

Heli-Tie Helical Wall Tie

Material

316 Stainless Steel

Corrosion Resistance Level
SEVERE

Size: See the table below

Features & Benefits

- Can install in the face of brick or into the mortar bed joint
- Installs quickly and easily
- Provides an inconspicuous repair that helps preserve a building's appearance
- 316 Stainless Steel offers superior corrosion resistance when wall cavity exposure exists
- Patented manufacturing process enables easier driving and better interlock with the substrate
- Batch number printed on each tie for easy identification and inspection
- Available in precut and a 10m roll

Applications

- Repair of building facades

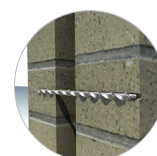
Construction Details

Heli-Tie Helical Wall Tie

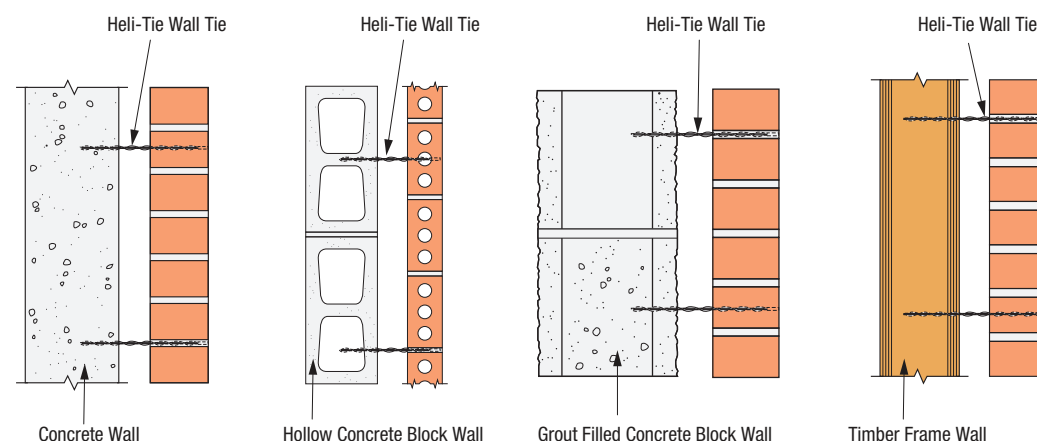
U.S. Patent 7,269,987



Batch number printed on each tie for **easy identification and inspection**



Patented manufacturing process enables **easier driving and better interlock** with the substrate



Heli-Tie Wall Tie Installation

Specifications - Heli-Tie Helical Wall Tie

Model No.	Size	Drill Bit Dia.	Material & Finish	Box Qty
HELI09180A4	9mm x 180mm	5.5mm or 6.5mm	316 Stainless Steel	100
HELI09205A4	9mm x 205mm			
HELI09230A4	9mm x 230mm			
HELI09255A4	9mm x 255mm			150
HELI09280A4	9mm x 280mm			
HELI09305A4	9mm x 305mm			
HELI09A4-10M	9mm x 10m			1

1. Special-order lengths available, contact Simpson Strong-Tie for details.

Heli-Tie Helical Wall Tie

Heli-Tie™ Helical Wall Tie Guide Tension Loads in Various Base Materials

Base Material	Anchor Location	Drill Bit Dia.* (mm)	Min. Embed. Depth (mm)	Tension Load ¹				
				Ultimate ² (kN)	Standard Deviation (kN)	Charac-teristic (kN)	Load at Max. Permitted Displ. ³ (kN)	Coeffi-cient of Variation
Solid Brick ⁴	Mortar Bed Joint	5.5	76	2.5	0.4	1.5	1.1	0.16
		6.5		1.6	0.2	1.1	0.6	0.13
	Brick Face	5.5		5.8	0.4	4.8	2.5	0.07
		6.5		3.6	0.3	2.8	1.6	0.08
Hollow Brick ⁵	Mortar Bed Joint	5.5	76	2.4	0.4	1.4	1.3	0.17
		5.5		3.4	0.2	2.9	1.8	0.06
	Brick Face	5.5		2.3	0.1	2.0	0.8	0.04
		6.5		2.3	0.1	2.0	0.8	0.04
Grout-Filled CMU ⁶	Centre of Face Shell	5.5	70	5.2	0.4	4.2	1.8	0.08
		6.5		3.7	0.3	2.9	1.6	0.08
	Web	5.5		5.2	0.2	4.7	2.0	0.04
		6.5		3.6	0.4	2.6	1.5	0.11
	Mortar Bed Joint	5.5		3.2	0.3	2.4	1.4	0.09
		6.5		2.4	0.3	1.6	0.9	0.13
	Centre of Face Shell	5.5		3.5	0.2	3.0	1.4	0.06
		6.5		2.2	0.2	1.7	1.1	0.09
Hollow CMU ⁷	Web	5.5	70	5.3	0.2	4.8	2.0	0.04
		6.5		3.0	0.4	2.0	1.7	0.13
Normal-Weight Concrete ⁸	—	5.5	44	3.9	0.3	3.1	1.8	0.08
		6.5	70	4.4	0.4	3.4	1.7	0.09
Timber Stud ^{9,11}	Centre of Thin Edge	5.5	70	2.6	0.1	2.3	1.6	0.04
		6.5		2.0	0.0	2.0	1.2	0.00
Steel Stud ^{10,11}	Centre of Flange	5.5	25	0.9	0.0	0.9	0.5	0.00
		6.5		0.7	0.0	0.7	0.4	0.00

1. Tabulated loads are guide values based on laboratory testing. On-site testing shall be performed for verification of capacity since base material quality can vary widely.
2. Ultimate load is average load at failure of the base material. Heli-Tie™ fastener average ultimate steel strength is 17.3 kN and does not govern.
3. Load at maximum permitted displacement is average load at displacement of 4 mm. The designer shall apply a suitable factor of safety to these numbers to derive allowable service loads.
4. Solid brick values for nominal 100 mm wide solid brick conforming to ASTM C62/C216, Grade SW, Type N mortar is prepared in accordance with IBC Section 2103.8.
5. Hollow brick values for nominal 100 mm wide hollow brick conforming to ASTM C216/C652, Grade SW, Type HBS, Class H40V. Mortar is prepared in accordance with IBC Section 2103.8.
6. Grout-filled CMU values for 200 mm wide lightweight, medium-weight and normal-weight concrete masonry units. The masonry units must be fully grouted. Values for 200 mm wide concrete masonry units (CMU) with a minimum specified compressive strength of masonry, f'm, at 28 days is 10.34 MPa.
7. Hollow CMU values for 200 mm wide lightweight, medium-weight and normal-weight concrete masonry units.
8. Normal-weight concrete values for concrete with minimum specified compressive strength of 17.24 MPa.
9. 90 mm x 45 mm timber stud values for nominal 90 mm x 45 mm Spruce-Pine-Fir or Radiata Pine.
10. Steel stud values for 20-gauge C-shape steel stud.
11. For new construction. Anchor one end of tie into backup material. Embed other end into veneer mortar joint. Not for retrofits due to difficulty of locating centre of timber or steel stud flange.

*When selecting drill bit, 5.5 mm equates to 7/32" and 6.5 mm equates to 1/4" imperial sized bit.

Heli-Tie™ Helical Wall Tie Compression (Buckling) Loads

Size (mm)	Unsupported Length (mm)	Ultimate Compression Load ¹ (kN)
9.0	25	8.5
	50	5.8
	100	4.4
	150	3.5

1. The Designer shall apply a suitable factor of safety to these values to derive allowable service loads.