

Heli-Tie Helical Wall Tie

Material

316 Stainless Steel



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

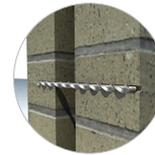
Applications

- Repair of building facades

Construction Details

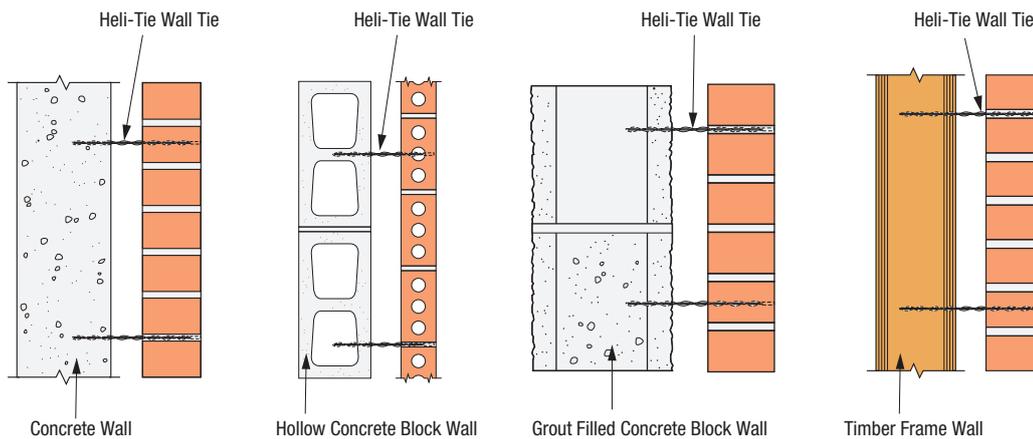


Batch number printed on each tie for **easy identification and inspection**



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

Heli-Tie Helical Wall Tie
U.S. Patent 7,269,987



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 | | | |
| HELI09A2-X | 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 | | 2.4 | 0.4 | 1.4 | 1.3 | 0.17 | |
| | Brick Face | 5.5 | | 3.4 | 0.2 | 2.9 | 1.8 | 0.06 | |
| | | 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 | |
| Hollow CMU ⁷ | 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 | |
| | Web | 5.5 | 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 5/16" 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.