The S/PHD holdowns are high performance ductile holdowns used for providing a tension connection between CFS framing members and the foundation or other structural members. The pre-deflected design keeps deflection low. The S/PHD holdowns attach with #14 self-drilling screws making installation an ease, saving time and labor.

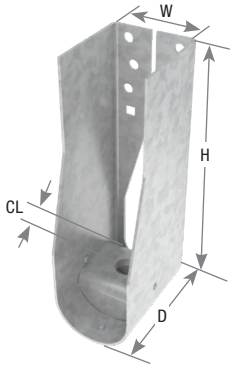
Materials: S/PHD4, S/PHD6 – 14 gauge; S/PHD9 – 12 gauge
Finish: G90 galvanizing
Codes: IBC

Installation:

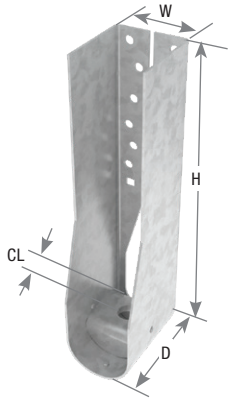
- Use all specified fasteners.
- Place the S/PHD over the anchor bolt. No washer is required.
- Install with standard #14 self-drilling (tapping) screws to fasten to CFS framing members.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with a wrench.
- S/PHD Holdowns installed elevated more than 4" off the base track may have higher deflection values.
- The design engineer may specify any alternate anchorage calculated to resist the tension load for a specific application. Anchor rod exposure length should take the bearing plate height of 1-5/8" into account, anchor bolt thread should visibly extend above nut.
- The built up studs shall be designed to act as a single unit. Holdown specified shall not be considered to attach multiple CFS members together.
- For anchorage options see MiTek's STB/ STBL Anchor Bolt series or ATR threaded rod series products epoxied into place at required depth.

Typical S/PHD installation

Typical S/PHD Corner installation



S/PHD4



S/PHD6

MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in) W	H	D	CL	Fastener Schedule Min/ Max	Anchor Bolt[1] Qty	Anchor Bolt[1] Dia (in)	Stud Qty	Stud Type[3]	Metal Stud Member Mils (Gauge)[4]	ASD Tension Load (lbs.)	ASD Deflection (in)	LRFD Tension Load (lbs.)	LRFD Deflection (in)	Code Ref.
S/PHD4	S/HDU4	14	2-3/8	7-3/4	3-1/4	1-3/8	Min	1	5/8	6	#14	2-33 (20Ga)	2255	0.080	3605	0.118	IBC
												2-43 (18Ga)	**3165**	**0.104**	**5070**	**0.149**	
												2-54 (16Ga)	**3955**	**0.132**	**6330**	**0.188**	
							Max	1	5/8	8	#14	2-33 (20Ga)	2960	0.088	4740	0.133	
												2-43 (18Ga)	**4375**	0.076	**7000**	**0.132**	
												2-54 (16Ga)	**4595**	**0.122**	**7355**	**0.183**	
S/PHD6	S/HDU6	14	2-3/8	10-3/8	3-1/4	1-3/8	Min	1	5/8	12	#14	2-33 (20Ga)	**4880**	**0.100**	**7805**	**0.173**	
												2-43 (18Ga)	**5525**	**0.105**	**8840**	**0.161**	
												2-54 (16Ga)	**6670**	**0.108**	**10670**	**0.188**	
							Max	1	5/8	14	#14	2-33 (20Ga)	**5390**	**0.087**	**8620**	**0.166**	
												2-43 (18Ga)	**6315**	0.096	**10105**	**0.157**	
												2-54 (16Ga)	**6435**	**0.112**	**10300**	**0.183**	
S/PHD9	S/HDU9	12	2-3/8	12-3/4	3-1/4	1-3/8	--	1	7/8	18	#14	2-33 (20Ga)	6495	0.096	10390	0.154	
												2-43 (18Ga)	8875	0.112	14195	0.191	
												2-54 (16Ga)	**10345**	**0.099**	**16345**	**0.152**	

1) The designer must specify the anchor bolt type, length and embedment.
2) Deflections are derived from static, monotonic load tests of device connected to a 2-ply cold-formed steel stud and include fastener slip, holdown elongation and anchor bolt elongation (L = 4").
3) #14 screws are ITW Buildex 1/4-14 HWH Teks Structural Fasteners with a nominal diameter of 0.250". Self-drilling tapping screws with equivalent physical and strength properties may be used.
4) The designer must specify the metal stud size and mil thickness.
New products or updated product information are designated in **blue font**.

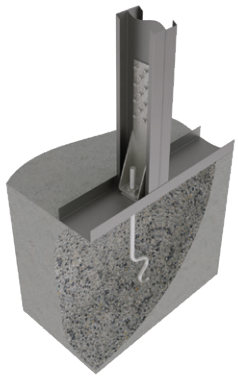
The **LTS20B** and the **HTT14S** tension ties are designed for both new construction and retrofit applications for concrete-to-steel connections and do not require an additional washer.

LTS20B is a light capacity tension tie strap with a 1/4" load transfer plate.

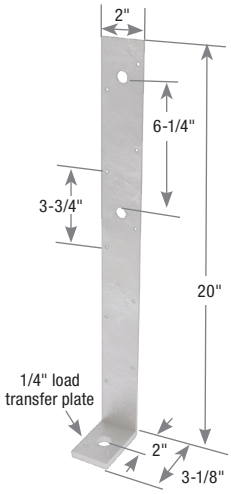
Materials: See chart
Finish: Strap – G90 galvanizing; Plate – Primer

Installation:

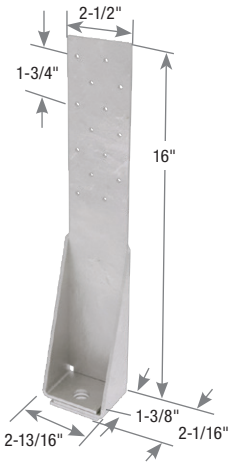
- Use all specified fasteners.
- Attach the strap portion of the connector to the steel stud. Secure the base to the foundation or wall with specified anchor bolt.
- A design professional shall specify the type, length, and embedment of the anchor bolt. No washers are required.



Typical HTT14S installation



LTS20B



HTT14S

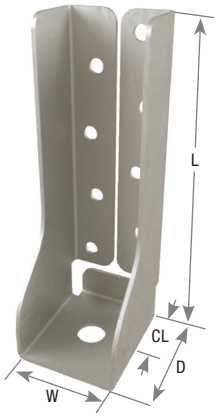
MiTek USP Stock No.	Ref. No.	Steel Thickness		Fastener Schedule				Allowable Tension Loads (Lbs.)[1,2,4]						Code Ref.
				To Sill Plate		To Stud		2-33 mil (2-20ga) Back-to-Back Studs		2-43 mil (2-18ga) Back-to-Back Studs		2-54 mil (2-16ga) Back-to-Back Studs		
				Anchor Bolt[3]		Screws[5]								
		Strap Gauge	Plate (in)	Qty	Dia. (in)	Qty	Type	100%	160%	100%	160%	100%	160%	
LTS20B	S/LTT20	12	1/4	1	3/4	5	#10	885	1140	1090	1090	1210	1210	--
HTT14S	S/HTT14	10	--	1	5/8	14	#10	2480	3290	3680	4425	4825	4825	

1) Back-to-back stud members are required unless otherwise noted.
2) Allowable loads at 160% can only be used with codes that permit the use of alternate basic load combinations and when the referenced materials standard permits it.
3) Designer shall specify anchor embedment and configuration.
4) Designer shall verify the adequacy of the steel studs to transfer the required load.
5) #10 screws are ITW Buildex 10-16 HWH Teks Structural Fasteners with a nominal diameter of 0.190". Self-drilling tapping screws with equivalent physical and strength properties may be used.

The DTB/S-TZ may be used to resist tension loads installed to CFS members.

Materials: 14 gauge
Finish: G-185 galvanizing

Installation:
- Use all specified fasteners.
- Install screws to attach DTB/S-TZ to framing member first.
- Install with MiTek's THR 1/2" threaded rod or equivalent.
- Tighten anchor bolt nuts finger tight to base plus 1/3 to 1/2 additional turns with wrench.



DTB/S-TZ

MiTek USP Stock No.	Ref. No.	Steel Gauge	Dimensions (in)				Fastener Schedule[5]				Minimum CFS Stud[6]	Allowable Tension Loads (Lbs.)[3,4]		Code Ref.
							Anchor Bolt [1]		Screws [2,7]					
			W	L	D	CL	Qty	Dia. (in)	Qty	Type		100%	160%	
DTB/S-TZ	S/DTT2Z	14	1-13/16	6	2-1/4	1-1/8	1	1/2	8	#14	18 Ga	1655	1655	--

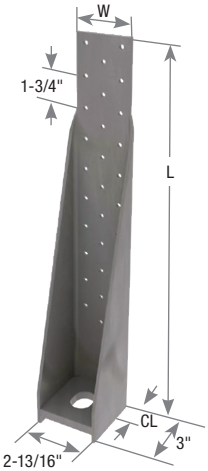
1) Use ASTM A307 bolt or threaded rod with cut washer and nut.
2) Designer shall specify steel-to-steel self-tapping screw with a minimum nominal shear strength 2,600 lbs.
3) Allowable loads include a 60% increase for wind or seismic load conditions. No further increase shall be permitted.
4) Allowable load values of the holdown (tie-down) device are a measure of the strength of the assembly with a safety factor of 3.0 applied to the lowest maximum test load.
5) Fasteners shall be specified and installed per manufacturer's specifications.
6) CFS stud must be a minimum 18 Ga and Grade 33.
7) #14 screws are ITW Buildex 1/4-14 HWH Teks Structural Fasteners with a nominal diameter of 0.250". Self-drilling tapping screws with equivalent physical and strength properties may be used.

The **TD8S, TD10S,** and **TD15S** are high capacity holdowns which are designed for attachment to cold formed steel (CFS) framing members. Holdowns are secured at the base by attachment to an anchor bolt.

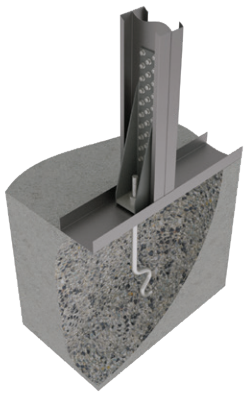
Materials: See chart
Finish: Primer

Installation:

- Use #10 self-tapping screws to attach the back or strap portion of the holdown to a steel stud. Install nut to secure the base of holdown to foundation with anchor bolt of specified diameter.
- A design professional shall specify the type, length, and embedment depth of the anchor bolt.
- Install anchor bolt nut to base of holdown until finger tight, then tighten an additional 1/3 to 1/2 turns with a wrench.



TD10S



Typical TD10S installation

MiTek USP Stock No.	Ref No.	Steel Thickness		Dimensions (in)			Fastener Schedule			CFS Member			ASD		LRFD		Nominal Tension Load[6] (in)	Code Ref.
							Anchor Bolt[2]	Stud Screws[4]		Stud[1,3]								
		Body	Base (in)	W	L	CL	Dia. (in)	Qty	Type	Plies	Mils	Gr	Tension (Lbs.)	Deflection[5] (in)	Tension (Lbs.)	Deflection[5] (in)		
TD8S	S/HD8S	10	3/8	2-1/2	13-7/8	1-5/8	7/8	24	#10	2	33	33	8250	0.074	13200	0.164	22325	
										2	43	33	10115	0.109	16350	0.242	27650	
										2	54	50	10900	0.091	17435	0.205	29485	
TD10S	S/HD10S	10	3/8	2-1/2	16-1/8	1-5/8	7/8	30	#10	2	33	33	8690	0.071	13900	0.159	24575	
										2	43	33	9310	0.076	14900	0.195	26335	--
										2	54	50	9985	0.058	15975	0.146	28235	
TD15S	S/HD15S	7	1/2	2-5/8	21-1/2	1-11/16	1	48	#10	2	33	33	11780	0.075	18845	0.146	33410	
										2	43	33	13770	0.100	22035	0.192	39065	
										2	54	50	15920	0.096	25475	0.144	45160	

1) Back-to-back stud members are required.
2) The designer must specify anchor bolt type, length, and embedment.
3) Designer shall verify the adequacy of the steel studs to transfer the required load.
4) #10 screws are ITW Buildex 10-16 HWH Teks Structural Fasteners with a nominal diameter of 0.190". Self-drilling tapping screws with equivalent physical and strength properties may be used.
5) Holdown deflection at ASD and LRFD static test load includes fastener slip, holdown deflection, and anchor bolt elongation.
6) The nominal tension load is based on the average of the ultimate tested values.