



In the Specs – On the Job – At Your Service™

HELI-TIE™ Helical Wall Tie



New or Existing Construction

The Heli-Tie is a stainless steel helical tie used to anchor building façades to structural members or to stabilize multiple wythe brick walls. The helical design allows the tie to be driven quickly and easily into a predrilled pilot hole (or embedded into mortar joints in new construction) to provide a mechanical connection between a masonry façade and its backup material or between multiple wythes of brick.

Ideal for Retrofit Jobs

The Heli-Tie is a fast and economical way to re-attach a building's façade to its main structure after the original ties have corroded. Rather than time-consuming adhesive or expansion anchor solutions that require larger holes in the façade, the Heli-Tie installs in a single step in a predrilled hole no larger than ¼". During installation, the tie is countersunk into the façade to allow for easy patching.

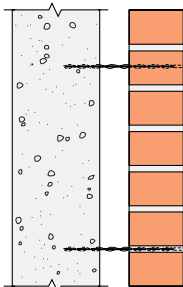


FEATURES:

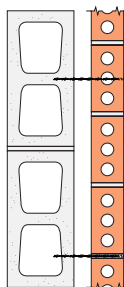
As the Heli-Tie helical wall tie is driven into a pre-drilled hole it pins the façade and back-up material together, providing a mechanical interlock along the entire length of the tie. This stress-free connection is not dependent upon friction, expansion or adhesive bond. When embedded in grout for new construction, helical profile provides superior bearing area when compared to previous generation ties with less interlocking capability.

- Installs quickly and easily – with the rotohammer in rotation and hammer mode the tie installs quicker than competitive products.
- Manufactured from corrosion resistant stainless steel.
- Fractionally sized anchor – no metric drill bits required.
- Provides an inconspicuous repair that preserves the appearance of the building. After installation the tie is countersunk up to ½" below the surface, allowing the tie location to be patched.
- Larger core diameter provides higher torsional capacity resulting in less deflection due to uncoiling under load.
- Patented manufacturing process results in a more uniform helix spacing along the entire length allowing easier driving and better interlock with the substrate.
- Designed for use in concrete, masonry, wood and with steel studs.

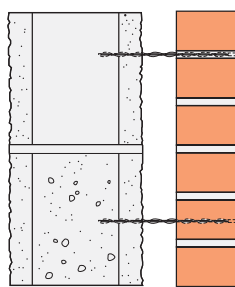
Heli-Tie Wall Ties are Ideal for Various Types of Retrofit or New Construction Applications:



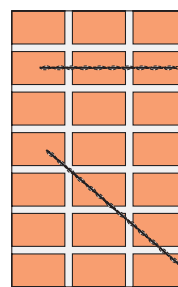
Brick to concrete (through mortar joint or brick)



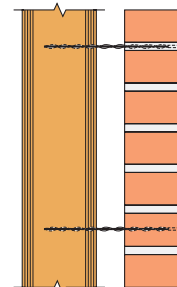
Hollow Brick to concrete block (through mortar joint or brick)



Brick to concrete block (hollow or grouted)

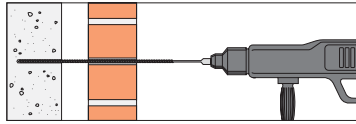


Multi-wythe brick

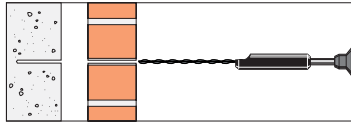


Brick to wood stud (through mortar joint or brick)

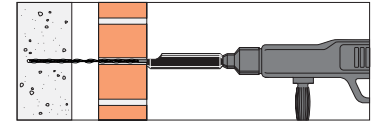
INSTALLATION:



- Drill pilot hole through the façade material and to the specified embedment depth plus 1" in the backup material using appropriate drill bit(s). Drill should be in rotation-only mode when drilling into soft masonry or into hollow backing material.



- Position the Heli-Tie 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 installation tool shoulders up to the exterior surface of the masonry and the drive pin is fully extended. The installation tool will countersink the tie below the surface. Patch the hole in the façade using a color-appropriate material.

Heli-Tie Helical Wall Tie Accessories

Heli-Tie Installation Tool – Model HELITOOL37

Required for correct installation of Heli-Tie stainless steel helical wall ties. Speeds up installation and automatically countersinks the tie into the façade material up to 1/2". The recessed end of the drive pin frictionally imparts torque onto the tie causing it to thread into the pilot hole faster than competing ties. The cutaway at the tip prevents drill dust from jamming the tie in the tool and allows visual verification of how far the tie has been driven. Features an SDS-Plus shank and is designed for use in rotation/hammer mode. Installation tools sold individually.



Heli-Tie Wall Tie Tension Tester – Model HELITEST37A

Recommended equipment for on-site testing to accurately determine load values in any specific substrate material. The Heli-Tie wall tie tension tester features a key specifically designed to grip the Heli-Tie wall tie and provide accurate results. Replacement keys sold separately (Model HELIKEY37A).



Heli-Tie Product Data

Size (in.)	Model No.	Drill Bit Dia. (in.)	Quantity	
			Box	Carton
3/8 x 6	HELI37600	7/32 or 1/4	100	400
3/8 x 7	HELI37700		100	400
3/8 x 8	HELI37800		100	400
3/8 x 9	HELI37900		100	400
3/8 x 10	HELI371000		150	300
3/8 x 11	HELI371100		150	300
3/8 x 12	HELI371200		150	300

Special order lengths available, contact Simpson for details.

Heli-Tie Technical Data

Material:

304 stainless steel (316 available by special order, contact Simpson for details)

Test Criteria:

CSA A370

Compression (Buckling) Loads

Size in. (mm)	Unsupported Length in. (mm)	Ultimate Compression Load ¹ lbs. (kN)
3/8 (9.0)	1 (25)	1,905 (8.5)
	2 (50)	1,310 (5.8)
	4 (100)	980 (4.4)
	6 (150)	785 (3.5)

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

Guide Tension Loads in Various Base Materials

Size in. (mm)	Base Material	Anchor Location	Drill Bit Dia. in.	Min. Embed. Depth in. (mm)	Tension Load ¹			
					Ultimate ² lbs. (kN)	Load at Max. Permitted Displ. ³ lbs. (kN)	Standard Deviation lbs. (kN)	
3/8 (9.0)	Solid Brick ⁴	Mortar Bed Joint	7/32	3 (76)	570 (2.5)	240 (1.1)	79 (0.4)	
			1/4		365 (1.6)	130 (0.6)	46 (0.2)	
		Brick Face	7/32		1,310 (5.8)	565 (2.5)	84 (0.4)	
			1/4		815 (3.6)	350 (1.6)	60 (0.3)	
	Hollow Brick ⁵	Mortar Bed Joint	7/32		530 (2.4)	285 (1.3)	79 (0.4)	
			7/32		775 (3.4)	405 (1.8)	47 (0.2)	
		Brick Face	1/4		510 (2.3)	185 (0.8)	20 (0.1)	
	Grout-Filled CMU ⁶	Center of Face Shell	7/32		2 3/4 (70)	1,170 (5.2)	405 (1.8)	79 (0.4)
			1/4	830 (3.7)		350 (1.6)	60 (0.3)	
		Web	7/32	1,160 (5.2)		440 (2.0)	56 (0.2)	
			1/4	810 (3.6)		330 (1.5)	100 (0.4)	
		Mortar Bed Joint	7/32	720 (3.2)		320 (1.4)	71 (0.3)	
			1/4	530 (2.4)		205 (0.9)	58 (0.3)	
		Hollow CMU ⁷	Center of Face Shell	7/32		790 (3.5)	305 (1.4)	56 (0.2)
				1/4		505 (2.2)	255 (1.1)	46 (0.2)
	Web		7/32	1,200 (5.3)	445 (2.0)	50 (0.2)		
			1/4	675 (3.0)	385 (1.7)	96 (0.4)		
	Normal-Weight Concrete ⁸	-	7/32	1 3/4 (44)	880 (3.9)	410 (1.8)	76 (0.3)	
			1/4	2 3/4 (70)	990 (4.4)	380 (1.7)	96 (0.4)	
	2x4 Wood Stud ^{9,11}	Center of Thin Edge	7/32	2 3/4 (70)	590 (2.6)	370 (1.6)	24 (0.1)	
1/4			450 (2.0)		260 (1.2)	6 (0.0)		
Metal Stud ^{10,11}	Center of Flange	7/32	1 (25)	200 (0.9)	120 (0.5)	8 (0.0)		
		1/4		155 (0.7)	95 (0.4)	2 (0.0)		

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 wall tie average ultimate steel strength is 3,885 pounds and does not govern.
3. Load at maximum permitted displacement is average load at displacement of 0.157 inches (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 4-inch wide solid brick conforming to ASTM C62/C216, Grade SW. Type N mortar is prepared in accordance with UBC Section 2103.3 and UBC Standard 21-15, or IBC Section 2103.8.
5. Hollow brick values for nominal 4-inch wide hollow brick conforming to ASTM C216/C652, Grade SW, Type HBS, Class H40V. Mortar is prepared in accordance with UBC Section 2103.3 and UBC Standard 21-15, or IBC Section 2103.8.
6. Grout-filled CMU values for 8-inch wide lightweight, medium-weight and normal-weight concrete masonry units conforming to UBC Standard 21-4 or ASTM C90, Grade N, Type II. The masonry units must be fully grouted with grout conforming with UBC Section 2103.4 or IBC Section 2103.12. Type N mortar is prepared in accordance with UBC Section 2103.3 and UBC Standard 21-15, or IBC Section 2103.8.
7. Hollow CMU values for 8-inch wide light-weight, medium-weight and normal-weight concrete masonry units conforming to UBC Standard 21-4 or ASTM C90, Grade N, Type II. Type N mortar is prepared in accordance with UBC Section 2103.3 and UBC Standard 21-15, or IBC Section 2103.8.
8. Normal-weight concrete values for concrete with minimum specified compressive strength of 2,500 psi.
9. 2x4 wood stud values for nominal 2x4 Spruce-Pine-Fir.
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 2x4 or metal stud flange.

This flier reflects information available as of June 1, 2008. This information is updated periodically; contact Simpson Strong-Tie for limited warranty and current product information.

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Simpson offers a full line of anchors, adhesives, P.A.T. and drill bits for all of your anchoring and fastening applications. Visit our website or request our full line catalog for complete information.

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