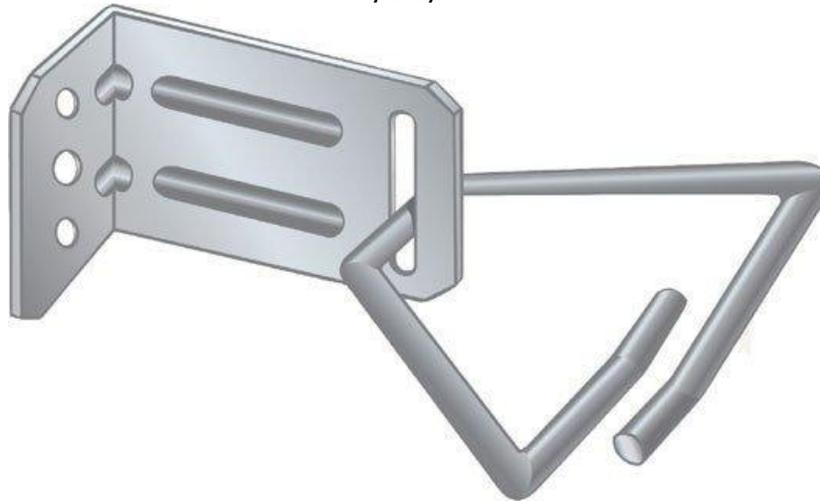




The CT-16 Advantage

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Brick veneer cavity wall construction is a popular building practice. Commercial applications typically involve metal stud back up as a means of connection for the veneer tie. The basic design premise of the veneer is to provide safe haven for the occupants of the structure by shielding wind, rain, and some cases snow. In order for the veneer to withstand the elements, a wall tie system is required that will effectively transfer the live loads to the back up. Tie design factors associated with ultimate capacity, stiffness, and installation ease impact the expected performance of the veneer. Penetrations of the building envelop and integration with Air Barrier membranes and SPF insulation has quickly become the next most important issue behind structural performance. The **CT-16** veneer anchor system is the solution to this anchoring application due to:

- **FULFILLING BUILDING CODE CONDITIONS**
- **PROVIDING OUTSTANDING PERFORMANCE CHARACTERISTICS**
- **INSTALLATION BENEFITS WITH LESS AIR BARRIER PENETRATIONS**
- **INCORPORATING SIGNIFICANT DESIGN FEATURES**

BUILDING CODE CONSIDERATION

In the VENEER section of the code, Chapter 6, Section 6.2 regarding "Anchored veneer", the 2008 edition of the masonry code has adopted a significant change in the spacing criteria's of adjustable wall anchors. Although the spacing of one tie per 2.67 ft² of wall area has **NOT** been affected for 2-piece anchors 9 ga. or greater (Section 6.2.2.5.6.1) the physical layout requirement for the anchors has

been revised. Prior restrictions of Section 6.2.2.5.6.3 limited the maximum horizontal spacing to 32 in. and the vertical spacing to be no greater than 18 in. The 2008 edition of Section 6.2.2.5.6.3 **NOW** allows for the vertical spacing to be no greater than 25 in. and maintaining the same horizontal limit of 32 in. (the 2.67 ft² wall area limit remained unchanged). Due to its strength and stiffness, the **CT-16 can be spaced at 16" H X 24" V**. When compared to other types of pintle type or "V" shaped base plate adjustable ties spaced at 16 X 16 per manufacturers recommendations, the **CT-16** provides a 1/3 less anchors without compromising performance.

PERFORMANCE CONSIDERATION

The **CT-16** has an ultimate capacity at its maximum adjustability (weakest location for the tie) of 717 lbs tension and 1050 lbs compression at a 4" cavity. Competitive products such as the pintle type ties have ultimate capacities tension and compression ranging from 120 lbs to 198 lbs at maximum adjustability.

The **CT-16** stiffness is 6410 lbs/in in tension and 12,000 lbs/in in compression at maximum adjustability. Competitive brands are as low as 515 lbs/in tension and compression at their maximum adjustability. At a 100 lb applied load, the **CT-16** experiences a deflection of 0.015", competitive systems typically deflect 0.194" for pintle and plate and the "V" shaped plates and triangle ties are at 0.058". This results in stiffness of 515 lb/in and 1700 lbs/in respectively for the competitive type anchors.

The **CT-16** 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. Prevention of excessive veneer deflection, which can cause cracking and leakage through the veneer, is supported by the use of ties with greater stiffness and less free play.

INSTALLATION COINSIDERATION

As earlier noted, the benefits of the **CT-16** recommended spacing of **one CT-16 tie per 2.67 sq ft.**, or 16" H X 24" V (which complies with the maximum allowable per the ACI 530 and BIA recommendations) provides an economical advantage without compromising performance. Competitive systems are spaced at one tie per 1.7 sq ft, 16" H X 16" V (manufacturer's recommendations). The **CT-16** spacing **REDUCES** the anchor requirement by **37%! This is a significant savings, which translates to 23 ties less per 100 sq ft of wall area using the CT-16 veneer tie system versus competitive brands.**

The **CT-16** requires **one screw per tie** at its center hole location when attaching to 16 gauge or better metal stud or wood stud. This reduces the number of breaches in the air barrier system by **50%** while also saving the cost of the material and labor for the installation versus competitive ties which require two

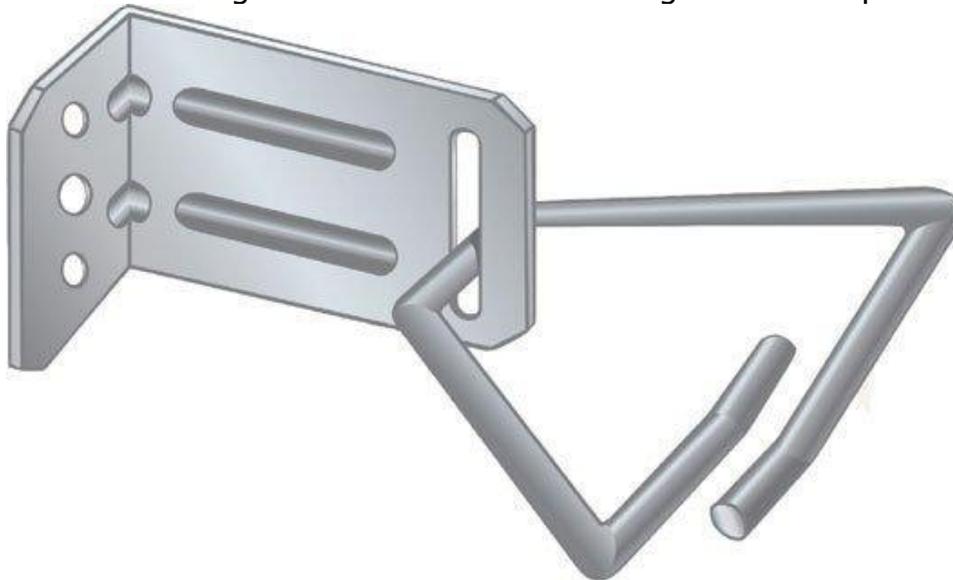
screws per installation. Also note that a failure of ONE screw with the two screw systems will substantially weaken or fail the connections integrity.

CONSIDER PRODUCT DESIGN FEATURES

1. The bearing area of the plate is 2 square inches. This large bearing area keeps unit stresses below 80 psi on the sheathing at 150 mph wind loads.
2. The Base Plate has multiple sizes to accommodate various insulation thicknesses.
3. The Base Plate incorporates stiffeners in the bent corners for additional restraint and stiffness to resist wind loading.
4. The Multi-Functional triangular tie accommodates horizontal reinforcement in the veneer without additional attachments or welded clips, and can not disengage from the base plate.
5. The projected plate has cropped corners for safety after wall mount installation and handling at the site.
6. The Base Plate is mounted vertically to the studs which virtually eliminates any threat of mortar build up on the plate during veneer construction and excessive sprayed applied insulation build up that can hinder tie engagement..
7. The slot provides for 1-1/2" of vertical adjustability.
8. Manufactured and Hot dip galvanized as a standard stock unit and can be produced from 304 Stainless Steel.

CONSIDER SPECIFYING THE CT-16

In summary, the **CT-16** veneer anchoring system fortifies the brick veneer metal stud anchoring solution over traditional adjustable tie systems via strength, stiffness, and installation ease. The **CT-16** also provides an economical solution for brick veneer anchoring methods while minimizing air barrier penetrations.



CT-16 with MULTI-FUNCTIONAL TIE