

## Fix Facades Fast!

The stainless-steel Heli-Tie™ wall tie is used to anchor building façades to structural members or to stabilise multiple-skin brick walls. The helical design enables the tie to be driven quickly and easily into a predrilled pilot hole (or embedded into mortar joints in new construction). As it is driven, the fins of the tie undercut the masonry to provide an expansion-free anchorage that will withstand tension and compression loads.

The Heli-Tie wall tie is installed using a proprietary setting tool that is used with an SDS-Plus shank rotohammer to drive and countersink the tie. Heli-Tie wall ties perform in concrete and masonry as well as wood and steel studs.

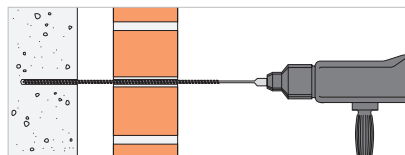
### Features:

- Can install in the face of red brick or into the mortar bed joint
- Installs quickly and easily
- Provides an inconspicuous repair that helps preserve a building's appearance
- Patented manufacturing process enables easier driving and better interlock with the substrate
- Batch number printed on each tie for easy identification and inspection

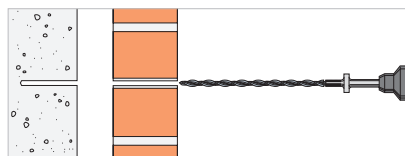
### Material:

- Type 316 stainless steel

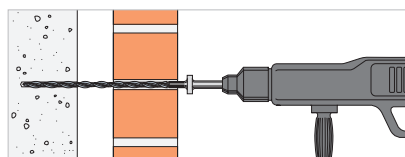
### Installation:



- Drill pilot hole through the façade and to the specified embedment depth in the base material (add 25mm to drill depth if base material is concrete). Drill should be in rotation only mode when drilling into soft masonry or into hollow backing material.



- Position blue end of the Heli-Tie™ fastener in the installation tool and insert the tie into the pilot hole.



- With the SDS-PLUS rotohammer in rotation and hammer mode, drive the tie until the tip of the installation tool enters the exterior surface of the masonry and countersinks the tie below the surface.

PLEASE NOTE: A test hole should be performed to ensure the tie will go in.



### Heli-Tie™ Product Data:

Size (mm)	Model No.	Drill Bit Dia.* (mm)	Quantity	
			Box	Ctn
9 x 180	HELI09180A4	5.5 or 6.5	100	400
9 x 205	HELI09205A4		100	400
9 x 230	HELI09230A4		100	400
9 x 255	HELI09255A4		150	300
9 x 280	HELI09280A4		150	300
9 x 305	HELI09305A4		150	300

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

### Complementary Products:

#### HELITool09 – Heli-Tie™ Fastener Installation Tool

Required to correctly install the Heli-Tie wall ties, this tool speeds up installation and automatically countersinks the tie into the façade material. The one-piece design with no moving parts, improves longevity and prevents the Heli-Tie fasteners from jamming. *Installation tools sold separately.*

#### HELITest09 – Heli-Tie™ Wall Tie Tension Tester

Recommended equipment for on-site testing to accurately determine load values in any specific structure, the Heli-Tie wall tie tension tester features a key specifically designed to grip the Heli-Tie fastener and provide accurate results.

*Replacement test keys sold separately (Model HELIKEY09)*

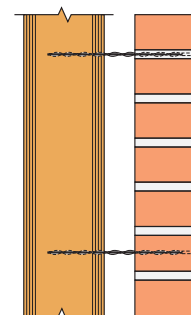
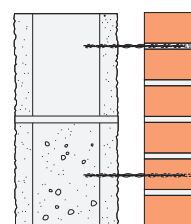
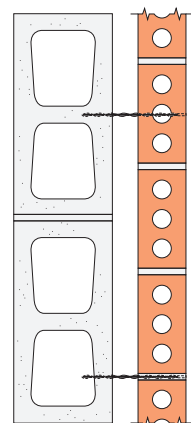
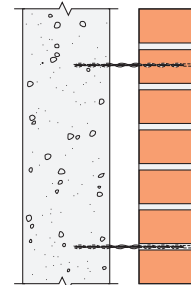


# Guide Tension Loads in Various Base Materials

Size (mm)	Base Material	Anchor Location	Drill Bit Dia.* (mm)	Min. Embed. Depth (mm)	Tension Load <sup>1</sup>				
					Ultimate <sup>2</sup> (kN)	Standard Deviation (kN)	Characteristic (kN)	Load at Max. Permitted Displ. <sup>3</sup> (kN)	Coefficient of Variation
9.0	Solid Brick <sup>4</sup>	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 <sup>5</sup>	Mortar Bed Joint	5.5	76	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 <sup>6</sup>	Center 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 <sup>7</sup>	5.5		3.5	0.2	3.0	1.4	0.06
			6.5		2.2	0.2	1.7	1.1	0.09
	Normal-Weight Concrete <sup>8</sup>	Center of Face Shell	5.5	44	5.3	0.2	4.8	2.0	0.04
			6.5		3.0	0.4	2.0	1.7	0.13
		Web	5.5		3.9	0.3	3.1	1.8	0.08
			6.5		4.4	0.4	3.4	1.7	0.09
	Timber Stud <sup>9,11</sup>	Center 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
	Metal Stud <sup>10,11</sup>	Center 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



Caution: 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.



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 17.3kN and does not govern.

3. Load at maximum permitted displacement is average load at displacement of 4mm. The designer shall apply a suitable factor of safety to these numbers to derive allowable service loads.

4. Solid brick values for nominal 100mm 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 100mm 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 200mm wide lightweight,

medium-weight and normal-weight concrete masonry units. The masonry units must be fully grouted. Values for 200mm 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 200mm 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. 90mm x 45mm timber stud values for nominal 90mm x 45mm Spruce-Pine-Fir or Radiata Pine.

10. Metal stud values for 20-gauge C-shape metal 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 center of timber or metal stud flange.

\* When selecting drill bit, 5.5mm equates to 7/16" and 6.5mm equates to 1/4" imperial sized bit.

## Compression (Buckling) Loads

Size (mm)	Unsupported Length (mm)	Ultimate Compression Load <sup>1</sup> (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.

This flier is effective until August 31, 2016, and reflects information available as of September 1, 2014. This information is updated periodically and should not be relied upon after August 31, 2016; contact Simpson Strong-Tie for current information and limited warranty or see [www.strongtie.com](http://www.strongtie.com)

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