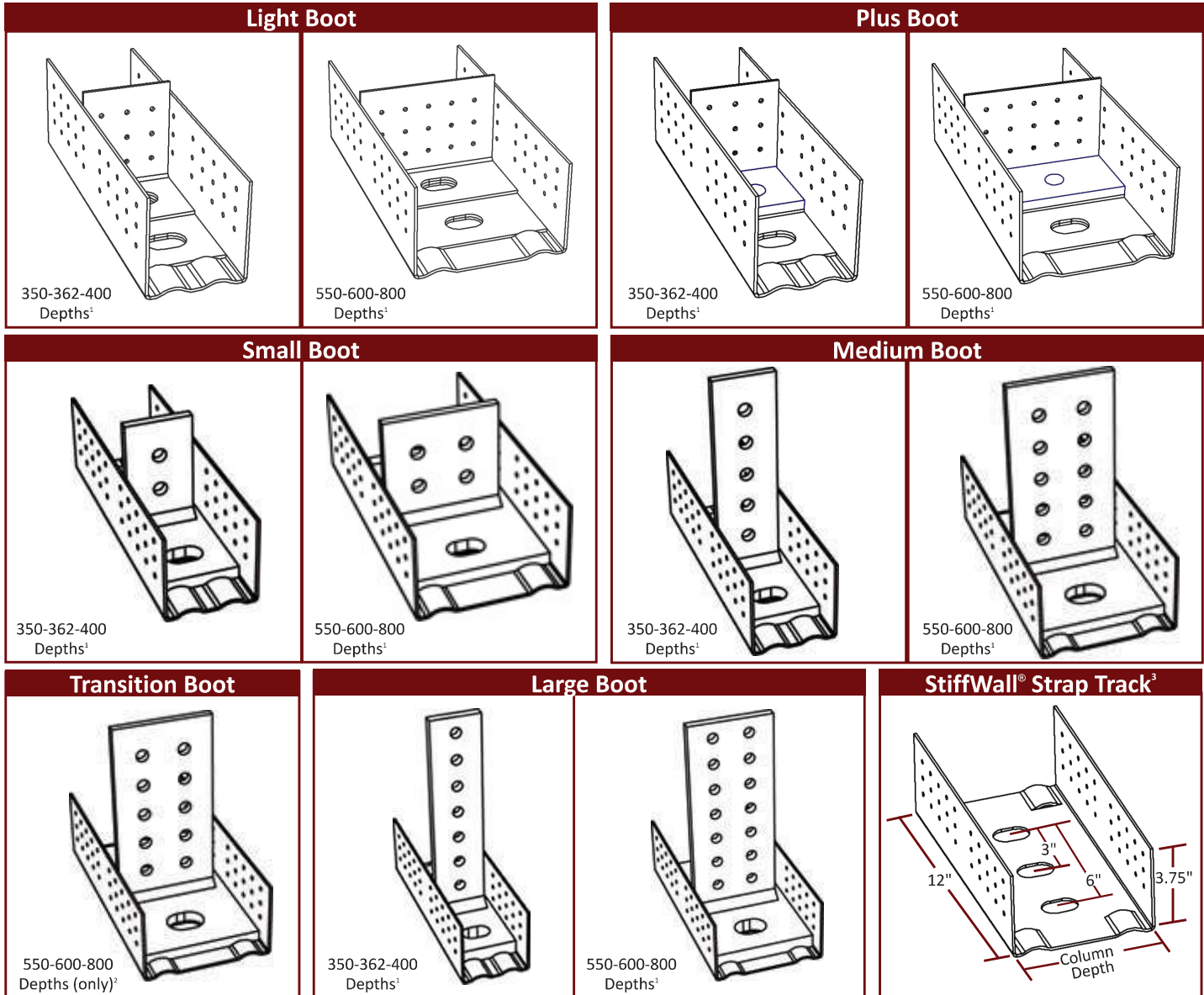


## Boot Dimensions And Thickness

StiffWall® Boots are designed to provide the optimal cost-effective solution for shear wall connections. Six configurations are available to meet project requirements (Light, Plus, Small, Medium, Transition and Large). StiffWall Boots are sized to fit inside standard track and are available for 3.5", 3.625", 4", 5.5", 6" and 8" Depths. **During installation of StiffWall Boots, standard or plate washer shall be used with a size sufficient to cover the Boots' slots after installation.** Light and Plus Boots are used with single StiffWall column only. The Steel Network will fabricate the StiffWall columns to the required height (adjacent stud cut height or other height provided by the contractor). StiffWall columns are delivered to the job site (or requested location by the contractor) with Boots pre-attached at the top and bottom of columns for fast installation.



<sup>1</sup> Boots less than or equal to 4" and Light, Plus and Medium Boots greater than 4" contain guide holes for 7/8" anchors. Transition and Large Boots greater than 4" contain guide holes for 1 1/4" anchors.

<sup>2</sup> The StiffWall Transition Boot is used when the floor above uses a Small or Medium Boot and the floor below uses a Large Boot (for depths greater than 4" only). The anchor hole of the Transition Boot at the base of the wall couples with that of the Large Boot at the underside of the floor below to maintain the continuity of the through-floor fasteners (1 1/4" threaded rods or anchors).

<sup>3</sup> StiffWall Strap Track is available in 12ga (97mils) thickness. Center hole is for conditions where only one anchor is necessary

## Subtract Boot Thickness to Determine Column Bearing Height

The Steel Network will determine the actual bearing height of a StiffWall Column by subtracting the thickness of the StiffWall Boot and Strap Track elements on which it is bearing. For each boot, the Strap Track is 97mils thick. The dimensions of various boot elements are shown in the table below. Contact TSN for design recommendations or assistance with any light steel framing technical issue.

Boot Type	Strap Track Thickness	Base Plate Thickness	Additional Base Plate Thickness	Total Thickness of Two Boots <sup>1</sup>
Light, Plus	0.1017"	0	0.1242"	0.5"
Small, Medium, Transition	0.1017"	0.5"	0	1.3125"
Large	0.1017"	0.75"	0	1.8125"

<sup>1</sup> Total thickness rounded to nearest 1/32", with 1/32" added for installation tolerance.

## Material Composition

**Cold-Formed Steel:** ASTM A 1003/A 1003M, ST50H or equivalent (Min.  $F_y = 50$  ksi, Min.  $F_u = 65$  ksi).

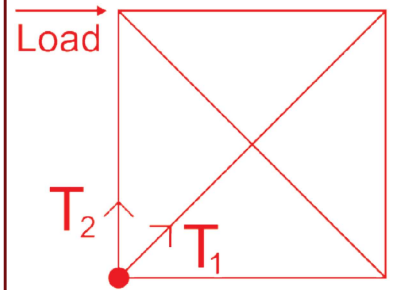
**Structural Steel:** ASTM A 572/A 572M, Grade 50 or equivalent (Min.  $F_y = 50$  ksi, Min.  $F_u = 65$  ksi).  
Coating Powder – Black or TSN approved equivalent.

**Bolts:** ASTM F3125 Grade A325.

## Important Notes

1. Allowable loads are based on analysis of loads and allowable stresses set by AISI S100 and AISC 360 Spec.
2. Straps tension  $T_1$  is the summation of tension forces in the the two diagonal straps.
3. Load paths for straps tension and column uplift are independent in the boot connection and allowable loads  $T_1$  and  $T_2$  can be combined for the same boot.
4. Check combined tension and shear in anchor bolts due to applied  $T_1$  and  $T_2$  values as per AISC 360 Specification, Sec. J3.7.
5. Check screw shear for  $T_2$  on Light and Plus boot connection to column. Factory-assembled kits come with 4 #12 screws by default. Up to 11 more screws can be added as specified by designer.
6. Allowable loads for wall aspect ratio other than listed can be interpolated, but not extrapolated.
7. Fillet Weld Designation is E70XX Metal Arc or equivalent. Thickness as specified.
8. Consider the provisions of AISI S400-20 in the design of connections when designing the lateral system in buildings assigned to Seismic Design Category (SDC) D, E, or F, or wherever the Seismic Response Modification Coefficient "R" used to determine the seismic design forces is greater than 3.

## Load Direction Diagram



If load capacities exceed published loads, custom boot connections may be manufactured. Contact TSN for recommendations.

StiffWall® Boot Capacity (kips)									
Width (in)	Wall	Light		Plus		Small / Medium / Transition		Large	
	Aspect Ratio	Straps Tension	Column Uplift	Straps Tension	Column Uplift	Straps Tension	Column Uplift	Straps Tension	Column Uplift
	Vertical: Horizontal	T1	T2	T1	T2	T1	T2	T1	T2
3.5	0.6:1 (30.96 deg.)	12.00	1.78	12.75	4.79	18.60	8.65	18.60	19.46
	1:1 (45 deg.)	8.73	1.78	15.47	4.79	22.08	8.65	22.08	19.46
	2:1 (63.5 deg.)	6.91	1.78	12.38	4.79	26.81	8.65	29.01	19.46
3.625	0.6:1 (30.96 deg.)	11.59	1.83	12.75	4.98	18.60	8.98	18.60	20.21
	1:1 (45 deg.)	8.43	1.83	15.12	4.98	22.08	8.98	22.08	20.21
	2:1 (63.5 deg.)	6.67	1.83	11.95	4.98	25.88	8.98	29.01	20.21
4	0.6:1 (30.96 deg.)	10.50	1.97	12.75	5.56	18.60	9.98	18.60	22.46
	1:1 (45 deg.)	7.64	1.97	13.70	5.56	22.08	9.98	22.08	22.46
	2:1 (63.5 deg.)	6.04	1.97	10.83	5.56	23.46	9.98	29.01	22.46
5.5	0.6:1 (30.96 deg.)	7.64	2.49	12.75	7.86	18.60	13.98	21.48	35.76
	1:1 (45 deg.)	5.56	2.49	9.96	7.86	21.58	13.98	25.34	35.76
	2:1 (63.5 deg.)	4.39	2.49	7.88	7.86	17.06	13.98	32.23	35.76
6	0.6:1 (30.96 deg.)	7.00	2.65	12.55	8.62	18.60	15.32	21.48	39.16
	1:1 (45 deg.)	5.10	2.65	9.13	8.62	19.78	15.32	25.34	39.16
	2:1 (63.5 deg.)	4.03	2.65	7.22	8.62	15.64	15.32	32.23	39.16
8	0.6:1 (30.96 deg.)	5.25	3.21	9.41	11.69	18.60	20.65	21.48	52.80
	1:1 (45 deg.)	3.82	3.21	6.85	11.69	14.84	20.65	25.34	52.80
	2:1 (63.5 deg.)	3.02	3.21	5.42	11.69	11.73	20.65	25.81	52.80

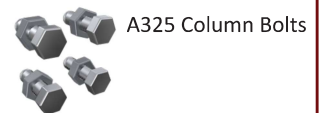
## Boot Components

StiffWall Boots come pre-assembled with StiffWall Columns. Please refer to the StiffWall product page for full system design and order information. Contact TSN technical support for design recommendations.

**Please Note:** Boot Kits may NOT be sold separately, as they are part of an engineered system.



StiffWall Base Plate



A325 Column Bolts



Strap Track