) to a wood or masonry wall. The LGT3-SDS2.5 fastens to the wood truss or beam with Simpson Strong-Tie SDS screws. It attaches to wood studs with 16d sinker nails or to a masonry or concrete wall with four 3/8 x 5 Titen HD Screws. The LGT3-SDS2.5 tiedown is formed from No. 12 gage [0.099 inch] ASTM A653 Grade 40 steel, with minimum yield and tensile strengths of 40 and 55 ksi, respectively. The finish is G90 galvanized. Allowable loads and fastener schedule are shown in Table 3. See Figure 5 for additional details.

4.7 LGT4-SDS3 Truss/Girder Tiedown: The LGT4-SDS3 girder tiedown is used to anchor a four-ply wood truss or beam (maximum 6½" wide) to a wood wall. The LGT4-SDS3 fastens to the wood truss or beam with Simpson Strong-Tie SDS screws. It attaches to wood studs with 16d sinker nails. The LGT4-SDS3 tiedown is formed from No. 12 gage (0.099 inch) ASTM A653 Structural Quality Grade 40 steel, with minimum yield and tensile strengths of 40 and 55 ksi, respectively. The finish is G90 galvanized. Allowable loads and fastener schedule are shown in Table 3. See Figure 5 for additional details.

4.8 MGT Medium Girder Tiedown. The MGT is used to anchor a multiple-ply wood truss or beam (3" minimum width) to a wood or masonry wall. The MGT fastens to the wood truss or beam with 22-10d common nails. A minimum of six nails must be into the face of the truss adjacent to the MGT. A minimum of four nails must be into the top of the truss. The base of the MGT attaches to a single ⅝" diameter anchor bolt or rod. For masonry construction, this ⅝" anchor must be designed by the building designer to provide at least as much anchorage as is required of the MGT. For wood frame construction, this ⅝" anchor may be a length of all thread rod that is attached to an anchor fastened to the studs beneath the girder. This anchor must provide at least as much anchorage as is required of the MGT. For example, a Simpson Strong-Tie PHD5 Holdown attached to multiple studs below of at least Spruce-Pine-Fir lumber will provide anchorage equivalent to the anchorage of the MGT to the truss. The stud to which the anchor is attached must be anchored to the foundation in such a manner as to transfer this uplift to the foundation. The MGT is manufactured from 12 gauge steel meeting ASTM A-653 SS Grade 50, Class 1, coated with a G90 galvanized finish. The washer in the seat is ⅜" plate steel that meets the provisions of ASTM A36. Allowable loads and fastener schedule are shown in Table 3. See Figure 6 for additional details.

4.9 VGT Variable Girder Tiedown. The VGT girder tiedown is used to anchor a milti-ply wood truss or beam (minimum 3" wide) to a wood or masonry wall. The VGT fastens to the wood truss or beam with Simpson Strong-Tie SDS Strong-Drive Screws. It then fastens to a threaded rod or anchor bolt. The rod can be fastened to a connector mounted to framing below the girder. The anchor bolt can be anchored to a concrete or masonry wall that is designed by the building designer to resist the high concentrated uplift load at that location. The VGT can be installed singly or in pairs for higher uplift resistance. The crescent washer

allows the VGT to be installed at an angle from 3:12 to 8:12. If the VGT is installed on a member sloped less than or greater than that amount, the VGT must be rotated so that it is sloped between 3:12 and 8:12. The VGTR and VGTL have one of the side flanges concealed so they can be placed at the end of a truss or beam. The VGT is formed from No. 7 gage [0.099 inch] ASTM A653 SS Grade 33 steel, with minimum yield and tensile strengths of 33 and 45 ksi, respectively. Allowable loads and fastener schedule are shown in Table 3. See Figure 6 for additional details.

4.10 HRS Heavy Strap Tie. The HRS Strap Tie models are straps used to provide a tension connection between two wood members. The HRS6, 8, and 12 are 1⅜" wide and are installed with 10d common nails. The straps are manufactured from 12 ga. steel meeting ASTM A-653 SS Grade 33, with minimum yield and tensile strengths of 33 and 45 ksi, respectively. They are coated with a G90 galvanized finish. Allowable loads and fastener schedule are shown in Table 4. See Figure 8 for additional details.

4.11 MSTCB3 Pre-bent Strap Tie. The MSTC48B3 and MSTC66B3 Pre-bent Strap Ties are designed to transfer a heavy tension load from framing on an upper story wall to a beam or header on the story below. For example, this could be from shearwall overturning or a large girder truss uplift load. They are installed with 10d common nails, with a minimum of four nails in the bottom of the beam or header. The straps are manufactured from 14 ga. steel meeting ASTM A-653 SS Grade 50, Class 1. They are coated with a G90 galvanized finish. Allowable loads and fastener schedule are shown in Table 5. See Figure 9 for additional details.

4.12 TSP Stud to Plate Connector. The TSP is used to connect a stud to either double top plates or a single sill plate. The TSP twists to attach to the side of the stud to reduce interference with sheathing, drywall, and trim nailing. The TSP has a short flange on it that installs either over the top of the top plates or hooked under the sill plate. For sill plate application, fill all round holes. For top plate application, fill all round and triangle shaped holes. The TSP is installed with either 10d×1½" or full-length 10d common nails. The TSP is formed from No. 16 gage (0.057 inch) ASTM A653 SS Grade 40 steel, with minimum yield and tensile strengths of 40 and 55 ksi , respectively. The galvanized coating complies with the G90 requirements of ASTM A653. Allowable loads and fastener schedule are shown in Table 6. See Figure 10 for additional details.

4.13 DSC2R and DSC2L Drag Strut Connector. The DSC2 Drag Strut Connector transfers diaphragm shear forces from drag struts, such as drag trusses, to the shear walls. The R and L suffix refers to right or left hand bend to accommodate different layout configurations. The DSC2 fastens to the drag strut and wood top plate with Simpson Strong-Tie SDS Strong-Drive Screws, which are included. The SDS screws are installed best with a low-speed ½" drill and a ⅜" hex head driver. Predrilling holes for SDS screws is not required. The DSC2 is formed from No. 7 gage (0.173 inch) ASTM A653 Structural Quality Grade 33 steel, with minimum yield and tensile strengths of 33 and 45 ksi, respectively. The galvanized coating complies with the G90 requirements of ASTM A653. Allowable loads and fastener schedules are shown in Table 7. See Figure 11 for additional details.

5. MATERIALS

5.1 Steel. Steel specifications for each product listed in this evaluation report shall be as indicated in the previous section.

5.2 Wood. Wood members to which these connectors are fastened shall be solid sawn lumber, glued-laminated lumber, or structural composite lumber having dimensions consistent with the connector dimensions shown in Tables1 through 4. Unless otherwise noted, lumber shall be Southern Pine or Douglas Fir-Larch having a minimum specific gravity of 0.50. Where indicated by SPF, lumber shall be Spruce-Pine-Fir having a minimum specific gravity of 0.42.

5.3 Nails and Bolts. Unless noted otherwise, nails shall be common nails. Nails shall comply with ASTM F 1667 and shall have the minimum bending yield strengths F_{yb}:

Common Nail Pennyweight	Nail Shank Diameter (inch)	F_{yb} (psi)
10d	0.148	90,000
16d	0.162	90,000

Fasteners for galvanized connectors in pressure-preservative treated wood shall be hot-dipped zinc coated galvanized steel. Fasteners for stainless steel connectors shall be stainless steel.

5.4 Concrete/Masonry. Concrete and Masonry design specifications shall be the stricter of the specifications by the engineer of record, the Florida Building Code minimum standards, or the following:

Material	Specification	Minimum Compressive Strength
Concrete, f'c	-	2500 psi
Masonry, f'm	ASTM E447	1500 psi
Masonry Unit	ASTM C90	1900 psi
Mortar	ASTM C270 Type S	1800 psi (or by proportions)
Grout	ASTM C476	2000 psi (or by proportions)

6. INSTALLATION

Installation shall be in accordance with this report and the most recent edition of the Simpson Strong-Tie *Wood Construction Connectors* catalog. The Information in this report supersedes any conflicting information between information provided in this report and the catalogue.

7. SUBSTANTIATING DATA

Test data submitted by Testing Engineers Inc. and Product Testing, Inc., and signed and sealed calculations performed by Jeremy Gilstrap,P.E., performed in accordance with the 2007 Florida and Residential Building Codes.

Product	Test Number	Date Tested
H8 Uplift	H204, H220	5-6-99, 5-13-99
MTSC Uplift	B845	1-30-90
H16 Uplift	I376, H591	9-24-01, 3-3-00
H16-2 Uplift	I830, H591	3-19-02, 3-3-00
HGA10 Uplift	H062	1-12-99
HGA10 F1 Direction	H042	12-29-98
HGA10 F2 Direction	H043	12-29-98
LGT2 Uplift	H429, I839, K411	11-11-99, 1-29-02, 6-30-04
LGT2 F1 Direction	L921	10-18-05
LGT2 F2 Direction	L922	10-18-05

LGT3 Uplift	L431	6-9-05
LGT3 F1 Direction	L233	5-20-05
LGT3 F2 Direction	L234	5-20-05
LGT4 Uplift	O113, ?	7-5-07, ?
LGT4 F1 Direction	O393	10-29-07
LGT4 F2 Direction	O394	10-1-07
MGT Uplift	I134	5-9-01
VGT, VGTR/L Uplift	M985, M988, M999, M990, M991, N075, M989, N142, N149	8/11/2006, 8/11/2006, 8/16/2006, 8/22/2006, 8/22/2006, 8/29/2006, 8/30/2006, 9/12/2006, 9/15/2006
MSTC48B3 Tension	J367, J583	6-4-03, 11-19-03
MSTC66B3 Tension	J368	6-24-03
TSP Uplift	M481, M950, M812, M817, M202, N056, N074	4/19/2006, 5/24/2006, 8/10/2006, 8/15/2006, 8/18/2006, 8/23/2006
DSC2R/L Tension	FROM SIM200801	
DSC2R/L Compression	FROM SIM200801	

8. FINDINGS

Upon review of the data submitted by Simpson Strong-Tie, it is my opinion that the models as described in this report conform with or are a suitable alternative to the standards and sections in the 2007 Florida Building and Residential code editions listed in section 10 of this report, subject to the limitations below. Maximum allowable loads shall not exceed the allowable loads listed in this report.

9. LIMITATIONS:

1. Maximum allowable loads shall not exceed the allowable loads listed in this report. Allowable loads listed in this report are based on allowable stress design. The loads in this report are not applicable to Load and Resistance Factor Design.
2. Capacity of wood members is not covered by this report. Capacity of wood members must be checked by the building designer.
3. The anchorage of the MGT and VGT to masonry or concrete wall is not covered by this report. Anchorage must be designed by the building designer.
4. Allowable loads for more than one direction for a single connection cannot be added together. A design load that can be divided into components in the directions given must be evaluated as follows:

   Design Uplift/Allowable Uplift + Design Lateral Parallel to Plate/Allowable Lateral Parallel to Plate + Design Lateral Perp. to Plate/Allowable Lateral Perp. to Plate < 1.0

10. CODE REFERENCES

Florida Building Code, Building 2007 Edition

Section 104.11	Alternate Materials and Methods
Chapter 1714.2	Load Test Procedure Specified
Chapter 21	Masonry
Chapter 22	Steel
Chapter 23	Wood

Florida Building Code, Residential 2007 Edition

R101.2.1	Scope
R4407	HVHZ Masonry
R4408	HVHZ Steel
R4409	HVHZ Wood

11. ALLOWABLE LOADS:

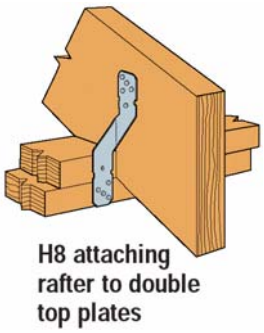
The tables that follow reference the allowable loads for the aforementioned products.

TABLE 1 ALLOWABLE UPLIFT LOADS FOR TRUSS/RAFTER TO WOOD WALL CONNECTORS

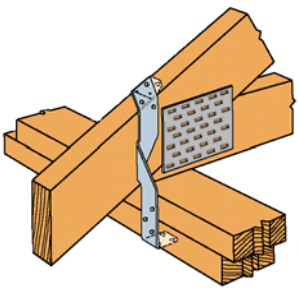
Model No.	Ga.	Fasteners			Allowable Uplift Loads (160)	
		To Trusses/ Rafters	To Plates	To Studs	Southern Pine/ Douglas Fir-Larch	Spruce-Pine-Fir
H8	18	5–10d×1½	5–10d×1½	-	795	565
H8[4]	18	-	5–10d×1½	5–10d×1½	795	565
MTS24C[5]	16	7-10d×1½	7-10d×1½	-	1000	860
MTS28C[5]	16	7-10d×1½	7-10d×1½	-	1000	860
MTS30C[5]	16	7-10d×1½	7-10d×1½	-	1000	860
H16[6]	18	2–10d×1½	10–10d×1½	-	1400	1205
H16S[6]	18	2–10d×1½	10–10d×1½	-	1400	1205
H16-2[6]	18	2–10d×1½	10–10d×1½	-	1325	1140
H16-2S[6]	18	2–10d×1½	10–10d×1½	-	1325	1140
HGA10[7]	14	4-SDS¼X1½	4-SDS¼X3	-	435	375

Notes:

1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.
2. Allowable loads are for one anchor. A minimum rafter thickness of 2½" is required when H8 connectors are installed on each side of the truss and on the same side of the plate.
3. Hurricane ties are shown installed on the inside of the wall for clarity. Installation on the outside of the wall is acceptable. For installation of H16 series on the outside of the wall, a minimum 15/32" wood structural panel sheathing with 1-8d nail between straps to top plate is required. For a continuous load path, truss to top plate and top plate to stud connections must be on the same side of the wall.
4. H8 will achieve 310 pounds uplift when connecting a stud to a single bottom plate. Install 5–10d×1½" nails to stud and 4–10d×1½" nails to bottom plate.
5. MTS24C, MTS28C, MTS30C can be attached directly to the studs provided the (7) nails are attached to the stud and not split over the stud and the top plate.
6. H16 is pre-sloped at a 5:12 pitch and can be used on pitches from 3:12 to 7:12. Minimum heel height for H16 series is 4"
7. HGA10 allowable F1 load (160) shall be 1165 lbs (DFL/SYP) & 775 lbs (SFP) , and allowable F2 load (160) shall be 940 lbs (DFL/SYP) & 815 lbs (SPF).



H8 attaching rafter to double top plates



Typical installation of MTSC connecting truss to top plate

Figure 1
H8 and MTSC Typical Installation

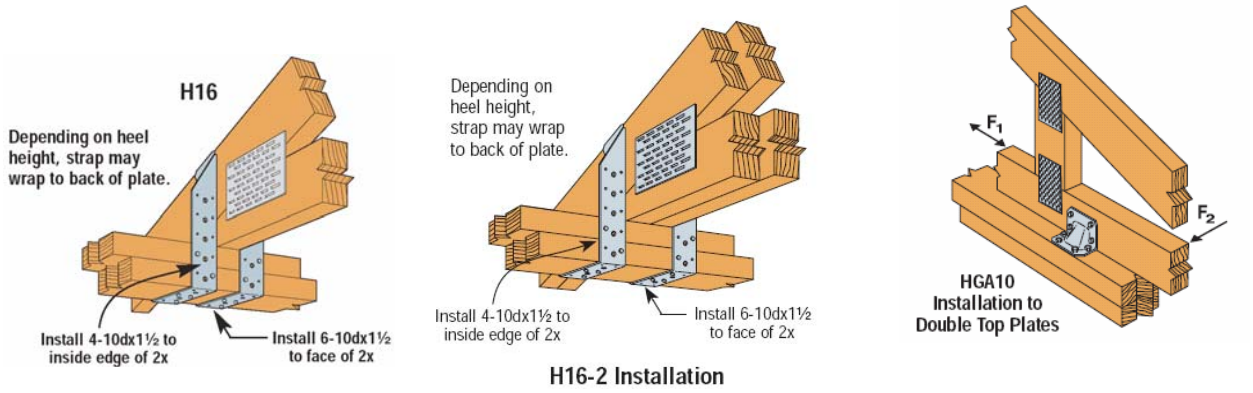


Figure 2
H16, H16-2, and HGA10 Typical Installation

TABLE 2 ALLOWABLE UPLIFT LOADS FOR TRUSS TO MASONRY OR CONCRETE WALL CONNECTORS							
Model No.	Ga	Length (in.)	Fasteners			Allowable Uplift Loads (160)	
			Truss/Rafter	CMU (Titen)	Concrete (Titen)	Southern Pine/ Douglas Fir-Larch	Spruce-Pine-Fir
H16	18	18¾	2-10d×1½	6-¼×2¼	6-¼×1¾	1470	1265
H16-2	18	18¾	2-10d×1½	6-¼×2¼	6-¼×1¾	1470	1265

Notes:
1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.

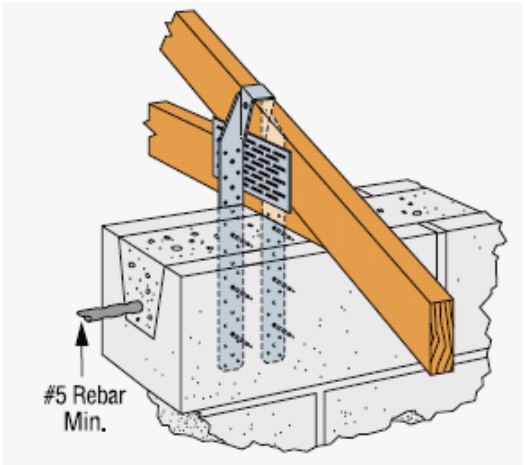


Figure 3
H16 Typical Installation to Masonry Wall

TABLE 3 ALLOWABLE LOADS FOR GIRDER CONNECTORS										
Model No.	Qty.	No. of Plies	Fasteners				Allowable Uplift Loads (160)		Allowable Lateral Loads (160)	
			Girder	Wood Studs or Framing	CMU	Concrete	DF/SP	SPF	F1	F2
LGT2 (Wood)	1	2	16-16d Sinker	14-16d Sinkers	-	-	2050	1785	700[4]	170[4]
LGT2 (Masonry)	1	2	16-16d Sinker	-	7-¼×2¼ Titen Screw	7-¼×1¾ Titen Screw	2150	1850	700[4]	170[4]
LGT3-SDS2.5 (Wood)	1	3	12-SDS¼×2½	21-16d Sinkers	-	-	3685	2655	795	410
LGT3-SDS2.5 (Masonry)	1	3	12-SDS¼×2½	-	4 - ⅜"×5" Titen HD	4 - ⅜"×5" Titen HD	3285	2365	795	410
LGT4-SDS3 (Wood)	1	4	16-SDS¼×3	30-16d Sinkers	-	-	4060	2925	2000[5]	675[5]
LGT4-SDS3 (Masonry)	1	4	16-SDS¼×3		4 - ⅜"×5" Titen HD	4 - ⅜"×5" Titen HD	3285	2365	-	-
MGT (Wood)	1	2(min)	22-10d	1-⅝" anchor	-	-	3965	3275	-	-
MGT (Masonry)	1	2(min)	22-10d	-	1-⅝" anchor	1-⅝" anchor	3965	3275	-	-
VGT	1	2(min)	16-SDS¼×3	-	1-⅝" anchor	1-⅝" anchor	4940	3555	-	-
	2	2(min)	32-SDS¼×3	-	2-⅝" anchors	2-⅝" anchors	7185	5175	-	-
		3(min)	32-SDS¼×3	-	2-⅝" anchors	2-⅝" anchors	8890	6400	-	-
VGTL or VGTR	1	2(min)	16-SDS¼×3	-	1-⅝" anchor	1-⅝" anchor	2230	1605	-	-
	2	2(min)	32-SDS¼×3	-	2-⅝" anchors	2-⅝" anchors	5545	3990	-	-

Notes:

1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.
2. Attached members must be designed to resist applied loads.
3. For MGT and VGT application to wood framed wall, provide equivalent anchorage to wood framing to provide resistance to applied load on the MGT or VGT. Provide continuous load path to the foundation. For MGT or VGT application to masonry/concrete wall, provide ⅝" anchor designed by building designer to provide resistance to applied load on the MGT or VGT. Provide continuous load path to foundation.
4. LGT2 lateral loads require installation of optional 4-16d sinkers in triangle fastener holes into top plates.
5. LGT4 lateral loads require installation of optional 7-16d sinkers in triangle fastener holes into top plates.

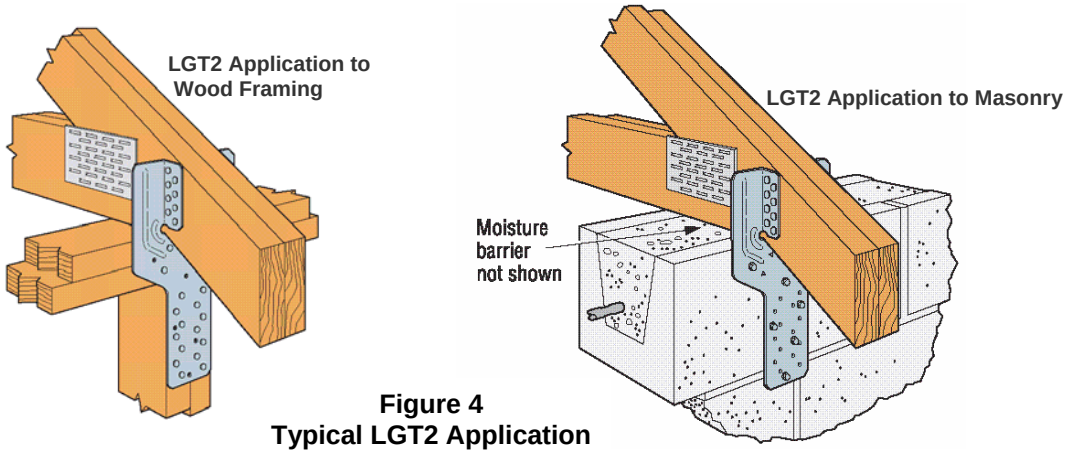


Figure 4
Typical LGT2 Application

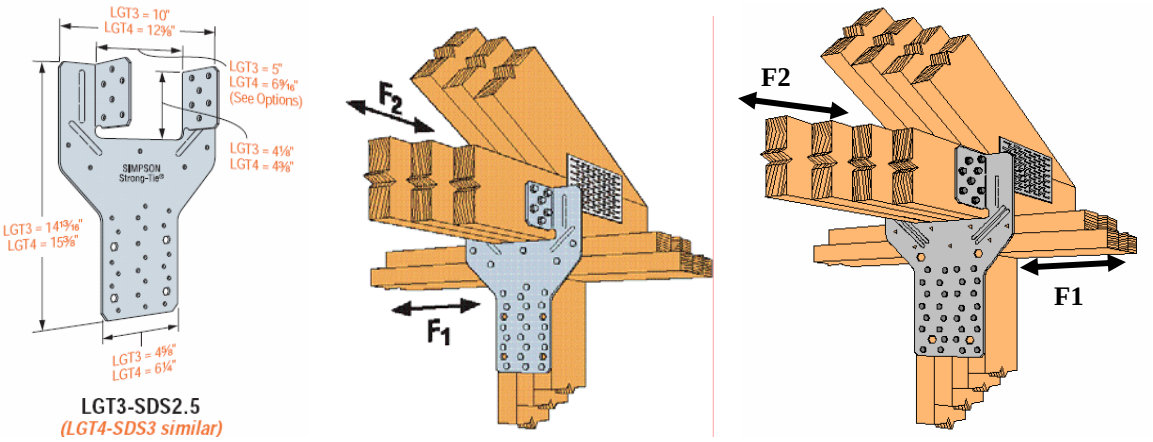


Figure 5
Typical LGT3 and LGT4 Application

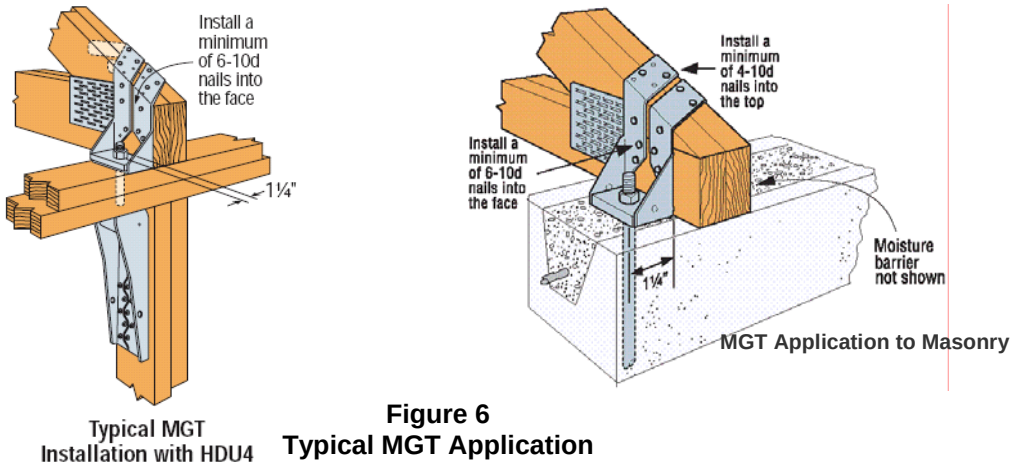


Figure 6
Typical MGT Application

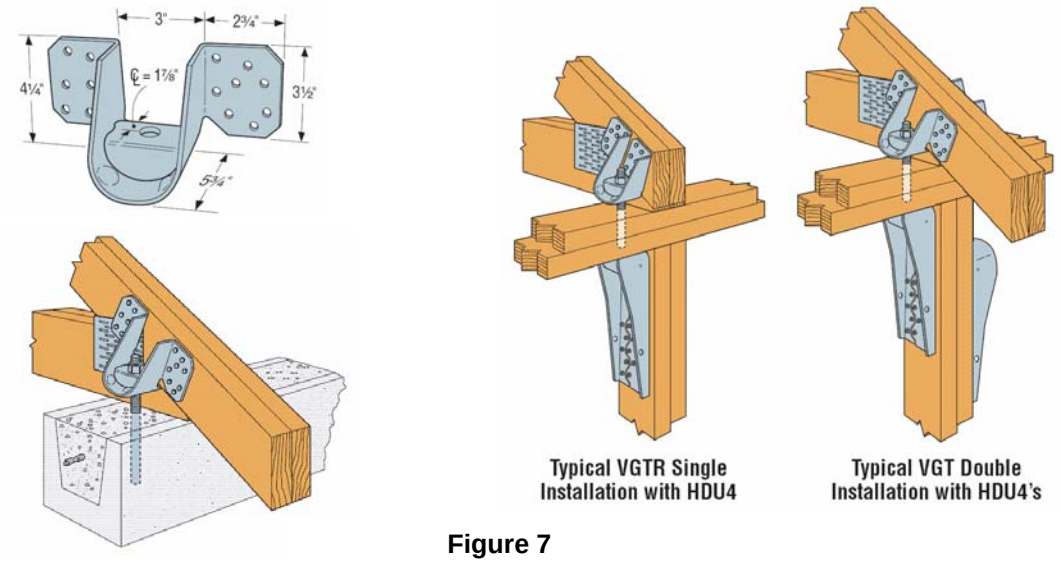


Figure 7
Typical VGT/VGTR Application

TABLE 4 HRS ALLOWABLE TENSION LOADS				
Model No.	Ga	Nails	Allowable Load (160)	
			DF/SP	SPF
HRS6	12	6-10d	605	525
HRS8	12	10-10d	1010	880
HRS12	12	14-10d	1415	1230

Notes

1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.
2. Install half the nails in each end of the strap.

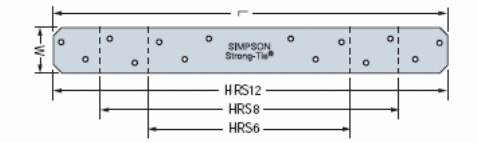


Figure 8
Typical HRS Strap

TABLE 5 MSTCB ALLOWABLE UPLIFT/TENSION LOADS							
Model No.	Beam Minimum Dimensions		Fasteners			Allowable Tension Loads (160)	
			Beam		Studs/ Post		
	Width	Depth	Face	Bottom		DF/SP	SPF
MSTC48B3	3"	9¼"	12-10d	4-10d	38-10d	3930	3380
MSTC66B3	3½"	11¼"	14-10d			4440	3820

Notes:

1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.
2. Using fewer than 38 nails in the studs/post will reduce the capacity of the connection. To calculate a reduced capacity use 129 lbs. per nail for DFL/SP or 112 lbs. per nail for SPF
3. Nails in studs/post shall be installed symmetrically. Nails may be installed over the entire length of the strap over the studs/post.
4. The 3" wide beam may be double 2-by members.
5. MSTC48B3 and MSTC66B3 installed over sheathing up to ½" thick will achieve 0.85 of the table loads.

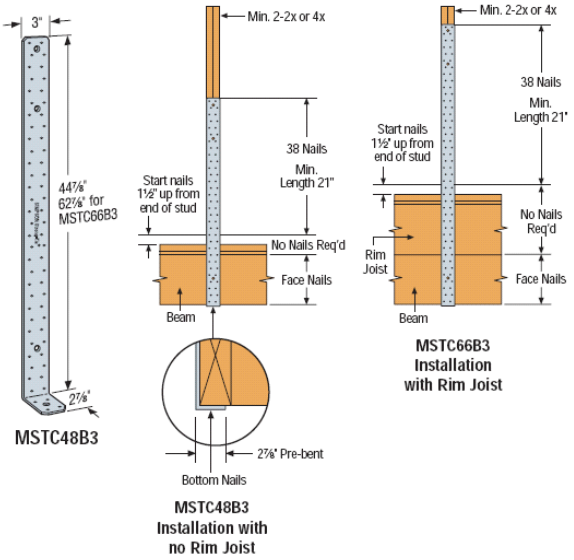


Figure 9
Typical MSTCB Application

TABLE 6 TSP ALLOWABLE LOADS, FASTENERS, AND DIMENSIONS									
Model No.	Dim.		Plate Location	Fasteners		Allowable Uplift Loads (160)			
	W	L		Studs	Top or Sill Plate	Double Top Plate		Single Sill Plate	
						DF/SP	SPF	DF/SP	SPF
TSP	1½	7⅛	Double Top Plate	9 –10d×1½"	6 –10d×1½"	755	650	-	-
					6 – 10d	1015	870		
			Single Sill Plate	6 –10d×1½"	3 –10d×1½"	-	-	395[4]	345
					3 – 10d			395[4]	370

Notes:
1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.
2. TSP connectors achieve different loads depending on whether full length nails or 1½" long nails are used, and whether connector is used to fasten stud to top plates or sill plate.
3. When cross grain bending or cross grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered. Large plate washers on anchor bolts can serve this purpose.
4. TSP Southern Pine stud to Southern Pine sill plate, 585 lbs. uplift. TSP SPF stud to Southern Pine sill plate, 450 lbs. uplift.

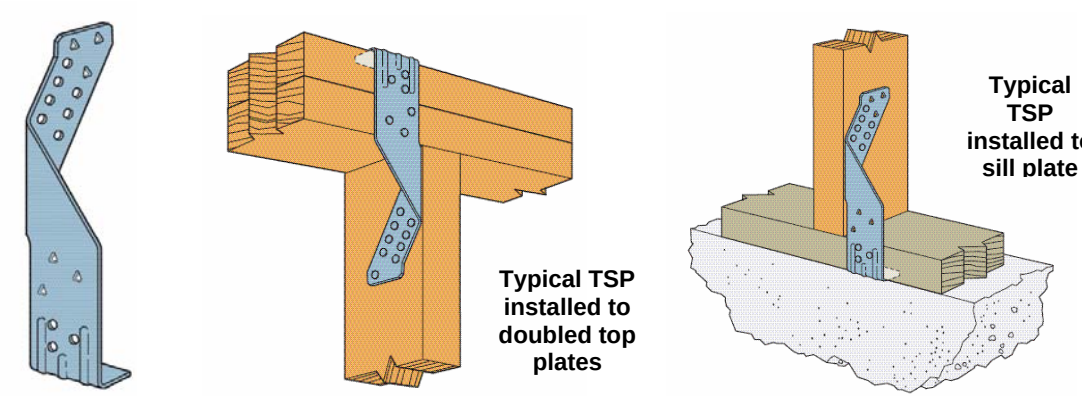


Figure 10
Typical TSB Application

TABLE 7 – DSC2R AND DSC2L DIMENSIONS, FASTENERS AND ALLOWABLE LOADS						
Model No.	L (in.)	Fasteners	DF/SP Allowable Loads		SPF Allowable Loads	
			Compression (160)	Tension (160)	Compression (160)	Tension (160)
DSC2R-SDS3 DSC2L-SDS3	16	20-SDS ¼"×3"	2590	3720	1865	2680

Notes:
1. Loads include an increase of 60% for wind loading where permitted by the code for fasteners in wood. Loads do not include a stress increase on the strength of the steel. No further increases are permitted. Reduce loads where other loads govern.
2. SDS screws minimum penetration is 2¾", minimum end distance is 2½" and minimum edge distance is ⅝" for full load values.
3. Lag screws will not achieve table loads.
4. Strong-Drive® screws are permitted to be installed through metal truss plates as approved by the Truss Designer, provided the requirements of ANSI/TPI 1-2002 Section 8.10 are met *(pre-drilling required through the plate using a maximum of 5/32" bit.)*

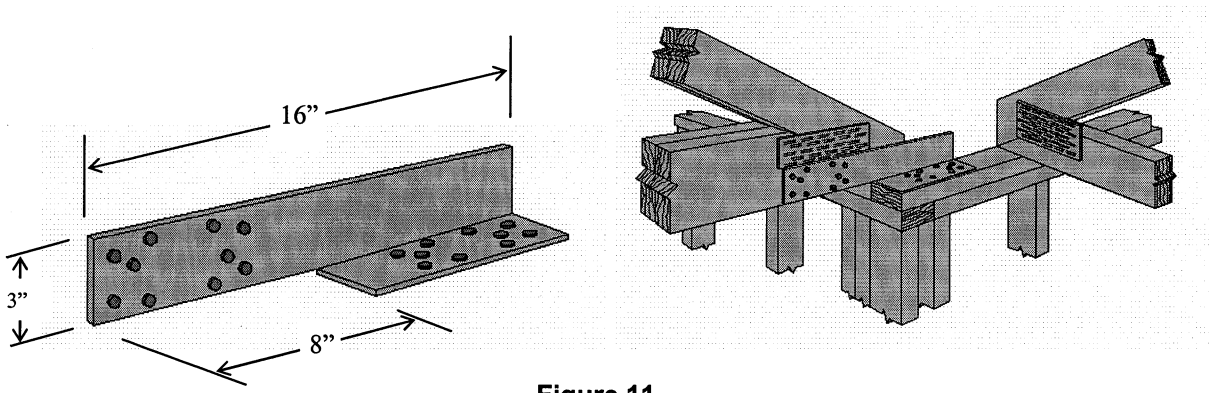
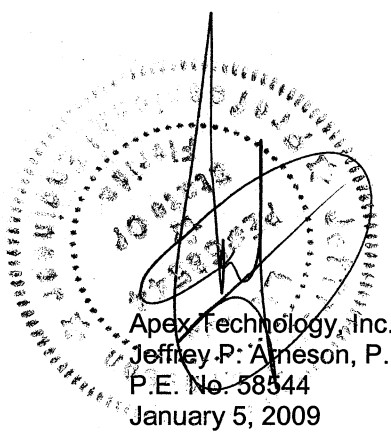


Figure 11
Typical DSC2 Application

12. IDENTIFICATION

Each connector covered by this report shall be stamped with the manufacturer's name and/or trademark and the product name.



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January 5, 2009