PROSOCO

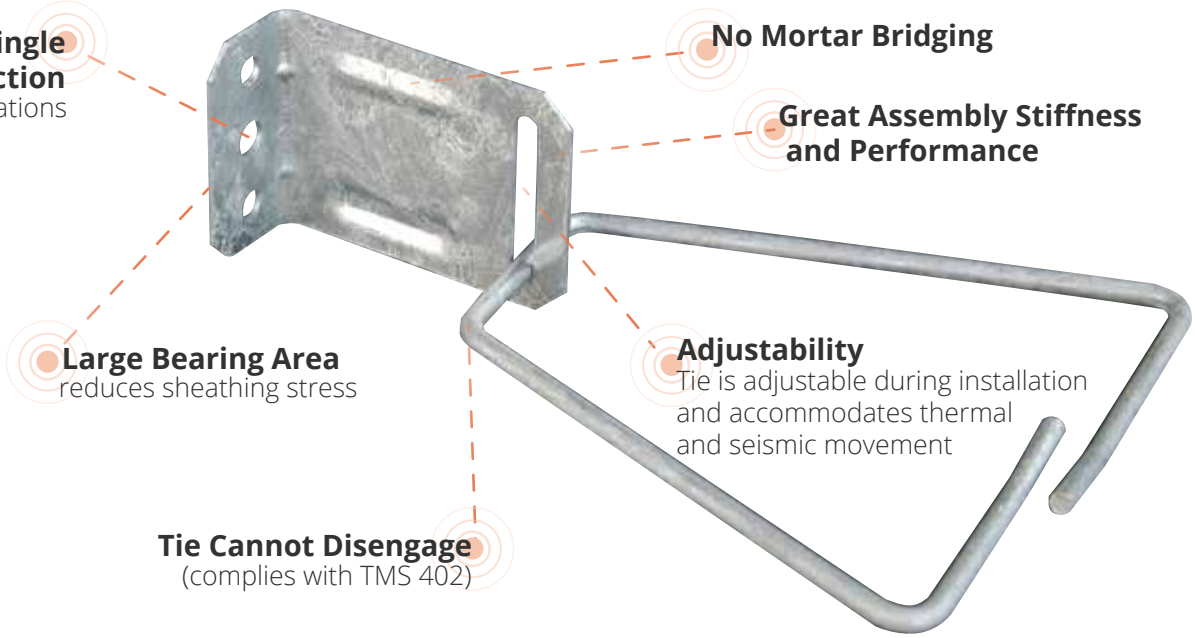
MASONRY VENEER-TIE

A veneer anchoring system that helps keep the air barrier intact and the veneer in place

The Masonry Veneer-Tie is a recommended brick tie for optimum air barrier integrity. It's recommended for masonry veneer anchorage to metal stud, wood stud, masonry, and concrete substrates. Ideal for new construction or retrofit masonry applications, this system contributes to green building construction and restoration projects.

- **STRENGTH OF PERFORMANCE**
- **CORROSION-RESISTANT**
- **SAVES LABOR**
- **MODULAR SYSTEM**
- **ADJUSTABLE DURING INSTALLATION**
- **EASY & FAST INSTALLATION**

For anchored veneers, the Masonry Veneer-Tie assembly should be applied for cavity wall construction of Level 1 institutional type and Level 2 industrial type buildings for seismic performance categories A through E. The Masonry Veneer-Tie system can be used with and without rigid insulation board.



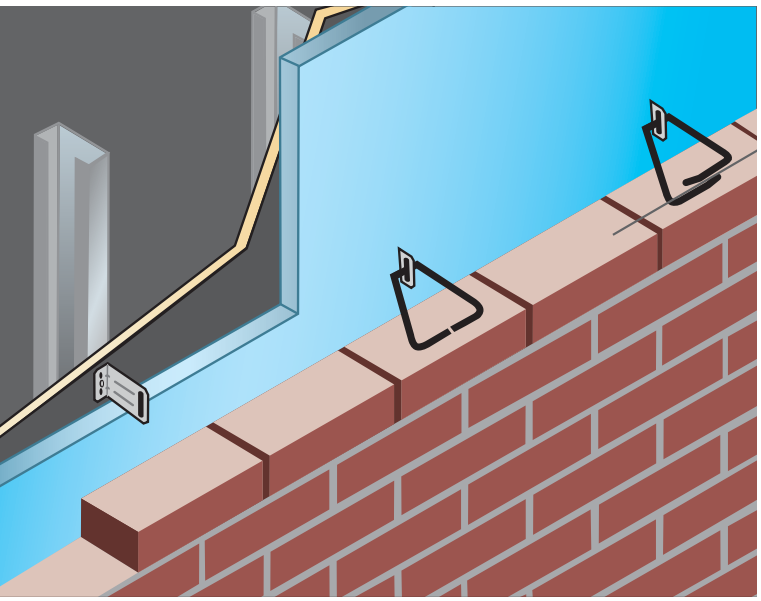
MASONRY VENEER-TIE

A Brick Veneer Anchor for Steel Stud, Wood Stud, Masonry or Concrete Construction

The Masonry Veneer-Tie is designed to meet or exceed relevant codes and building standards for veneer ties in the United States. The Masonry Veneer-Tie is a patented wire tie and plate combination system which provides adjustability, minimal free-play, strength, stiffness, positive connection, and corrosion resistance.

Using the patented WT-Tie wire tie for reinforcement or the standard V-Tie, it meets relevant veneer tie requirements of TMS 402. The anchor plate has been designed for mounting on the surface of sheathing or stud, and accommodates properly oriented insulation board without puncture.

The vertical orientation of the Masonry Veneer-Tie base plate eliminates the threat of mortar build-up on the plate during veneer construction. That mortar build-up, or mortar bridging, creates a moisture bridge to the backup material.



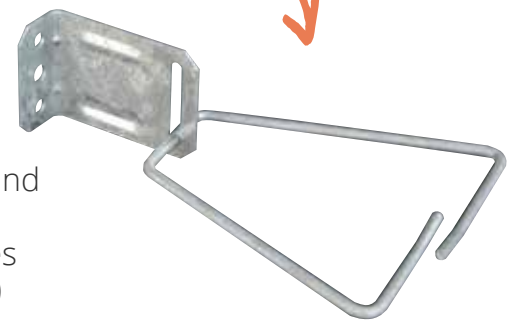
Masonry Veneer-Tie Base Plate
1" (25 mm) W x 2" (50 mm) H,
16 gauge (1.5 mm)
Carbon Steel ASTM A 1008,
Hot Dip Galvanized per ASTM A153, C1 B2;
Stainless Steel per ASTM A666; ASTM A480

WT-Tie: Multifunctional Triangle Wall Tie or Standard V-Tie
3/16" (4.76 mm) Diameter Wire,
Carbon Steel per ASTM A1064,
Stainless Steel (S.S.) Type 304 per ASTM A580; A-276
Hot Dip Galvanized per ASTM A153, C1 B2;
Use for seismic (WT) and non-seismic (V) conditions.

The vertical orientation assures positive contact and spacing

Masonry Veneer-Tie Performance

Veneer Anchor System for Optimum Air Barrier Integrity



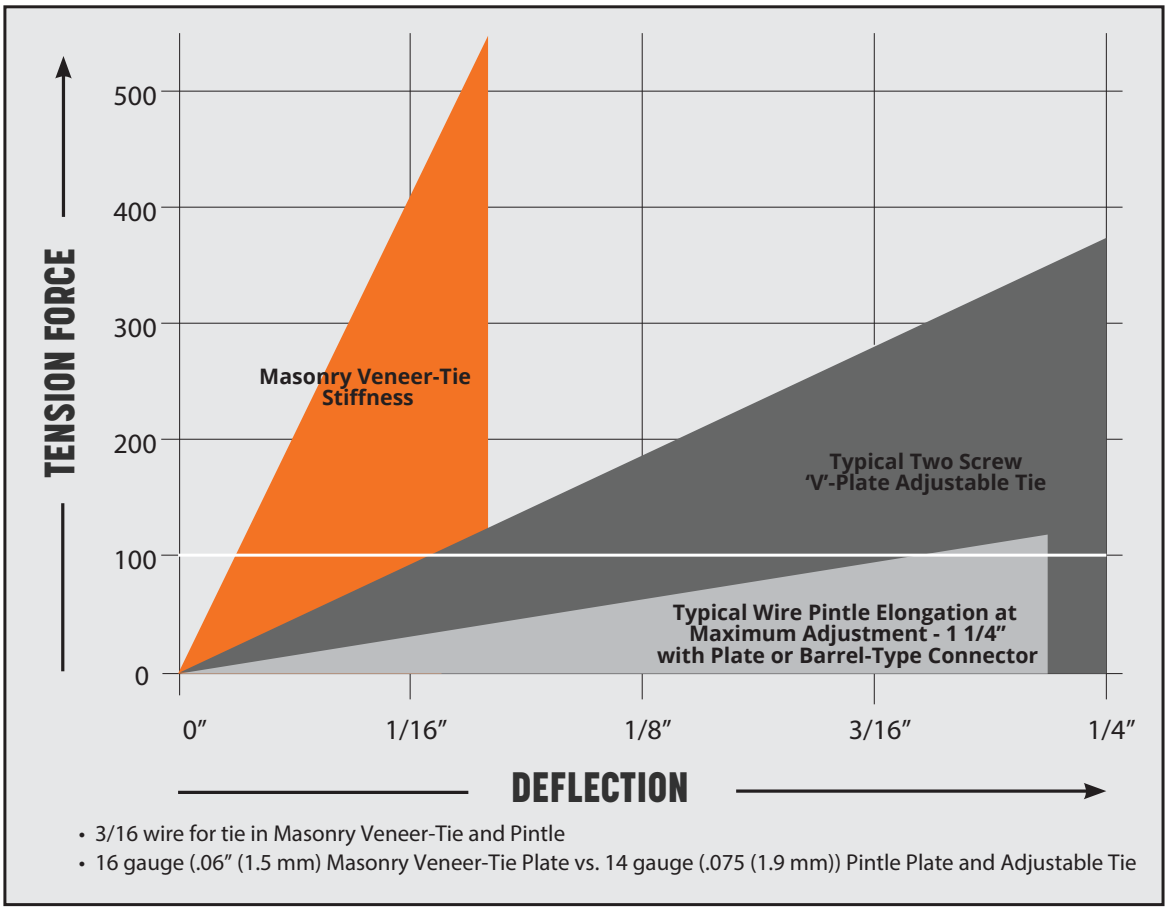
The Masonry Veneer-Tie has an ultimate capacity of 717 lbs tension and 1,050 lbs compression at its maximum adjustability (weakest location for the tie) for a 4" cavity. Competitive products such as pintle type ties have an ultimate tension and compression capacity ranging from 120 lbs to 198 lbs at the maximum adjustability.

The Masonry Veneer-Tie stiffness is 6,410 lbs/inch in tension and 12,000 lbs/inch in compression at its maximum adjustability." Competitive ties, such as barrel types, can be as low as 515 lb/inch in tension and 3170 lbs/inch in compression at their maximum adjustability. For a 100 lb applied load, the Masonry Veneer-Tie experiences a deflection of 0.015". Competitive system deflections typically range from 0.058" for "V" shaped plates and triangle ties up to 0.194" for pintle and plates. The resulting stiffness of these competitive types of anchors are 1,700 lb/in and 515 lb/in respectively.

The Masonry Veneer-Tie is manufactured with 0.030" of free play (space between the tie and the slotted plate) versus competitive models with 0.050" of slop between the pintle and plate. This greater stiffness and less free play prevents excessive veneer deflection which can cause cracking and leakage through the veneer.

Criteria	Data	U.S. Standards
1. Free Play: in. (mm)	0.030 in. [maximum] (0.76 mm)	≤ 0.050 in. (1.25 mm)
2. 100 lbs. (0.45 kN) Deflection: in.(mm.) • Free Play not included • Free Play included	 0.010 in. (0.25 mm) 0.040 in. (1.0 mm)	 ≤ 0.050 in. (1.25 mm) ≤ 0.100 in. (2.5 mm)
3. Anchor Stiffness	6410 lbs. per in. Tension 12000 lbs. per in. Compression	
4. Ultimate Capacity – Tension • Deflection @ 400 lbs. (1.8 kN) • Deflection at Failure: in. (mm.) (Free Play not included)	717 lbs. (3.2 kN) .030 in. (0.75 mm) .248 in. (6.2 mm)	
5. Ultimate Capacity – Compression	1050 lbs. (4.7 kN)	
6. Maximum Recommended Spacing		≤ 32 in. (800 mm) horizontally ≤ 25 in. (625 mm) vertically Not to exceed one tie per 2.7 sq. ft. (0.25m2)
7. In-Plane Differential Movement	± 1/2" (12 mm)	

PERFORMANCE COMPARISON TO TYPICAL MASONRY TIES



1. The performance values are based on test results utilizing a 16-gauge base plate. The base plate was mounted onto hollow steel section using 1/4" steel bolts, in order to simulate an incompressible backing.

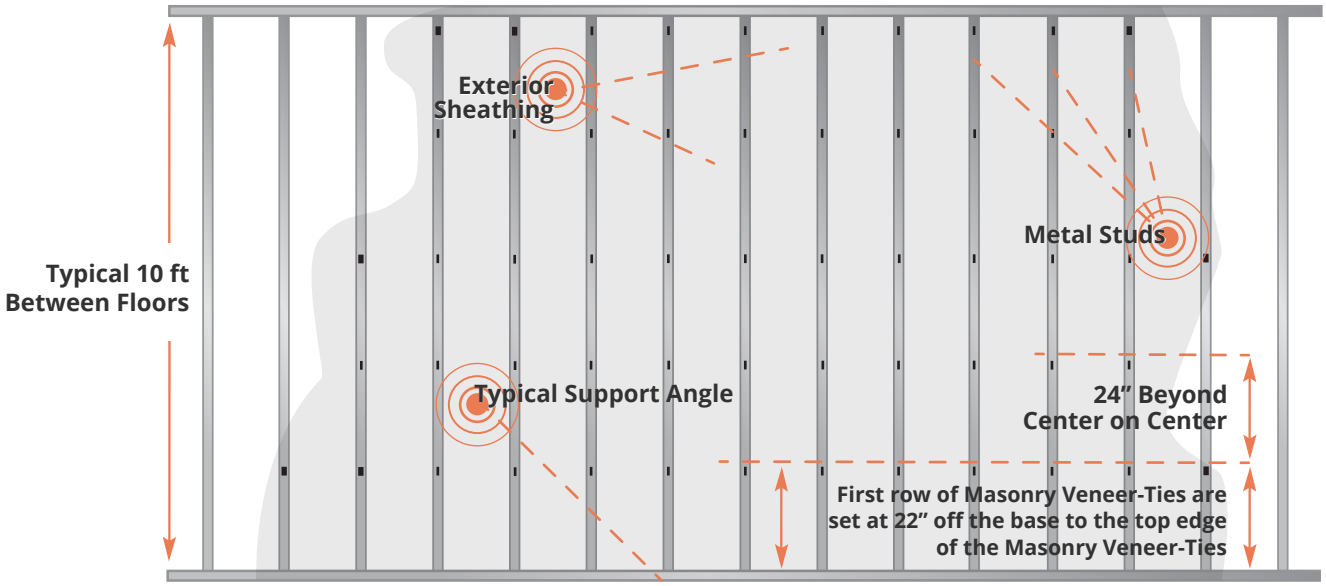
2. Codes and Standards Compliance: Meets or exceeds relevant veneered masonry construction sections and recommendations of building code requirements and building standards, including:

- TMS 402/ACI 530/ASCE 5 and TMS 602/ACI 530.1/ASCE 6 Building Code Requirements for Masonry Structures
- Western States Clay Products BV/SS Design Guide
- Brick Industry Association Technical Notes 28b, 44b, 21a & b
- International Building Code

INSTALLATION FOR METAL STUD

Typical Brick Veneer Metal Stud Layout

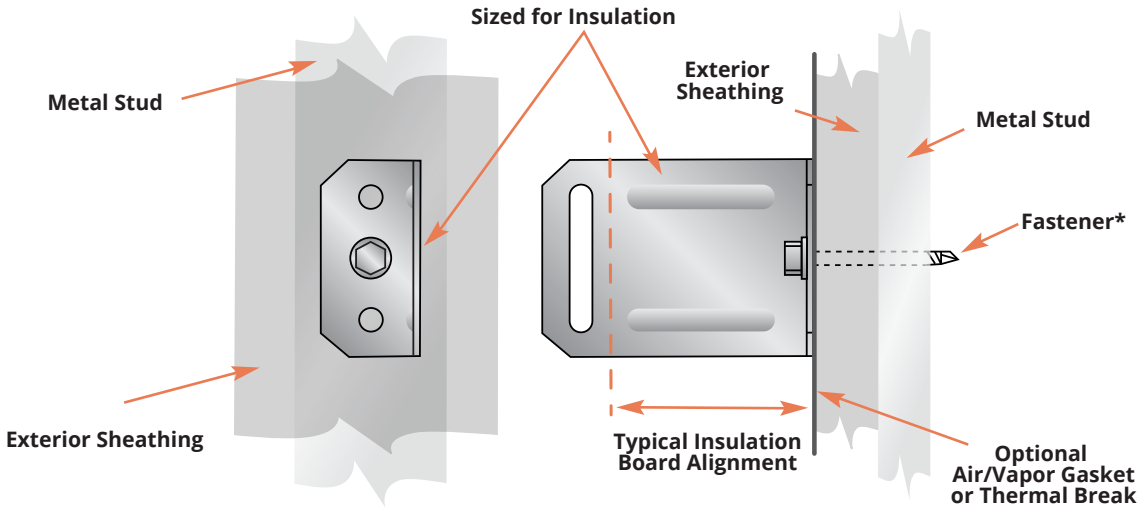
Note: Exterior sheathing made to look transparent to reveal metal studs for illustration purposes only.



Masonry Veneer-Ties are surface-mounted on the exterior sheathing typically 16" horizontal by 24" vertical (see below), and attached with appropriate fastener(s).

Typical Masonry Veneer-Tie attached to metal stud

Note: Exterior sheathing made to look transparent to reveal metal studs for illustration purposes only.



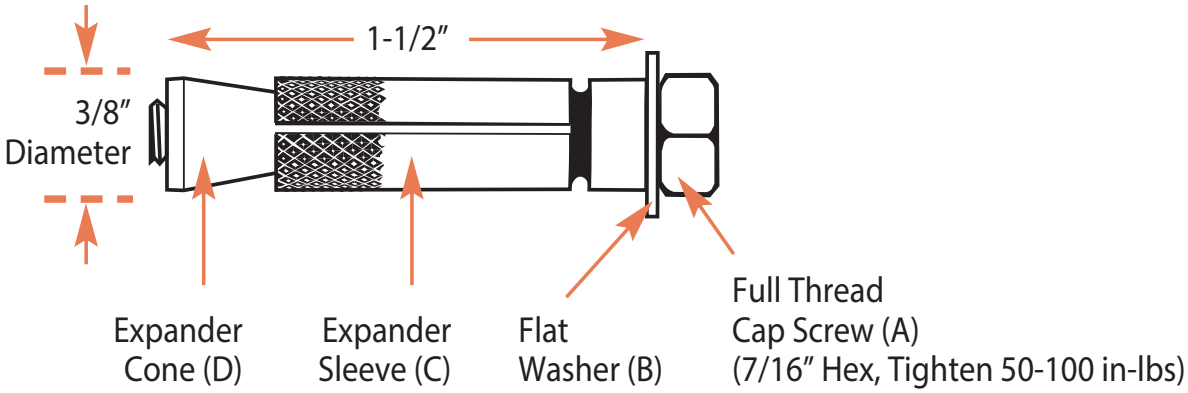
***** When using one (1) fastener in metal stud 16-gauge or thicker, use #12 - #14 at center hole location in Masonry Veneer-Tie plate. When using #10 fastener, use two (2) #10 fastener at top and bottom hole locations in plate.

Fastener for Masonry and Concrete

Masonry Veneer Fastener

Mechanical fastener for Veneer-Tie installation to existing masonry or concrete

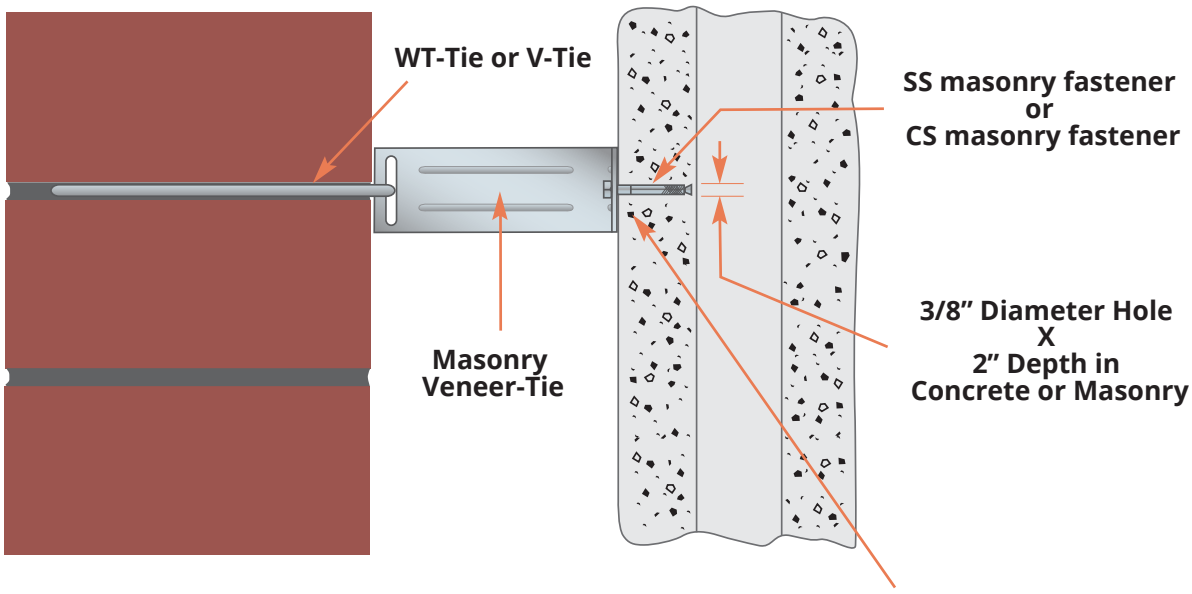
Torque-activated fastener with high-capacity loads that safely connects new veneer anchors to existing masonry or concrete back-up. Ideal for re-cladding masonry after a collapse or for new construction of masonry veneers. A more reliable fastener than nail-in or self-tapping screws that provides a clamping force compatible to brick ties and anchors.



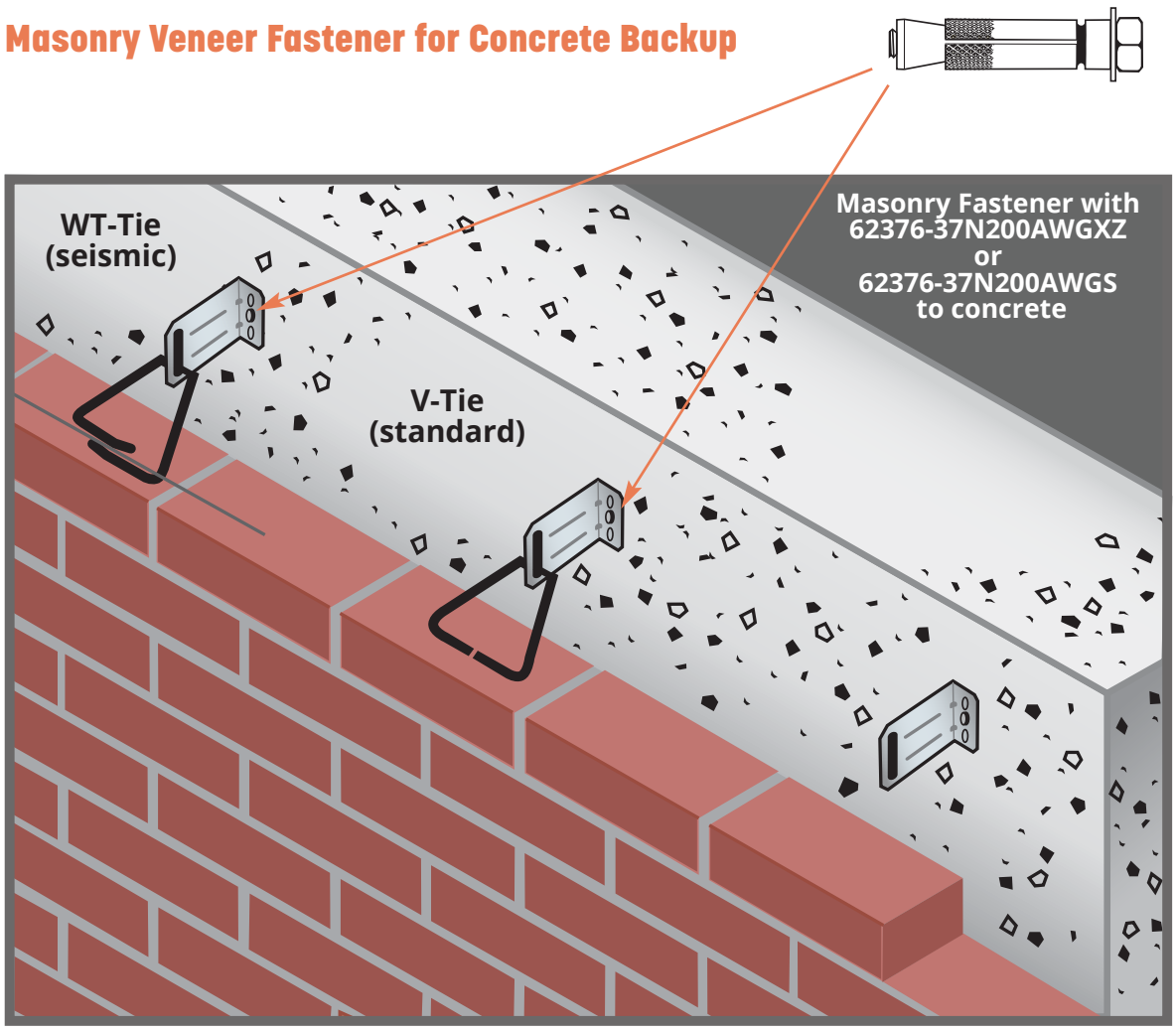
- Torque-Activated: 50-100 in - lb
- Hex Head Finish - Low Profile
- Bolt Head Provides Inspection Source, Low Profile Avoids Insulation or Tie Interference
- Zinc-Plated or Stainless Bolt with Brass Expanders
- Clamping force > Brick-Tie Capacity

Item #	A	B	C	D
Carbon Steel Masonry Fastener # 62376-37N200AWGXZ	ZINC PLATED, A307 ASME B18.2.1	ZINC PLATED ANSI B18.22.1TYA	ASTM A-360 Brass	ASTM A-360 Brass
Stainless Steel Masonry Fastener # 62376-37N200AWGS	300 SERIES STAINLESS STEEL ASME B18.2.1	ANSI B18.22.1TYA	ASTM A-360 Brass	ASTM A-360 Brass

Masonry Veneer Fastener for Masonry Back-up



Masonry Veneer Fastener for Concrete Backup

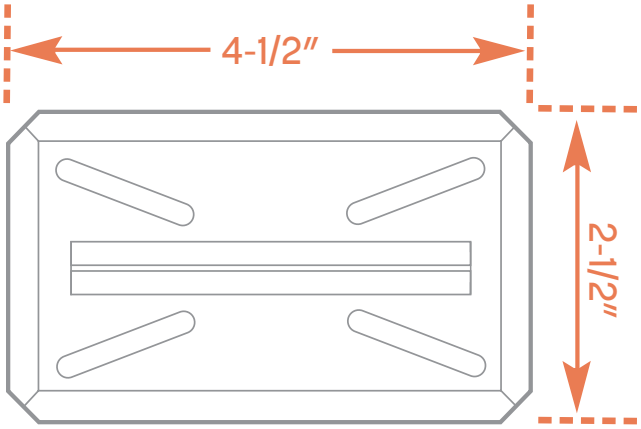


Strong Retention Force

Insulation Retainer Plate

Easily holds insulation boards tightly in place and maintains thermal barrier integrity.

Insulated cavity walls applied in masonry construction are an integral part of the thermal efficiency of the building. The type of insulation and thickness affect the integrity of its "R" value. It is advantageous to keep the insulation board or mat held firmly to the structure to prevent unwanted air pockets and avoid condensation sources.



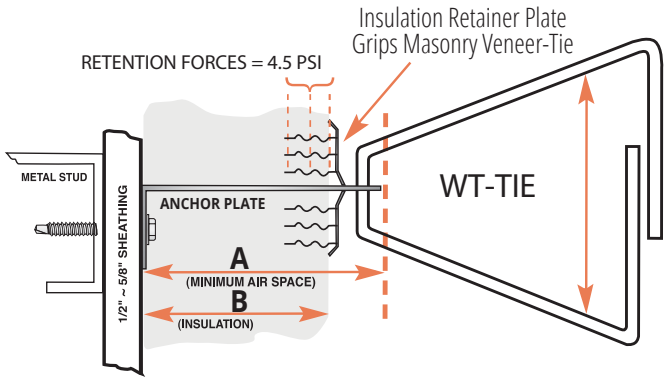
Item #	Material
MG insulation Retainer Plate # 62100-450H	MILL GALVANIZED PER ASTM A-653, G-60
SS insulation Retainer Plate # 62110-450S4	STAINLESS STEEL TYPE 304 PER ASTM A-666

By utilizing the Insulation Retainer Plate with the Masonry Veneer-Tie Base Plate and Wall Tie, the insulation will be held firmly in place and the masonry will be secure. Conventional methods of using a triangle tie, pintle wall tie, or plastic wedges, clips or disks as a means to hold the insulation in place is fraught with challenges. These methods require precise tie placement with specific fastener sizes. Barrel type anchors require specific combinations of fastener, insulation thickness and location for effective insulation retention. All other wall tie systems require the ties to be perfectly positioned for the size of insulation thickness -- if not, the insulation is loose. Also, this contact with the tie restricts the wall tie's ability to accommodate in-plane wall movement.

The Insulation Retainer Plate “one size fits all” allows for stacked insulation board to be intimately connected with the backup. This will let the insulation board thickness be optimized based on insulation needs rather than wall-tie designs.

The Insulation Retainer Plate is an effective way to mechanically retain board or mat insulation products to a backup material, even if it has an irregular surface. It is simply pushed on by hand until the desired contact resistance is met. The metallic non-flammable retainer creates a positive retention force of 45 lbs on the board or mat surface without the use of “glues.” An EPDM sealant bearing washer can be applied for enhanced air and moisture deflection. The Insulation Retainer Plate provides over 10 sq inches of contact area, which minimizes the crushing event of the insulation compared to other retainer methods such as disks or barrel type ties that provide only 3 sq inches of contact. It can also be used at seams or where boards intersect at the tie. It is available in stainless steel or galvanized steel finishes to be compatible with the Base Plate material.

INSTALLATION PROCEDURE

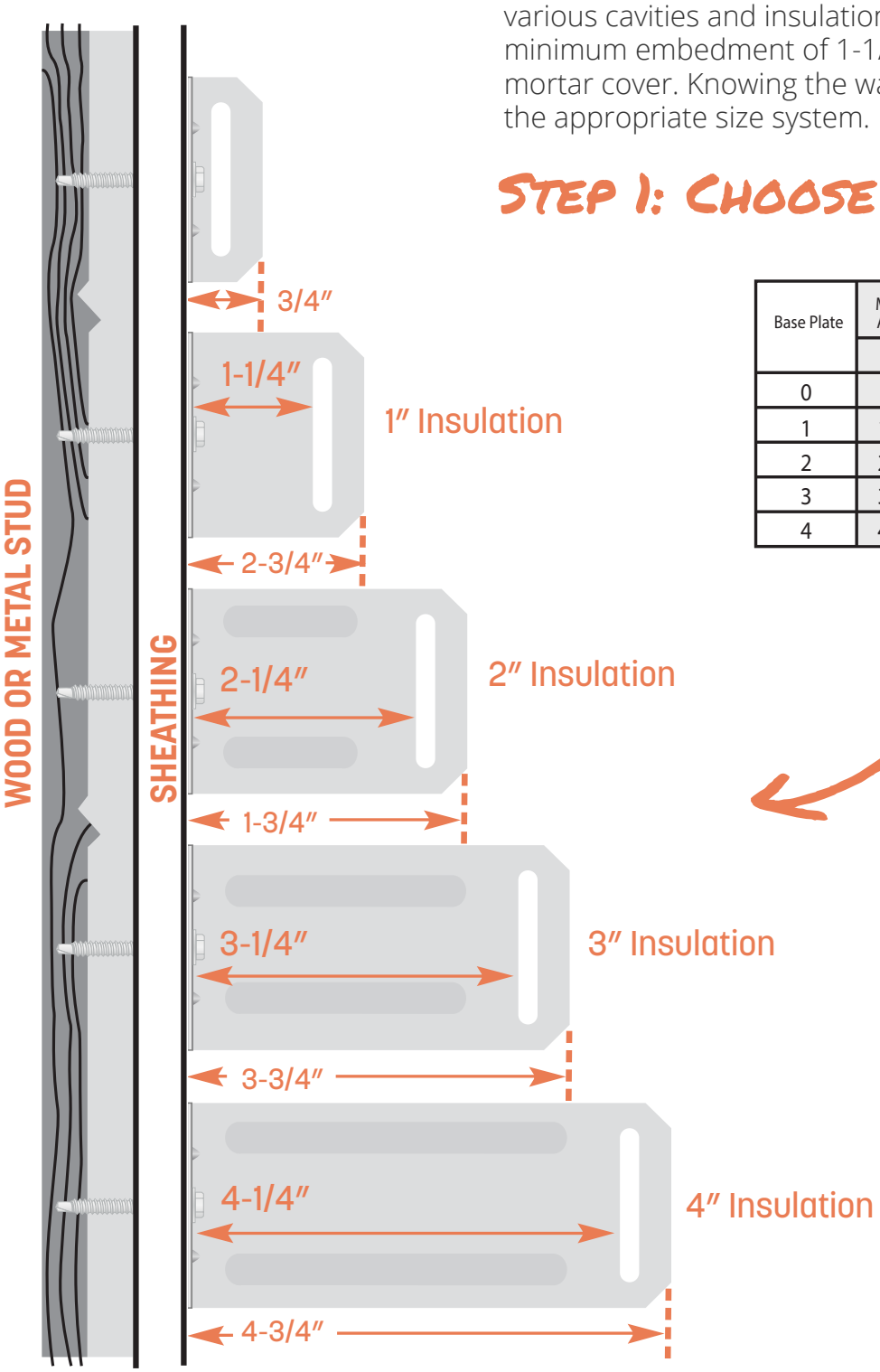


- Install the appropriate size base plate per plans and specifications.
  - base plate size should be equal to or greater than the planned insulation thickness to be installed. (i.e.: 1-1/2” insulation select the Masonry Veneer-Tie)
  - Select Insulation Retainer Plate with a compatible finish. (SS ties = SS plate)
  - One Insulation Retainer Plate is required per each base plate.
  - Install insulation by pressing insulation board or material over extended base plate projection until the base plate projects through the insulation surface or at vertical seams.
  - Insulation board thickness combinations are acceptable when using the Insulation Retainer Plate. Total build-up of insulation thickness must not be greater than the base plate.
  - Firmly grip Insulation Retainer Plate with ribs and raised slot faced toward the exterior wall.
- Align the slot of the Insulation Retainer Plate with the projected anchor and firmly push the plate on the base plate extension by hand until contact is made with the insulation.
- Push the Insulation Retainer Plate to the insulation until the insulation board is in firm contact with the Insulation Retainer Plate.
- Single installation complete; follow same process for the remaining base plates.

How To Order

The Masonry Veneer-Tie system consists of a plate and wall tie configuration. The base plate has multiple sizes to accommodate various cavities and insulation thicknesses. The wall tie needs a minimum embedment of 1-1/2" in the veneer and at least 5/8" mortar cover. Knowing the wall make-up will allow you to select the appropriate size system.

Step 1: Choose your Base Plate

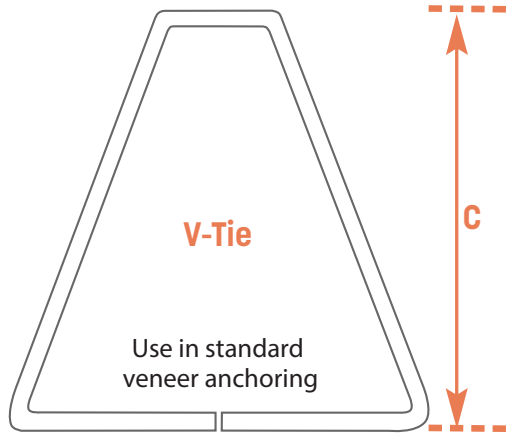


Base Plate	Minimum Air Space	Insulation	For Stud Back-Up	
	A	B	H.D.G.	S.S.
0	3/4″	0″	HDG 0-plate	SS 0-plate
1	1 3/4″	0 – 1″	HDG 1-plate	SS 1-plate
2	2 3/4″	0 – 2″	HDG 2-plate	SS 2-plate
3	3 3/4″	0 – 3″	HDG 3-plate	SS 3-plate
4	4 3/4″	0 – 4″	HDG 4-plate	SS 4-plate

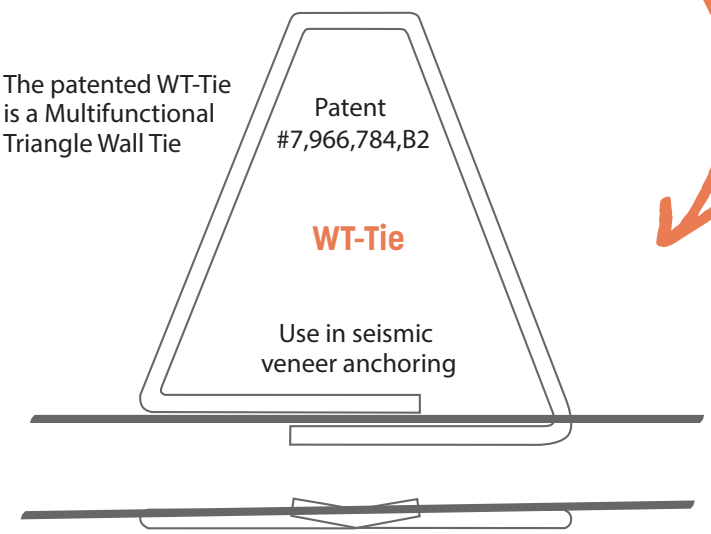
Step 2: Choose your Wall-Tie

SS or HDG (Plate and Tie should have the same finish)

The V-Tie is a triangle wall tie used in Standard Veneer Anchoring Applications. The patented WT-Tie is a triangle wall-tie that is used in Seismic Veneer Anchoring Applications. Both are Finished in Hot Dip Galvanized Steel or Stainless Steel.



The patented WT-Tie is a Multifunctional Triangle Wall Tie



** Produced from post-consumed recycled steel*

V-Tie

C	H.D.G.	S.S.
3″	HDG VT-3 #62120-18N300VTAH	SS VT-3 #62120-18N300VTAS4
4″	HDG VT-4 #62120-184300VTAH	SS VT-4 #62120-184300VTAS4
5″	HDG VT-5 #62120-18N500VTAH	SS VT-5 #62120-18N500VTAS4

WT-Tie

C	H.D.G.	S.S.
3″	HDG WT-3 #62120-18N300VTAH	SS WT-3 #62120-18N300VTAS4
4″	HDG WT-4 #62120-184300VTAH	SS WT-4 #62120-184300VTAS4
5″	HDG WT-5 #62120-18N500VTAH	SS WT-5 #62120-18N500VTAS4

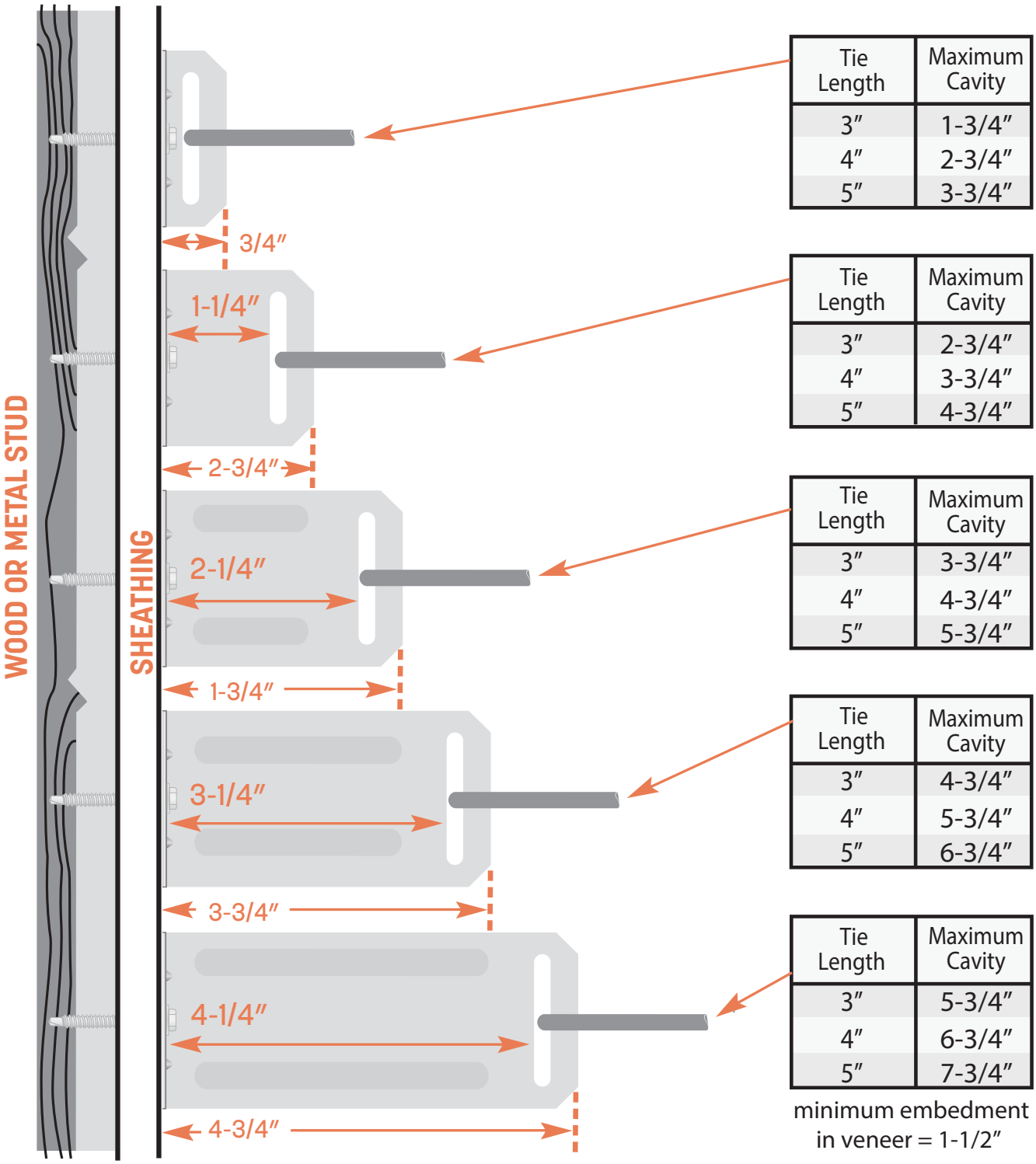
Material:

- 3/16″ (4.76 mm) Diameter Wire,
- Carbon Steel per ASTM A1064 *,
- Stainless Steel (S.S.) Type 304 per ASTM A580

Finish:

- Hot Dip Galvanized (H.D.G.) per ASTM A153, C1 B2; 1.50 oz/F12 min.
- Stainless Steel – Clean and Dry

Step 3: Choose your connection requirements



Tie Length	Maximum Cavity
3″	1-3/4″
4″	2-3/4″
5″	3-3/4″

Tie Length	Maximum Cavity
3″	2-3/4″
4″	3-3/4″
5″	4-3/4″

Tie Length	Maximum Cavity
3″	3-3/4″
4″	4-3/4″
5″	5-3/4″

Tie Length	Maximum Cavity
3″	4-3/4″
4″	5-3/4″
5″	6-3/4″

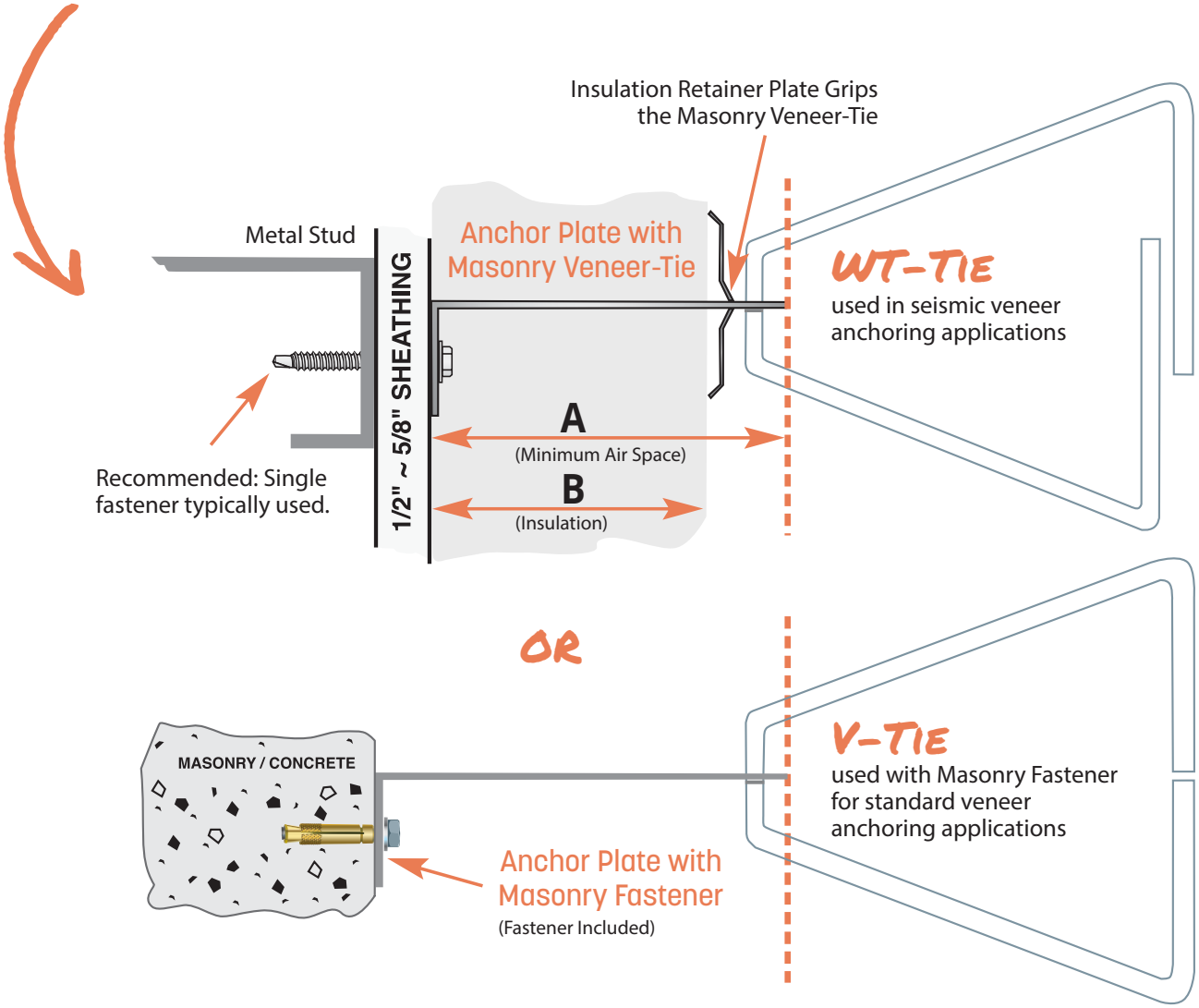
Tie Length	Maximum Cavity
3″	5-3/4″
4″	6-3/4″
5″	7-3/4″

minimum embedment in veneer = 1-1/2″

minimum 5/8" mortar coverage at exterior face of veneer

The Result... A Quality Veneer Tie Anchoring Solution

Use a Masonry Fastener when attaching to masonry or concrete backup. Include an Insulation Retainer Plate to hold insulation in place. Select either the V-Tie, or WT-Tie for your specific wall application.



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.

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.

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

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

Grand Central Station
New York, NY

Wrigley Building
Chicago, IL

United States Capitol
Washington D.C.

R.W. Kern Center
at Hampshire College

PROSOCO

You. Us. The project.