

STITCH-TIE

Re-anchors existing veneers to backup structures

PROSOCO Stitch-Ties, formerly called CTP Stitch-Ties, reattach existing facades constructed of brick, stone, masonry, pre-cast concrete, etc., that have missing or corroded wall ties. These ties are ideal for reconnecting veneer to block, concrete, brick and wood structures without exposed hardware. They can also repair cracked brick veneers via reinforcement by horizontally pointing the Stitch-Tie® in the bed joint.



**TYPE 304
STAINLESS STEEL**



**EASY & FAST
INSTALLATION**



**REPAIRS ARE
ALMOST INVISIBLE**



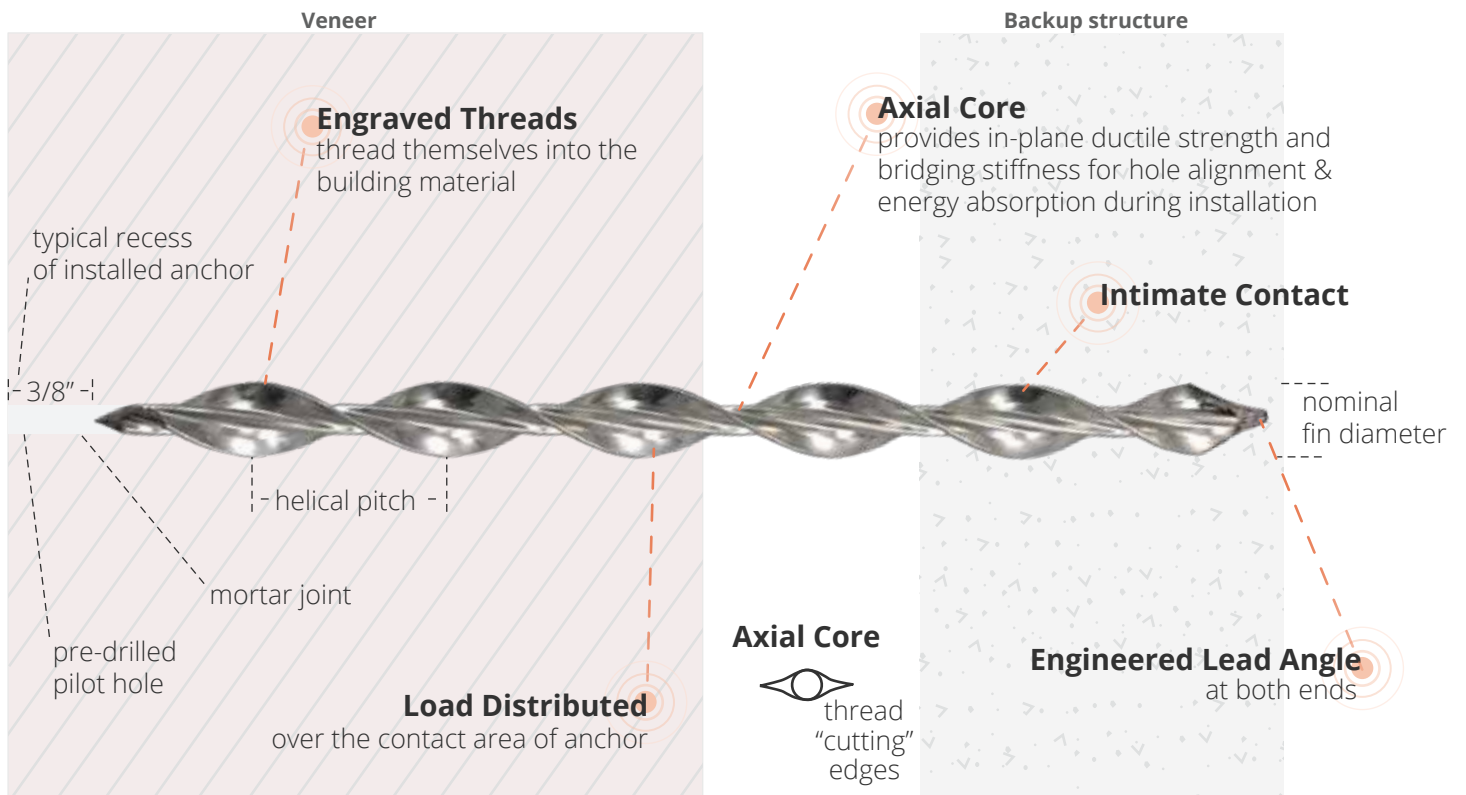
**DOESN'T ADD TENSION
BETWEEN WYTHES**



**SECURES MOST
BUILDING MATERIALS**



**WORKS IN ANY
WEATHER**



STITCH-TIE

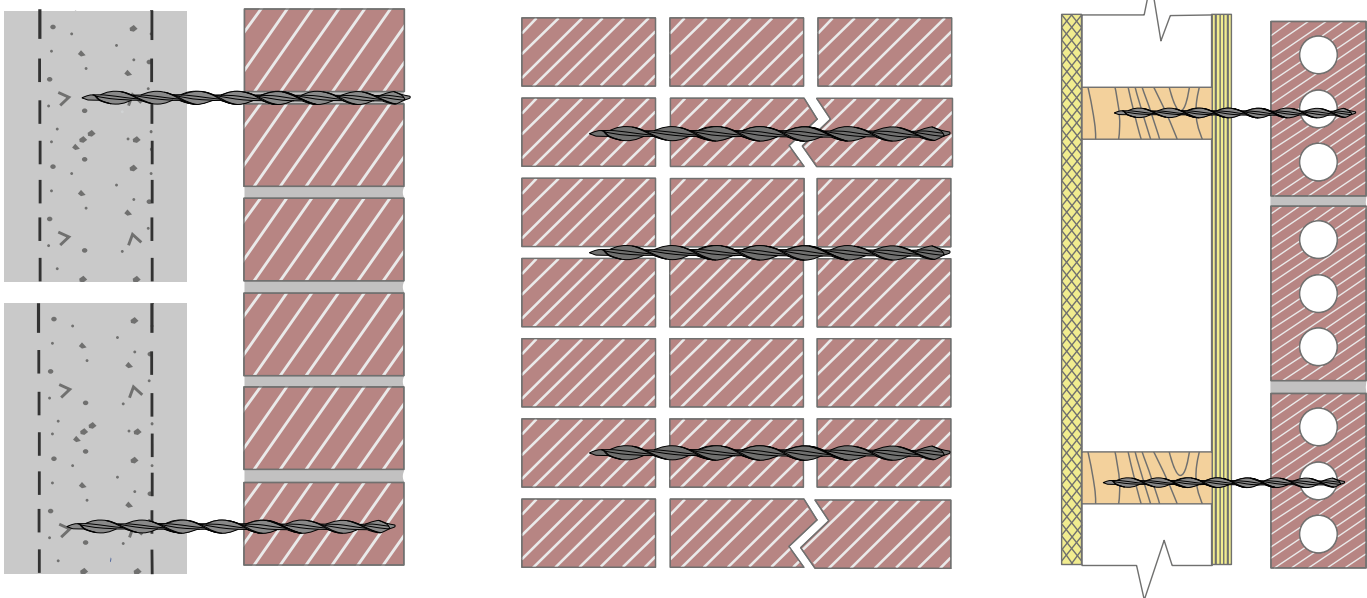
Re-anchors existing veneers to backup structures

Overview

The Stitch-Tie is a stainless steel (Type 304) pinning solution for re-anchoring existing veneers to various substrates. The process eliminates the need to tear down and replace existing facades, and preserves the beauty and historical integrity of the existing building. Stitch-Tie pins are installed in pre-drilled holes by use of a dry-set tool and a rotary hammer. The percussion action of the drill will create the driving forces necessary for the spiral-shaped tie to thread into the building material. Once installed, the helical shape offers an in-plane, flexible connector between wythes of material, while maintaining a threaded connection to resist out-of-plane loading for both tension and compression resistance. The Stitch-Tie does not draw walls together – therefore tension forces between wythes are not present. They are installed in relatively small holes that are easily patched and concealed. Various diameters and lengths are available for numerous applications. Stitch-Ties can also be field-trimmed using cutters for optimum length requirements.

Anchor Spacing

Unless otherwise specified, Stitch-Tie anchors are typically installed at one anchor per 2 square feet of veneer area to be retrofitted. Refer to your local building codes and standards for spacing condition requirements of wall ties and anchors for appropriate compliance.



Lintel and Shelf Angle Support

Stitch-Tie stainless steel helical wall ties can be used for providing temporary stability for brick veneer walls above openings created for the repair or replacement of lintels or shelf angles.

Data supplied is based on the resulting stiffness of 8mm Stitch-Tie at various cavities: 1" cavity = 1,264 lb/in • 2" cavity = 316 lb/in • 3" cavity = 140 lb/in.

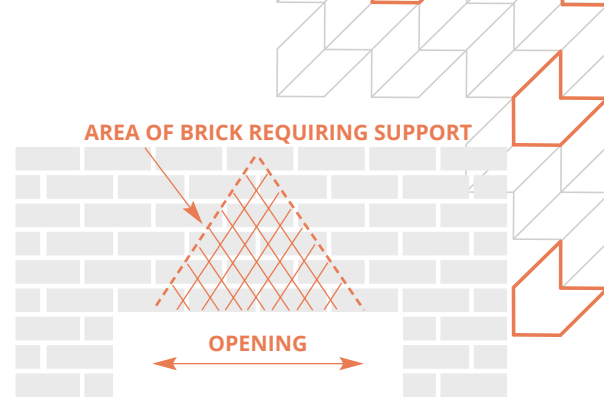
1) Stabilize veneer above opening using 8mm or 10mm Stitch-Ties.

2) Space Stitch-Tie anchors :

	CAVITY		
	1"	2"	3"
HORIZONTAL	12	12	12
VERTICAL	12	6	3

3) First row of Stitch-Ties to be installed in the lower bed joint of the remaining course above opening, supporting brick above.

4) Openings 8 feet and larger should have a greater number of Stitch-Ties populate the center area of veneer above the middle of the opening. To accomplish this, reduce the horizontal placement of two Stitch-Ties every other course by adding them to the vertical field of brick.



Stitch-Tie testing for shelf angle support

PERFORMANCE

MATERIAL	EFFECTIVE MINIMUM EMBED (inches)	ULTIMATE TENSION/COMPRESSION (lbs.)	
		8mm	10mm
Mortar Joint	3"	700	750
Brick (solid)			
cavity	3 5/8"	700	700
solid	3 5/8"	1200	1400
Clay Tile hollow			
8" -2 core	8"	460	550
12" -3 core	6 1/2"	400	560
CMU hollow			
4" lightweight	3/4"	430	450
6" normal weight	1"	800	900
8" lightweight	1 1/4"	510	650
8" normal weight	1 1/4"	740	750
12" lightweight	1 1/2"	520	550
12" normal weight	1 1/2"	700	750
CMU grouted, lightweight	2"	550	550
Concrete	1 1/4"	1200	1300
Wood Stud			
2 x 4	3"	520	N/R
2 x 6	3"	520	N/R
OSB 7/16"	7/16"	200	250
Metal Stud	16 gauge	300	N/R
Granite	1 1/8"	500	650
Travertine	7/8"	500	800
Limestone	3"	600	620

This data reflects the results of lab, field and in-house results and provided as a guideline for the designer. Site testing is encouraged for verification of load carrying capacity. (N/R = not recommended)

PHYSICAL CHARACTERISTICS

NOMINAL DIMENSIONS*

Outside Tie Diameter	6mm	8mm	10mm
Mass lb/ft (kg/m)	0.043 (0.062)	0.051 (0.076)	0.072 (0.12)
Cross Sectional Area under load: in ² (mm ²)	0.012 (8)	0.016 (10)	0.02 (13)
Yield Strength ksi (N/mm ²)	108 (745)	108 (745)	93 (640)
Ultimate Tensile Strength ksi (N/mm ²)	130 (1060)	128 (880)	119 (820)
Ultimate Shear Load ksi (pure shear, no bending) lbs (N)	265 (1180)	1169 (5200)	1686 (7500)
Elastic -Modulus ksi (Gpa)	22,625 (156.3)	21,583.5 (148.8)	21,191 (146.1)
Helix Angle (to longitudinal axis)	32.14°	40°	50°
Pitch Length in.(mm)	0.59 (15)	0.79 (20)	1.0 (25.4)
Helical Pitch Length in. (mm)	1.18 (30)	1.57 (40)	1.97 (50)

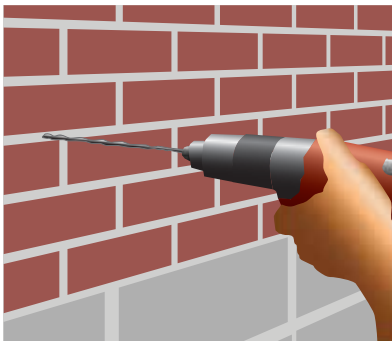
*Material: ASTM A-167 TYPE 304 Stainless Steel

ULTIMATE SHAFT BUCKLING STRENGTH

UNSUPPORTED LENGTH (mm)	CAPACITY (lb)	
	8mm	10 mm
1 inch (25mm)	1620	2335
2 inch (50mm)	1425	1613
4 inch (100mm)	1100	1185
6 inch (150mm)	725	614

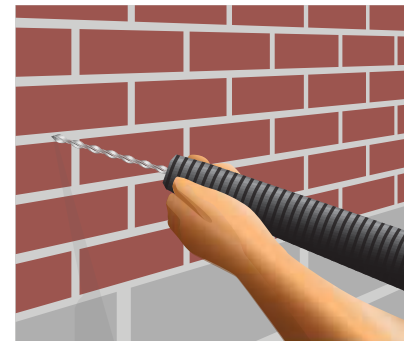
Each construction site is unique and the appropriate use of this product is the responsibility of the engineers, architects, and other professionals who are familiar with the specific requirements of the project. The data reflects results of lab, field and in-house tests and are provided as a guideline for the designer. Site testing is encouraged for verification of load capacity.

INSTALLATION



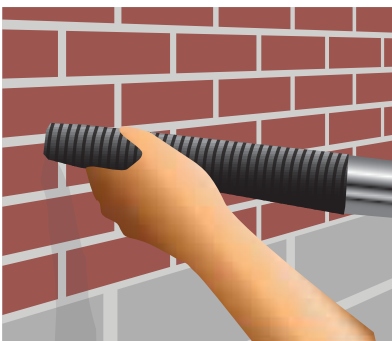
STEP 1

Drill a 3/16" pilot hole using percussion hammer drill (3-jaw-chuck type) through the mortar joint.



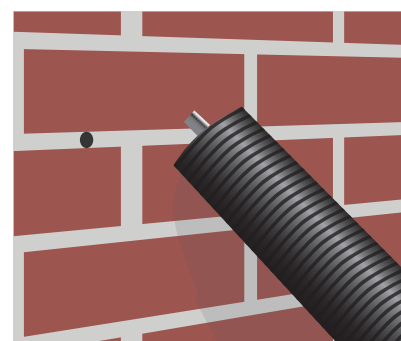
STEP 2

Insert the Stitch-Tie into the setting tool mounted on the rotary hammer SDS drill.



STEP 3

Drive the Stitch-Tie until the nose of the setting tool is hard against the veneer.



STEP 4

The setting tool automatically recesses the Stitch-Tie into the face of the masonry. Patch hole.

CHOOSING THE RIGHT STITCH-TIE

STITCH-TIE LENGTH SELECTION*

Nominal Length	Minimum Drilled Hole Depth	Cavity Range to Backup	
		CMU (solid & hollow)	Concrete
6"	6-5/8"	1" – 0	1-1/2" – 0
7"	7-5/8"	2" – 0	2-1/2" – 1-1/2"
8"	8-5/8"	3" – 0	3-1/2" – 1-1/2"
10"	10-5/8"	5" – 0	5-1/2" – 3-1/2"
12"	12-5/8"	7" – 0	7-1/2" – 5-1/2"

* Based on nominal 4" outer wythe

CHOOSING THE RIGHT DRILL BIT

TYPICAL STITCH-TIE MASONRY BIT SIZE

Facade Material	Stitch-Tie	BACKUP MATERIAL								
		Mortar Joint	Brick	CMU Hollow	CMU Solid	Concrete	Wood Stud	Metal Stud	Tile	Plywood & OSB
Mortar Joint	8mm	3/16"	1/4"	3/16"	3/16"	1/4"	3/16"	3/16"	3/16"	3/16"
	10mm	1/4"	5/16"	1/4"	5/16"	5/16"	1/4"	1/4"	1/4"	1/4"
Brick	8mm	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
	10mm	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"
CMU Hollow	8mm	3/16"	1/4"	3/16"	3/16"	1/4"	3/16"	3/16"	3/16"	3/16"
	10mm	1/4"	5/16"	1/4"	5/16"	5/16"	1/4"	1/4"	1/4"	1/4"
CMU Solid	8mm	1/4"	7/32"	3/16"	3/16"	7/32"	3/16"	3/16"	3/16"	3/16"
	10mm	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"
Precast Concrete	8mm	1/4"	1/4"	1/4"	1/4"	7/32"	1/4"	1/4"	1/4"	1/4"
	10mm	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"
Stone	8mm	1/4"	7/32"	1/4"	1/4"	7/32"	1/4"	1/4"	1/4"	1/4"
	10mm	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"	5/16"

QUALITY ASSURANCE

ON-SITE TESTS

Site testing is encouraged for verification of load capacity. Stitch-Ties can be load-tested to verify the strength of the connection. Our field test appliance is custom-designed for this purpose. A test key, sized for the appropriate diameter of the Stitch-Tie, is quickly attached to the specimen and a test load applied. The easily read dial indicates the applied load.



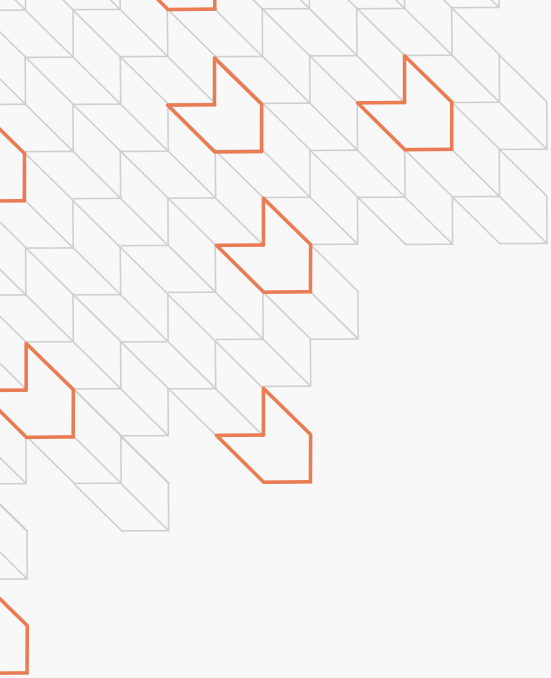
Mortar Joint Performance Test



Pull-Out Capacity Brick



Pull-Out Capacity Tile



KELLY

Field Support

Our on-site service includes troubleshooting, training and installation support.



STEVE

Engineering Support

Engineering details and personalized solutions for your specific needs.



You. Us. The project.

We strive to provide the best construction products on the market, but we also know this business is about people. That's why we dedicate our human resources and services to make your job easier. Our nationwide network of sales representatives is here to do whatever we can to help solve your job-site problems.

COLLEEN

Customer Care

We're real live people who answer the phones!
Really. We're here M-F, 8a-5p, CST.

BRIAN

Field Support

We come to you to support your projects
when and where you need us.



New life for your masonry

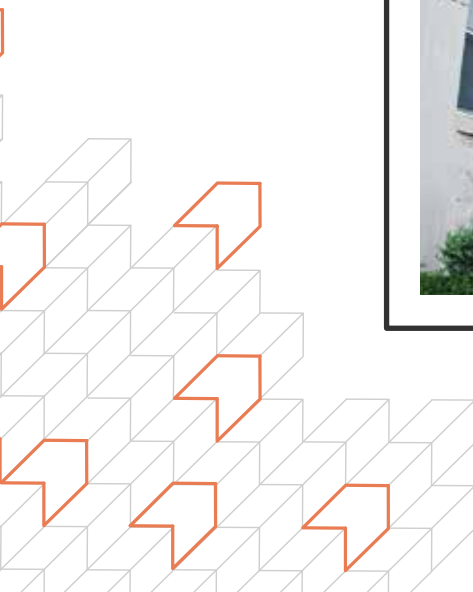
We help architects, engineers, contractors & owners return existing buildings to serviceability and ensure the stability of new buildings. Let us help save the wall of your next new construction or retrofit project.



Re-anchor brick and limestone with Stitch-Ties



Historic limestone repair with Stitch-Ties



Re-anchoring to metal stud with Stitch-Ties



Low-rise facade restoration with Stitch-Ties



Re-anchoring terra cotta with Stitch-Ties

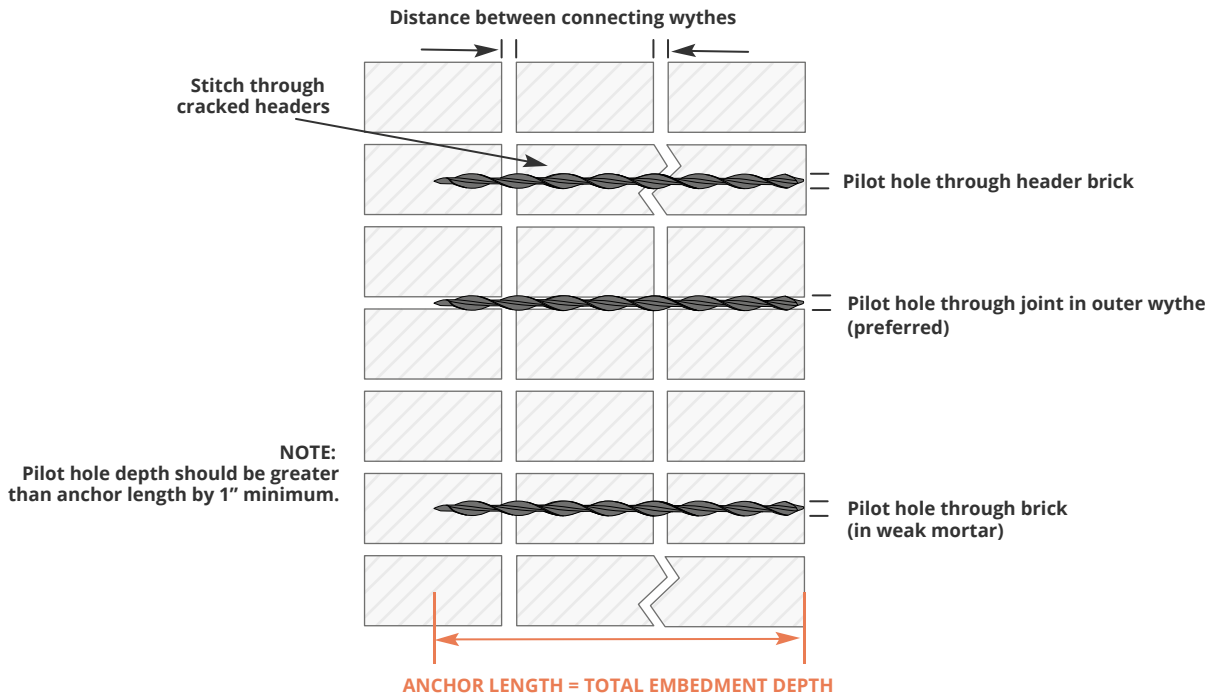


SELECTING THE RIGHT LENGTH OF STITCH-TIE

and installing it properly

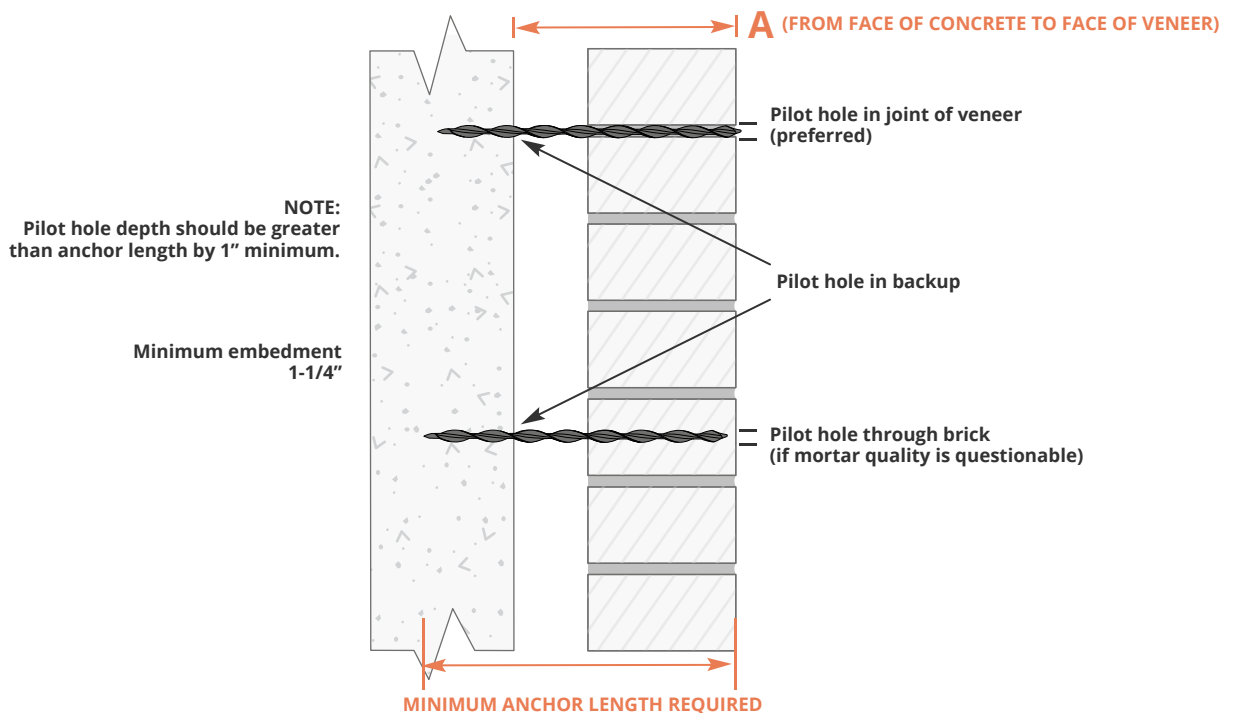
Reconnecting Multi-Wythes Brick

Anchor Length = Total Embedment Depth



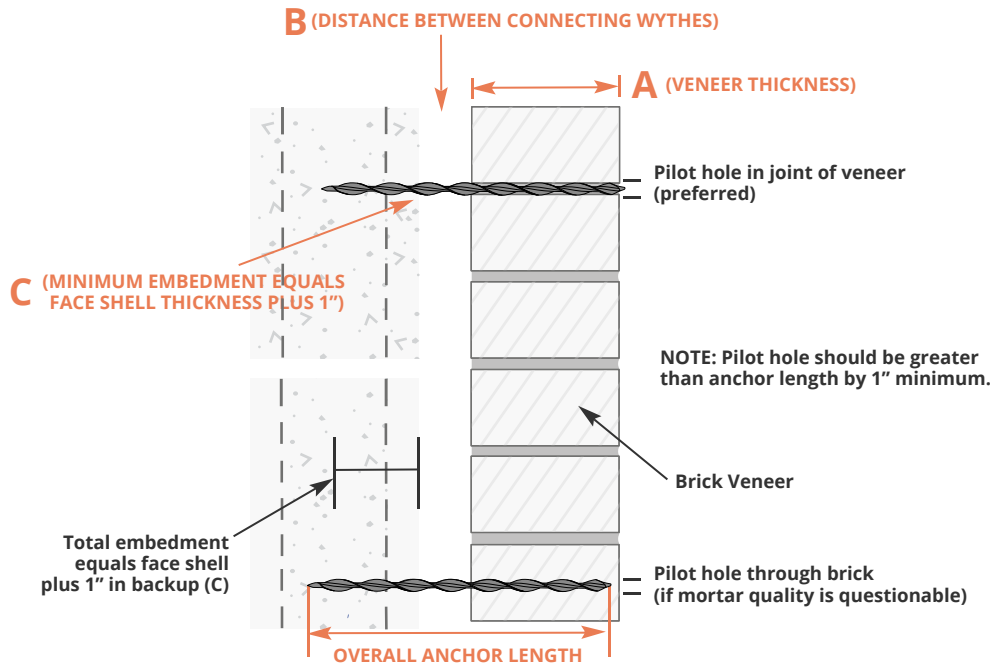
Brick Veneer to Concrete Backup

Minimum Anchor Length Required = $A + 1-1/4"$



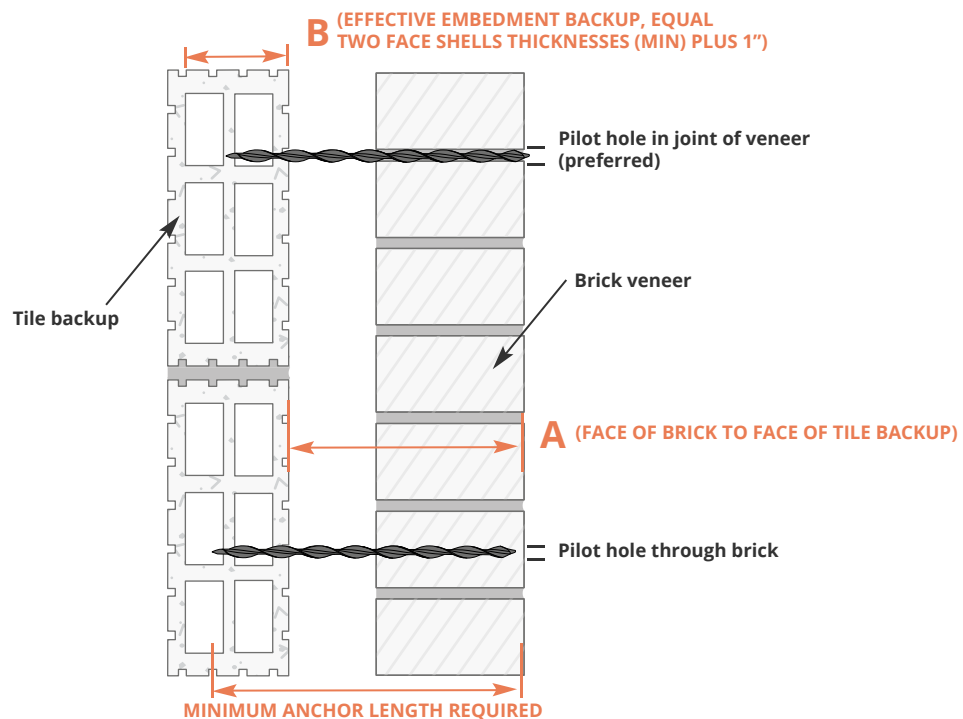
Brick Veneer to Hollow or Solid CMU Backup

Overall Anchor Length = **A + B + C**



Brick Veneer to Clay Tile Backup

Minimum Anchor Length Required = **A + B + 1"**



SELECTING THE RIGHT LENGTH OF STITCH-TIE

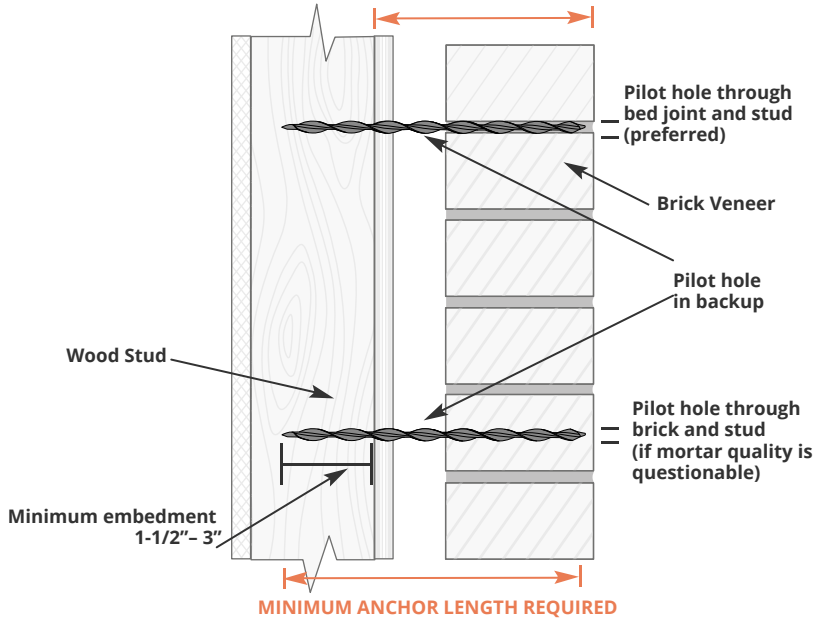
and installing it properly

Brick Veneer to Wood

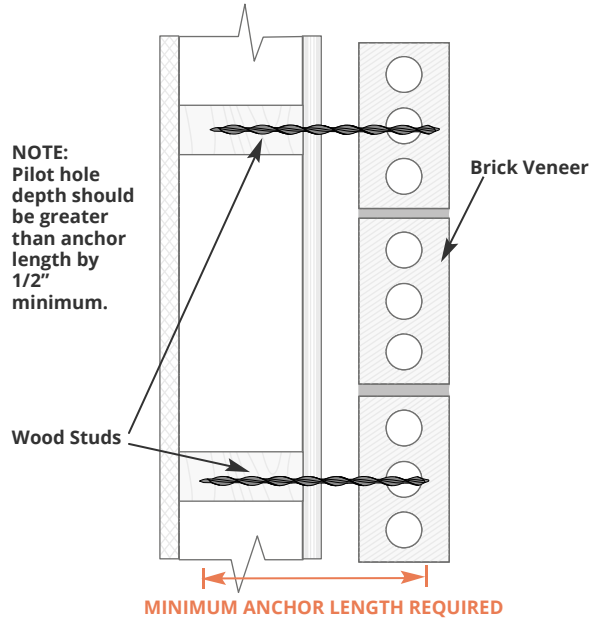
Minimum Anchor Length Required = $A + 1\text{-}1/2\text{'}$

Section view

A (FROM FACE OF BRICK TO FACE OF STUD)



Plan view

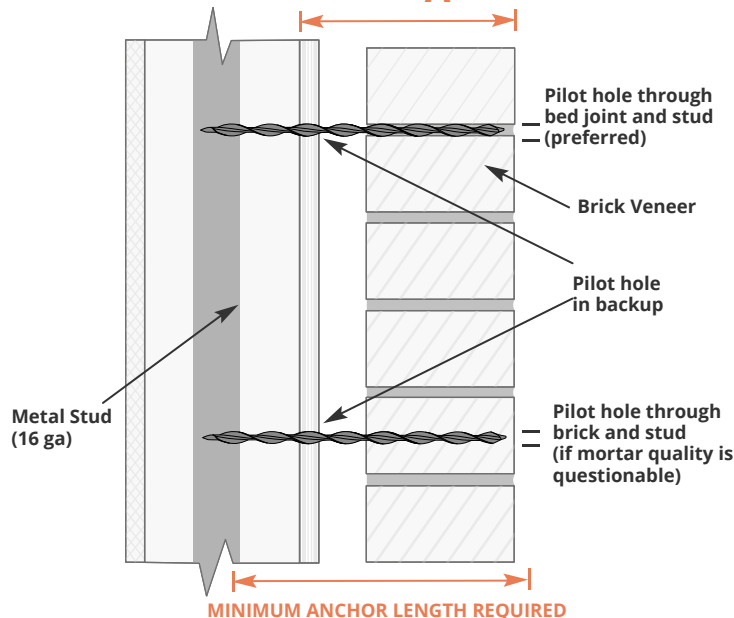


Brick Veneer to Metal Stud

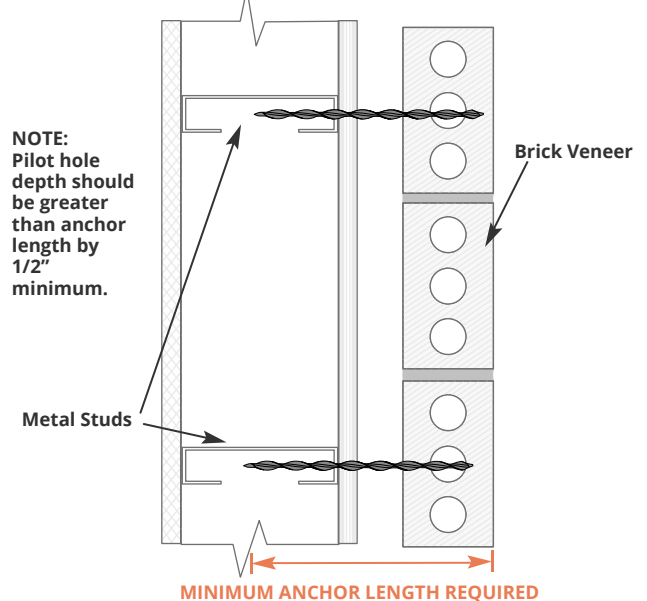
Minimum Anchor Length Required = $A + 1\text{'}$

Section view

A (FROM FACE OF BRICK TO FACE OF STUD)

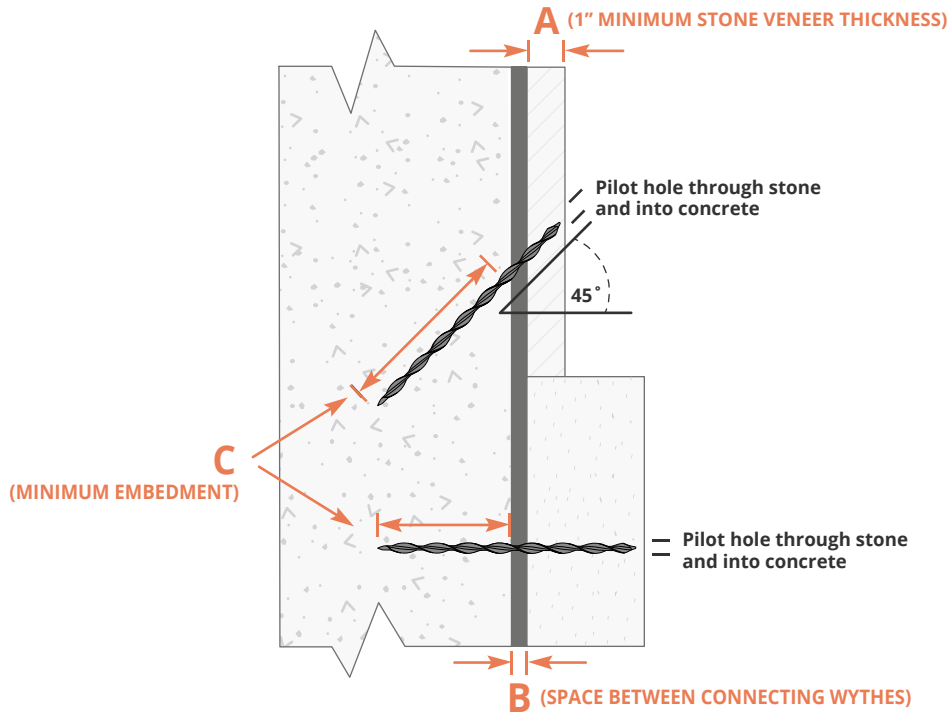


Plan view



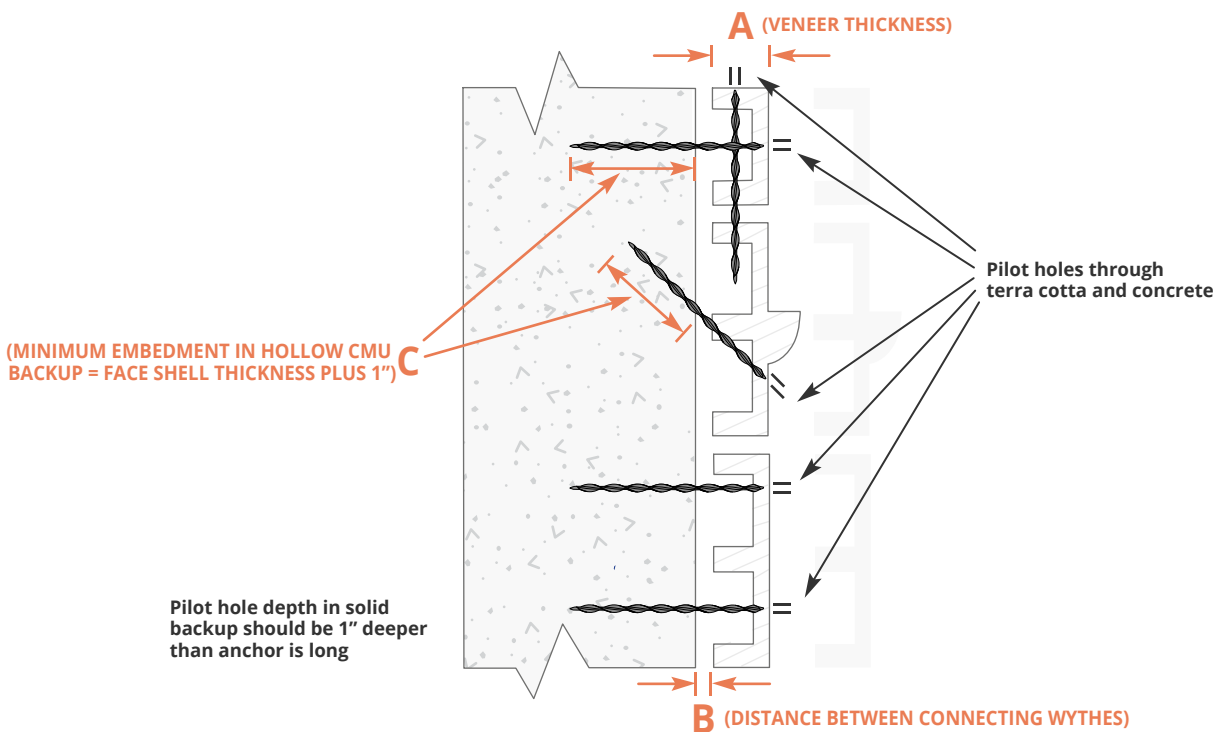
Travertine or Limestone Panels to Concrete Backup

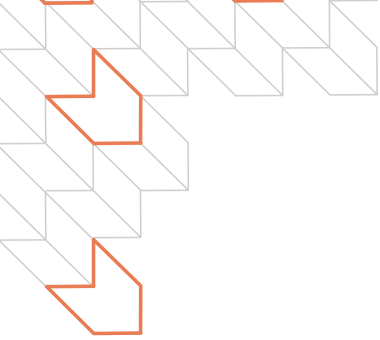
Anchor Length Required = **A + B + C**



Terra Cotta to Concrete or Masonry Backup

Overall Anchor Length = **A + B + C**





STABILIZE EXTERIOR VENEER FROM THE INTERIOR!!



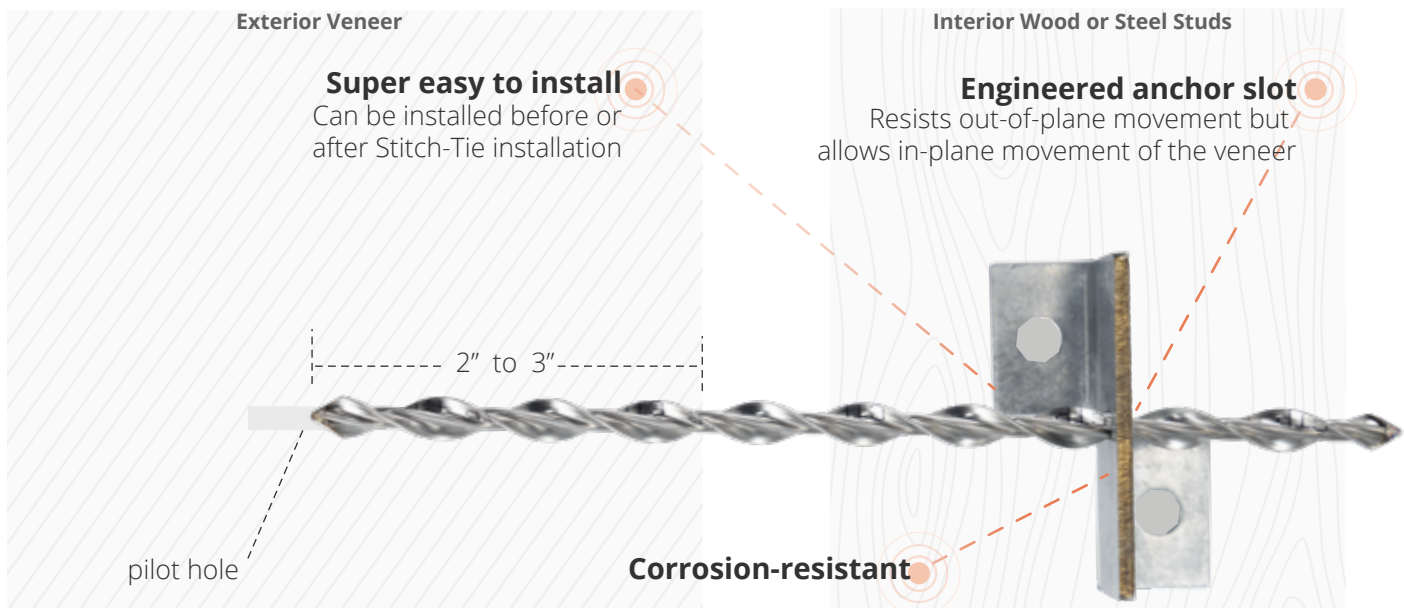
Facade-Tie System

Anchors existing veneers to interior wood or steel studs

The Facade-Tie Bracket enables exterior masonry facades to be re-attached from the interior of structures. This eliminates any exterior hole drilling, mortar patch matching, or costly scaffolding expenses. This makes the Facade-Tie Bracket ideal for fortifying masonry veneer during remodeling, build-outs or basic building renovations.

Applications

Use where there is a need to reconnect or add ties to an existing facade from an interior wood or steel stud. The Facade-Tie system is installed from the interior of the structure. A building or home interior renovation project sometimes requires an exterior wall to be retrofitted from the inside. This can be due to termite, water, fire, mold damage, seismic fortification, or, just part of the building renovation condition. When the wall has an existing masonry veneer, which is to remain, and new studs are part of the retrofit scheme, the two materials need to be anchored together by using the Stitch-Tie fastener to bridge the distance between the brick wall and the stud, the installed fastener anchors to the brick wall. The Facade-Tie system is then connected with the Stitch-Tie by engaging the fastener in the slot. The Facade-Tie and Stitch-Tie fastener assembly is then attached to the stud. This anchor system restrains the wall from moving outward or inward.



USE FOR EXTREMELY DENSE
BACKUP MATERIAL



Stitch-Tie Asymmetric

Dual-diameter helical anchor for harder backup material

The Stitch-Tie® Asymmetric features one end with a smaller diameter that makes it ideal for embedding into harder backup materials. The 8-mm or 10-mm helical outer diameter on the other end is designed to engage with softer masonry veneer materials. The result provides an optimum tension capacity for the connection.

Stitch-Tie Asymmetric wall tie reduces the outside diameter of a regular Stitch-Tie from 8mm to 6.5mm (5/16" to 0.255") and 10mm to 8.5mm (0.39" to 0.334").

Applications

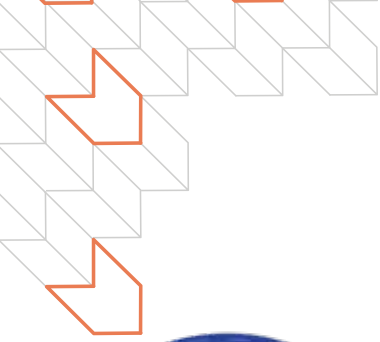
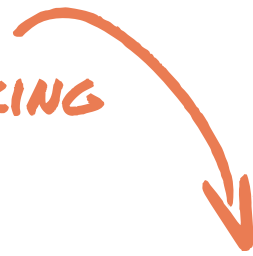
Concrete backup density and hardness can restrict 8mm or 10mm diameter helical ties' entry. A larger pilot hole would usually be required. By concurrently enlarging the veneer pilot hole, a capacity reduction in the veneer portion of the anchorage can occur. When connecting a soft external substrate to harder internal walls, use our dual-diameter stainless steel helical wall tie. The balance of the ties' length retains the 8mm or 10mm helical outer diameter for engaging with the softer masonry veneer material. The result provides an optimum tension capacity for the connection.

Characteristics

Size	8/6.5mm diameter (5/16"/0.255") 10/8.5mm diameter (.393"/0.334")
Pitch	40+/-1 mm (1.574+/-0.039") for 8mm diameter 50+/-1 mm (1.968+/- 0.039") for 10mm diameter
Material	Austenitic Stainless Steel AISI Type 304 Austenitic Stainless Steel AISI Type 316 (available upon request)
Tensile Strength	6.5mm = 7200N (1618 lb) 8.5mm = 8800N (1978 lb)
Yield Strength	6.5mm = 745N/mm2 (108,053psi) 8.5mm = 640N/mm2 (92,824psi)
E-Modulus	6.5mm = 156.269Gpa (22,665Kin2) 8.5mm = 148.813Gpa (21,584Kin2)



STABILIZE STAIR-STEP CRACKING



Stitch-Tie Bar Kit

Provides reinforcement in mortar joints and dutchmen

The stainless steel Stitch-Tie Bar repairs cracked masonry and provides reinforcement to create structural beams from existing brick veneers. The Stitch-Tie Bar comes with SureGrout, a high-performance, non-oxidizing, non-shrink, thixotropic, cement-based grout that's suitable for injecting by hand.



SUREGROUT

SureGrout (8700psi, 60 Mpa) for standard masonry. SureGrout S (3900psi, 27.5 Mpa) available for soft masonry.



STITCH-TIE BAR

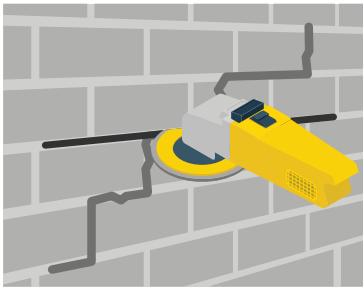
4.5mm x 33ft coil,
6mm x 40" (1 meter) long or 10ft coil



GUN AND NOZZLE

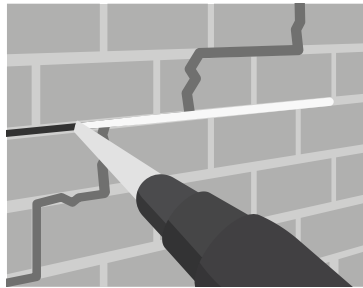


MIXING PADDLE



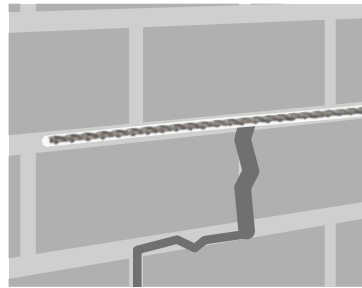
Step 1

Grind away existing mortar, 20" minimum on each side of crack, 1-1/2"-2" deep. Clean with water.



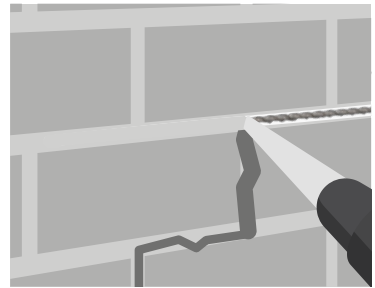
Step 2

Apply a bead of SureGrout at the base of the ground joint.



Step 3

Insert Stitch-Tie Bar into bead of SureGrout.



Step 4

Apply second/third bead of SureGrout over Stitch-Tie Bar, and compact with appropriate trowel.

PATCH DAMAGED CONCRETE



Concrete Patch-Tie

Anchors damaged concrete to patching material

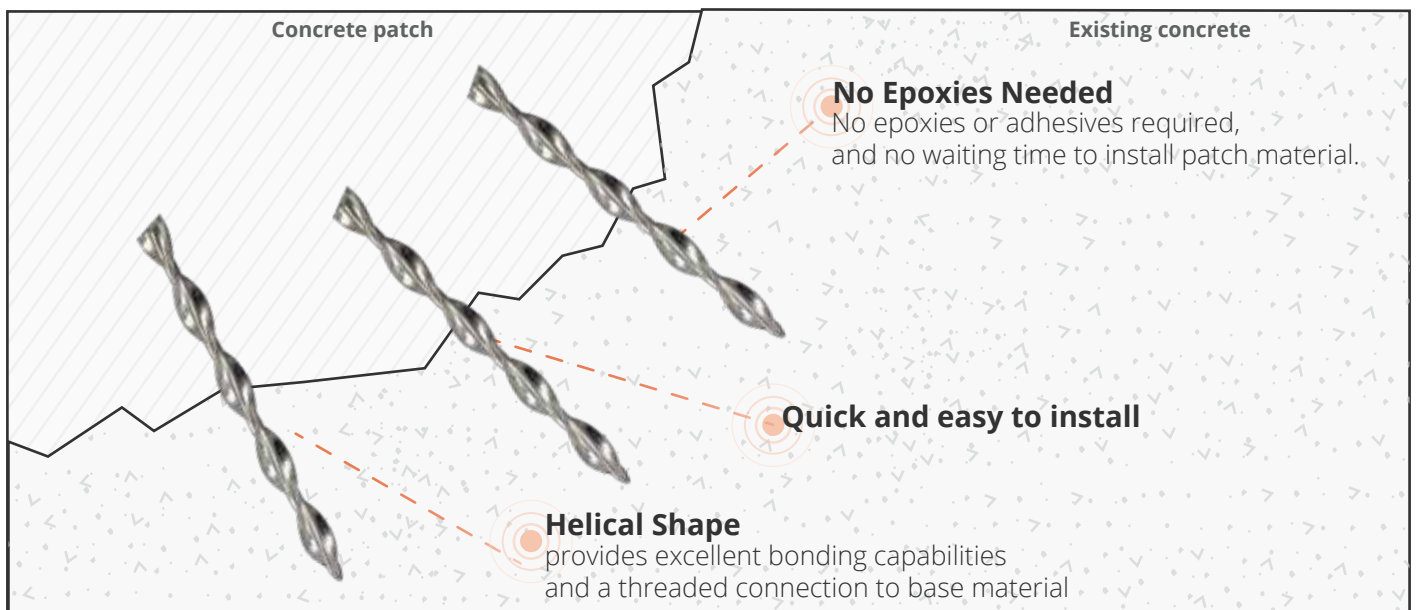
The Concrete Patch-Tie is a stainless steel helical-shaped anchor that provides a non-corrosive mechanical connection between damaged concrete and patching material. It's typically applied with concrete patch repairs to balconies, curbs, coping, precast, columns, beams and flatwork.

Applications

The Concrete Patch-Tie is a stainless steel helical-shaped Stitch-Tie anchor and is used to provide a non-corrosive mechanical connection between damage concrete and patching material. The anchoring system is typically applied with concrete patch repairs to balconies, curbs, coping, precast, columns, beams flat work, etc., as a means to key the patch material mechanically to the parent structure. The pin can be used to attach patches to limestone.

Installation

- 1.) Clean area to be patched and remove any loose material. Treat exposed rebar as required.
- 2.) Drill a 1/4" hole in the concrete 1-3/4" – 2" deep. Ties should be spaced one per 6" in all directions, and a 2" edge distance is required. A minimum of 2 Concrete Patch-Ties per patch is required.
- 3.) Using the Concrete Patch-Tie setting tool, install the anchor in the predrilled hole with the aid of a rotary hammer (SDS preferred). Hammer into place until the tool bottoms out.
- 4.) The exposed tie portion should not extend above the patch height. If so, trim or bend anchor to attain the proper profile.
- 5.) Apply patching material.



ORDER GUIDE

Product	Catalog number	qty / box	lbs / box
8mm Diameter Stitch-Tie - 304 Stainless Steel			
Stitch-Tie Helical Anchor 8mm x 3" Patch Tie (75mm) 304SS	63010-M8N75STS4	25	2.00
Stitch-Tie Helical Anchor 8mm x 4" (100mm) 304SS	63010-M8N100STS4	100	3.00
Stitch-Tie Helical Anchor 8mm x 6" (150mm) 304SS	63010-M8N150STS4	100	3.00
Stitch-Tie Helical Anchor 8mm x 7" (175mm) 304SS	63010-M8N175STS4	100	3.20
Stitch-Tie Helical Anchor 8mm x 8" (200mm) 304SS	63010-M8N200STS4	100	3.70
Stitch-Tie Helical Anchor 8mm x 10" (250mm) 304SS	63010-M8N250STS4	100	4.50
Stitch-Tie Helical Anchor 8mm x 12" (300mm) 304SS	63010-M8N300STS4	50	2.75
Stitch-Tie Helical Anchor 8mm x 14" (350mm) 304SS	63010-M8N350STS4	50	3.50
Stitch-Tie Helical Anchor 8mm x 16" (400mm) 304SS	63010-M8N400STS4	50	3.80
Stitch-Tie Helical Anchor 8mm x 18" (450mm) 304SS	63010-M8N450STS4	50	4.30
Stitch-Tie Helical Anchor 8mm x 24" (600mm) 304SS	63010-M8N600STS4	25	3.00
Stitch-Tie Helical Anchor 8mm x 30" (750mm) 304SS	63010-M8N750STS4	25	4.00
10mm Diameter Stitch-Tie - 304 Stainless Steel			
Stitch-Tie Helical Anchor 10mm x 6" (150mm) 304SS	63010-M10N150STS4	50	2.00
Stitch-Tie Helical Anchor 10mm x 7" (175mm) 304SS	63010-M10N175STS4	50	2.10
Stitch-Tie Helical Anchor 10mm x 8" (200mm) 304SS	63010-M10N200STS4	50	2.20
Stitch-Tie Helical Anchor 10mm x 10" (250mm) 304SS	63010-M10N250STS4	50	2.80
Stitch-Tie Helical Anchor 10mm x 12" (300mm) 304SS	63010-M10N300STS4	50	3.40
Stitch-Tie Helical Anchor 10mm x 14" (350mm) 304SS	63010-M10N350STS4	50	4.00
Stitch-Tie Helical Anchor 10mm x 16" (400mm) 304SS	63010-M10N400STS4	50	4.60
Stitch-Tie Helical Anchor 10mm x 18" (450mm) 304SS	63010-M10N450STS4	50	5.20
Stitch-Tie Helical Anchor 10mm x 24" (600mm) 304SS	63010-M10N600STS4	25	3.50
Stitch-Tie Helical Anchor 10mm x 30" (750mm) 304SS	63010-M10N750STS4	25	4.00
8mm Diameter Asymmetrical Stitch-Tie - 304 Stainless Steel			
Stitch-Tie Helical Asymmetrical Anchor 8mm x 6" (150mm) 304SS	63030-M8N150STA4	100	3.00
Stitch-Tie Helical Asymmetrical Anchor 8mm x 7" (175mm) 304SS	63030-M8N175STA4	100	3.20
Stitch-Tie Helical Asymmetrical Anchor 8mm x 8" (200mm) 304SS	63030-M8N200STA4	100	3.70
Stitch-Tie Helical Asymmetrical Anchor 8mm x 9" (225mm) 304SS	63030-M8N225STA4	100	4.20
Stitch-Tie Helical Asymmetrical Anchor 8mm x 10" (250mm) 304SS	63030-M8N250STA4	100	4.50
Stitch-Tie Helical Asymmetrical Anchor 8mm x 12" (300mm) 304SS	63030-M8N300STA4	100	5.20

1) All anchors are Type 304 Stainless, Type 316 SS available upon request. 2) Other lengths available upon request

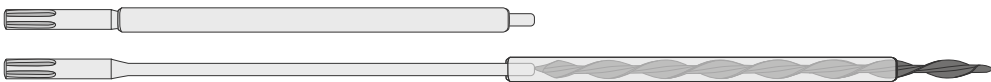


Product	Catalog number	qty / box	lbs / box
10mm Diameter Asymmetrical Stitch-Tie - 304 Stainless Steel			
Stitch-Tie Helical Asymmetrical Anchor 10mm x 6" (150mm) 304SS	63030-M10N150STA4	50	2.00
Stitch-Tie Helical Asymmetrical Anchor 10mm x 7" (175mm) 304SS	63030-M10N175STA4	50	2.10
Stitch-Tie Helical Asymmetrical Anchor 10mm x 8" (200mm) 304SS	63030-M10N200STA4	50	2.20
Stitch-Tie Helical Asymmetrical Anchor 10mm x 9" (225mm) 304SS	63030-M10N225STA4	50	2.40
Stitch-Tie Helical Asymmetrical Anchor 10mm x 10" (250mm) 304SS	63030-M10N250STA4	50	2.80
Stitch-Tie Helical Asymmetrical Anchor 10mm x 12" (300mm) 304SS	63030-M10N300STA4	50	3.40
Stitch-Tie Bar Crack Reinforcement/Crack Repair Products			
Stitch-Tie Bar 6mm x 40" (1000mm) 304SS	63010-M6N1000STS4	25	4.00
Stitch-Tie Bar 6mm x 10' (3000mm) 304SS	63060-M10NM6STC4	1	.40
Stitch-Tie Bar 6mm x 33' (10,000mm) 304SS	63010-M6N39600STS4	1	1.50
Stitch-Tie Bar 4.5mm x 33' (10,000mm) 304SS	63060-M10NM4.5STC4	1	2.00
Stitch-Tie Seismic Reinforcement Connector	62900-RC820	50	4.00
Sure Grout 3 Liter Tub (3 tubs used for 25 bars)	62900-SGS30	1	15.00
Manual Grout Applicator Gun - 36 cu inches	62900-PGGUNKIT	1	8.00
SS Grout Applicator Nozzle	62900-95CSN	1	1.00
1) All anchors are Type 304 Stainless, Type 316 SS available upon request. 2) Other lengths available upon request			

ACCESSORIES

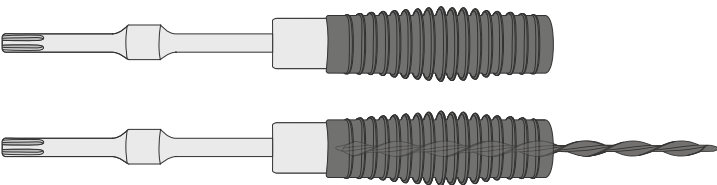
ECONOMY SETTING TOOL

installs stitch-ties, available in 8mm or 10mm



SPRING-LOADED SETTING TOOL

heavy-duty tool to install stitch-ties, in 8mm or 10mm



Warranty

Seller makes no warranty of any kind, expressed or implied, except that the goods sold under this agreement shall be of the standard quality of the seller, and buyer assumes all risk and liability resulting from the use of the goods, whether used singly or in combination with other goods. Seller neither assumes nor authorizes any person to assume for seller any other liability in conjunction with the sale or use of the goods sold, and there is no oral agreement or warranty collateral to or affecting this transaction.

Warning

The information contained in this publication does not constitute any professional opinion or judgement and should not be used as a substitute for competent professional determinations. Each construction project is unique and the appropriate use of this product is the responsibility of the engineers, architects, and other professionals who are familiar with the specific requirements of the project.



Grand Central Station
New York, NY



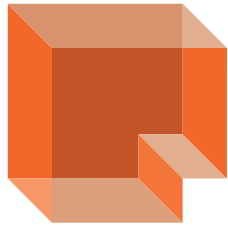
Wrigley Building
Chicago, IL



United States Capitol
Washington D.C.



R.W. Kern Center
at Hampshire College



PROSOCO

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