

ClarkDietrich Holdown (CD Series)

Secure and hold down shearwalls to the structure foundation.

ClarkDietrich holdowns provide cost-effective shearwall attachment and are used to transfer tension loads between floors or from structural members to the foundation. Two-piece welded construction comes in three sizes for optimal performance. Installation is made easy with prepunched holes.

ALTERNATIVE PRODUCTS

EasyClip™ T-Series™ Tall Anchor Clip

PRODUCT DIMENSIONS

CD8: 2-5/8" x 11"

CD10: 2-5/8" x 13-1/2"

CD15: 2-5/8" x 19"

MATERIAL SPECIFICATIONS

Gauge: 7 gauge (179 mils)

With 1/2" bearing plate

Steel Thickness: 0.1793 inches

ASTM: A36, A1011

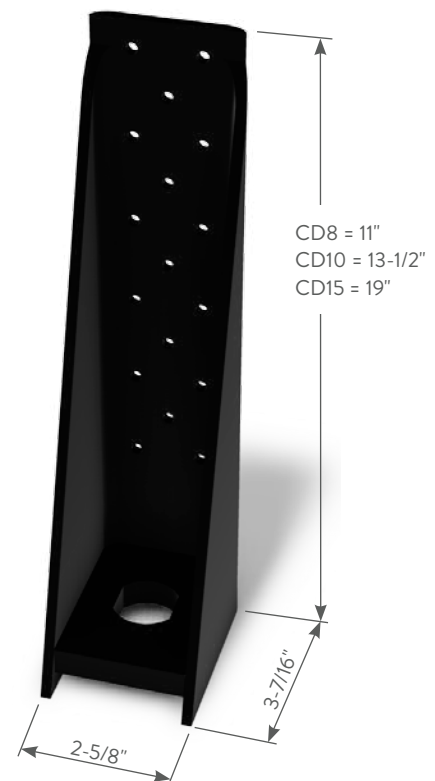
Reference section R603.9.4.2 of the International Residential Code (IRC) for holdown requirements in residential applications. Consult the engineer of record for commercial applications.

INSTALLATION

- Install the holdowns using anchor bolts or alternate anchorage calculated to resist the tension load for your specific application.
- Use steel nylon locking nuts or thread adhesive to minimize the chance of nut spin. Anchor bolt washer is not required.

INSTALLATION (CONTINUED)

- Secure the CD holdown to the steel framing member by filling all the prepunched holes with #14 screws to achieve listed capacities.
- Boundary members (back-to-back studs) shall be designed by a qualified professional. To tie back-to-back stud members together, the Designer must determine the fasteners required to bind members to act as one unit.
- CD holdowns can be welded per Designer's recommendation and specification.
- Welding procedures shall be qualified as specified in AWS D1.3.
- Welded connections used for cold-formed steel structural members in which the thickness of the thinnest connected part is 0.18 inch or less shall comply to AISI S100-2012 specification Section E2.



ClarkDietrich HOLDOWNS

Product code	Simpson reference	Thickness			Size (in)	Packaging
		Gauge	Mils	Design thickness (in)		
CD8	S/HD8S	7	179	0.188	2-5/8 x 11	Dependent on Order Quantity
CD10	S/HD10S	7	179	0.188	2-5/8 x 13-1/2	
CD15	S/HD15S	7	179	0.188	2-5/8 x 19	

ClarkDietrich CD8, CD10, CD15 HOLDDOWNS

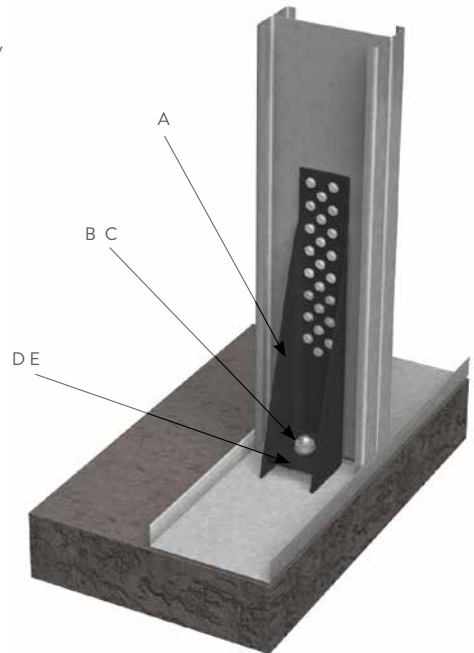
Product code	Height	Fasteners		Stud member thickness	ASD		LRFD		Nominal tension load (lbs)
		Anchor diameter	Stud fasteners		Tension load (lbs)	Deflection at ASD load	Tension load (lbs)	Deflection at LRFD load	
CD8	11"	7/8"	(17) #14	2-33mil (2-20ga)	6,962	0.080	11,139	0.119	20,885
				2-43mil (2-18ga)	8,164	0.070	13,062	0.124	24,492
				2-54mil (2-16ga)	11,253	0.083	18,005	0.126	33,759
				2-68mil (2-14ga)	12,240	0.095	19,585	0.135	36,721
				2-97mil (2-12ga)	12,240	0.095	19,585	0.135	36,721
CD10	13-1/2"	7/8"	(23) #14	2-33mil (2-20ga)	7,293	0.120	11,669	0.160	21,880
				2-43mil (2-18ga)	9,314	0.068	14,902	0.106	27,941
				2-54mil (2-16ga)	12,502	0.083	20,004	0.125	37,507
				2-68mil (2-14ga)	12,899	0.083	20,638	0.127	38,697
				2-97mil (2-12ga)	12,899	0.083	20,638	0.127	38,697
CD15	19"	1"	(32) #14	2-33mil (2-20ga)	7,610	0.098	12,177	0.125	22,831
				2-43mil (2-18ga)	9,235	0.067	14,776	0.104	27,705
				2-54mil (2-16ga)	13,532	0.088	21,650	0.128	40,595
				2-68mil (2-14ga)	13,695	0.063	21,911	0.096	41,084
				2-97mil (2-12ga)	13,695	0.063	21,911	0.096	41,084

Notes:

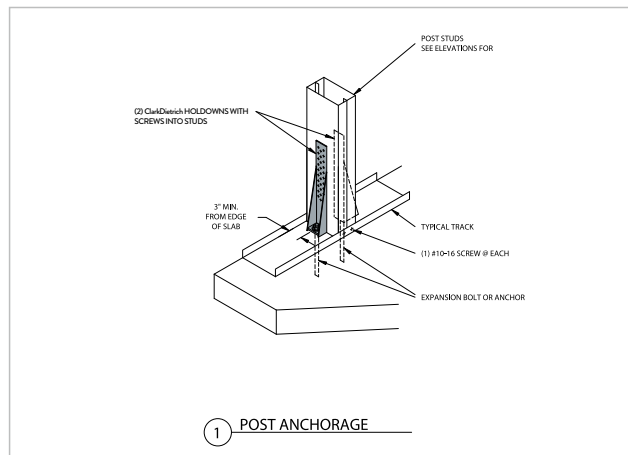
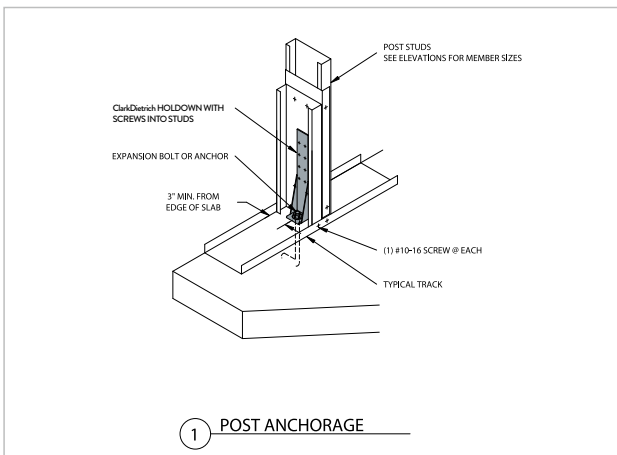
- 1 Designer shall specify the foundation anchor material type, length, embedment and configuration. Tabulated loads may exceed anchor bolt ASTM A36 or A307 tension capacities.
- 2 Stud design by qualified professional. Tabulated loads are based on a minimum stud thickness for fastener connection.
- 3 1/4" self-drilling screws can be substituted for #14.
- 4 Deflection at ASD and LRFD loads includes fastener slip, holddown elongation and anchor bolt elongation.
- 5 Nominal tension load is based on the average ultimate (peak) load from tests. AISI Lateral Design standard requires holddown to have nominal strength to resist lesser of amplified seismic load or what the system can deliver.

Sources of deflection at the shearwall holddown connections:

- A** Eccentricity in stud—when a holddown is installed on only one side of the stud, an eccentricity exists during loading that can cause additional movement in the shearwall system.
- B** Nut spin—unrestrained anchor bolt nuts can spin loose during cyclic loading; the use of steel nylon locking nuts or thread adhesive may prevent nut spin.
- C** Lack of nut tightening—additional movement can occur when nuts are not tightened sufficiently.
- D** Deflection of the holddown—deflection can occur in the holddown under load caused by stresses due to earthquake or high wind.
- E** Vertical deflection at the holddown seat caused by stud rotation—lateral displacement at the top of the wall rotates the stud around its base causing the holddown base plate to displace vertically.



Typical Construction Details



Visit our CAD Library at clarkdietrich.com to view or download construction details in .dwg, .dxf, and .pdf formats.