

Veneer Anchor System for Optimum Air Barrier Integrity

AGAIN! ANOTHER CTP SOLUTION!

CTP-16

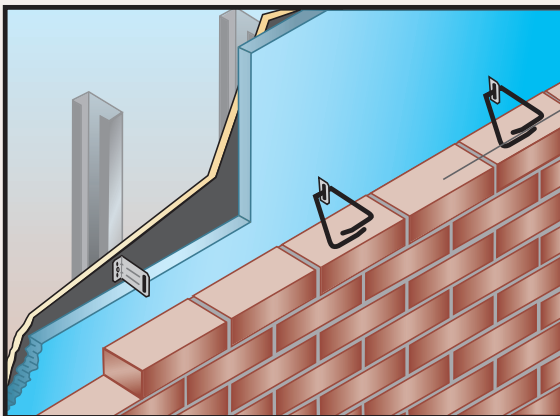
A veneer anchoring system that helps keep the air barrier intact and the veneer in place

For anchored veneers, the CTP-16 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 CTP-16 system can be used with and without rigid insulation board and is ideal for spray foam insulation applications. The CTP-16 is recommended for optimum air barrier integrity. Recommended for veneer anchorage to metal stud, wood stud, masonry, and concrete substrates. Use in new construction or retrofit masonry applications. Contributes to green building construction and restoration projects.

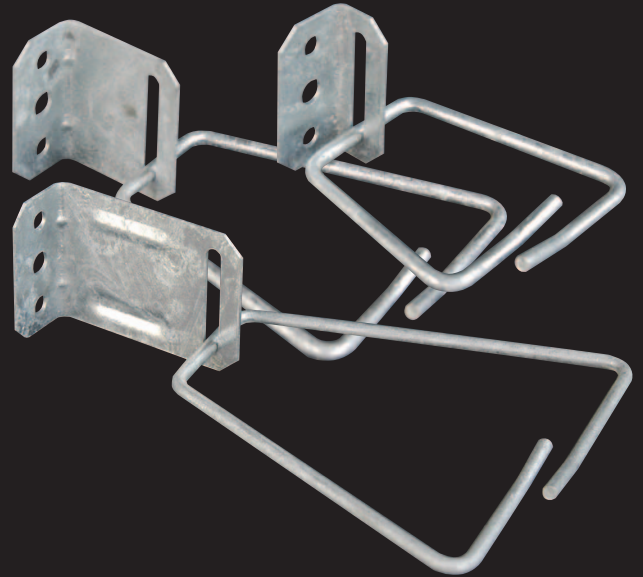
The **CTP-16 Veneer Anchor System** is designed to meet or exceed relevant codes and building standards for veneer ties in the United States. The CTP-16 is a wire tie and plate combination system which provides adjustability, minimal free-play, strength, stiffness, positive connection, and corrosion resistance.

Using the **CTP WT-Tie**, the CTP-16 meets relevant seismic anchor qualifications. The anchor plate has been designed for mounting on the surface of sheathing or stud, and accommodates insulation board without puncture.

The vertical orientation of the CTP-16 base plate assures good coverage of spray foam insulation. It prevents gaps found beneath horizontal plates, and doesn't require secondary cleaning of spray foam insulation common to other adjustable tie systems.



Made in the U.S.A.



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



Construction Tie Products, Inc. is committed to supplying the highest quality masonry tie and construction systems in North America and satisfying all stringent national codes and standards for today's building structures. CTP, Inc. promises to be a reliable product source along with on-time business integrity for all demanding builders. Call anytime for technical assistance or recommendations.

CTP-16 Product Information

Features and Benefits

- **FEATURE 1:**

The tie system provides great strength performance at MAXIMUM tie eccentricity (worse case).
Ultimate Tension = 450 lbs;
Ultimate compression = 600 lbs with a 4" cavity plate of applied loading.

- **BENEFIT 1:**

Allows for greater tie spacing and as a result, creates fewer breaches in the air barrier system.

- **FEATURE 2:**

Assembly stiffness is greater than 6300 lbs/in in tension and 13,800 lbs/in in compression.

- **BENEFIT 2:**

The veneer wall deflection under load will be minimal, which lessens the likely hood of cracking and the resultant moisture migration through the crack.

- **FEATURE 3:**

The veneer tie system is designed for positive single connection to back-up building structures with mechanical fasteners.

- **BENEFIT 3:**

The use of a single tek screw with 16 gauge metal stud back up, or the use of a single brass CTP Masonry Fastener for concrete or masonry back-up; or the use of a single 1/4" lag for wood stud back up creates fewer penetrations through the air barrier system.

- **FEATURE 4:**

Large bearing area. The CTP-16 Base Plate is 1" x 2" which provides a solid contact area.

- **BENEFIT 4:**

Optimum bearing area is created and keeps sheathing stress below 67 psi at 50 psf applied loading and maximum spacing.

- **FEATURE 5:**

CTP WT-Tie can be used within seismic designated areas or non-seismic areas without clips, tabs, or add-ons. It is produced from 3/16" diameter wire manufactured of carbon steel or stainless steel.

- **BENEFIT 5:**

The CTP WT design simply engages with veneer reinforcement for added ductility and strength in seismic events. As a basic tie it creates an interlock with the mortar as a result of its design. Installs quickly and is safe to handle.

- **FEATURE 6:**

Base plate and tie combination offer significant adjustability.

Vertical adjustability = 1-1/2"

Horizontal movement = +/- 1/2"

- **BENEFIT 6:**

Provides installation ease and it accommodates for the thermal and seismic movement of the veneer.

- **FEATURE 7:**

Tie cannot disengage.

- **BENEFIT 7:**

Complies with ASCE5/ACI 530/TMS 402 requirements.

- **FEATURE 8:**

Product features no sharp corners.

- **BENEFIT 8:**

Minimizes personal safety risk.

- **FEATURE 9:**

Base plate assembly is mounted vertically to the stud system.

- **BENEFIT 9:**

Eliminates mortar build up on the plate which creates a moisture bridge to the back-up, installs easily and aligns with insulation board. Spray foam applications do not plug the slot or sag about the plates projection.

- **FEATURE 10:**

Multi-Functional Tie

- **BENEFIT 10:**

Can be used with or without veneer reinforcement.

Description

- **CTP-16 Base Plate**

1" (25 mm) W x 2" (50 mm) H,
16 gauge (1.5 mm)

Carbon Steel ASTM A 366,

Hot Dip Galvanized per ASTM A153, C1 B2;

Stainless Steel per ASTM 167

- **CTP WT-Tie: Multifunctional Triangle Wall Tie**

3/16" (4.76 mm) Diameter Wire,

Carbon Steel per ASTM A 82,

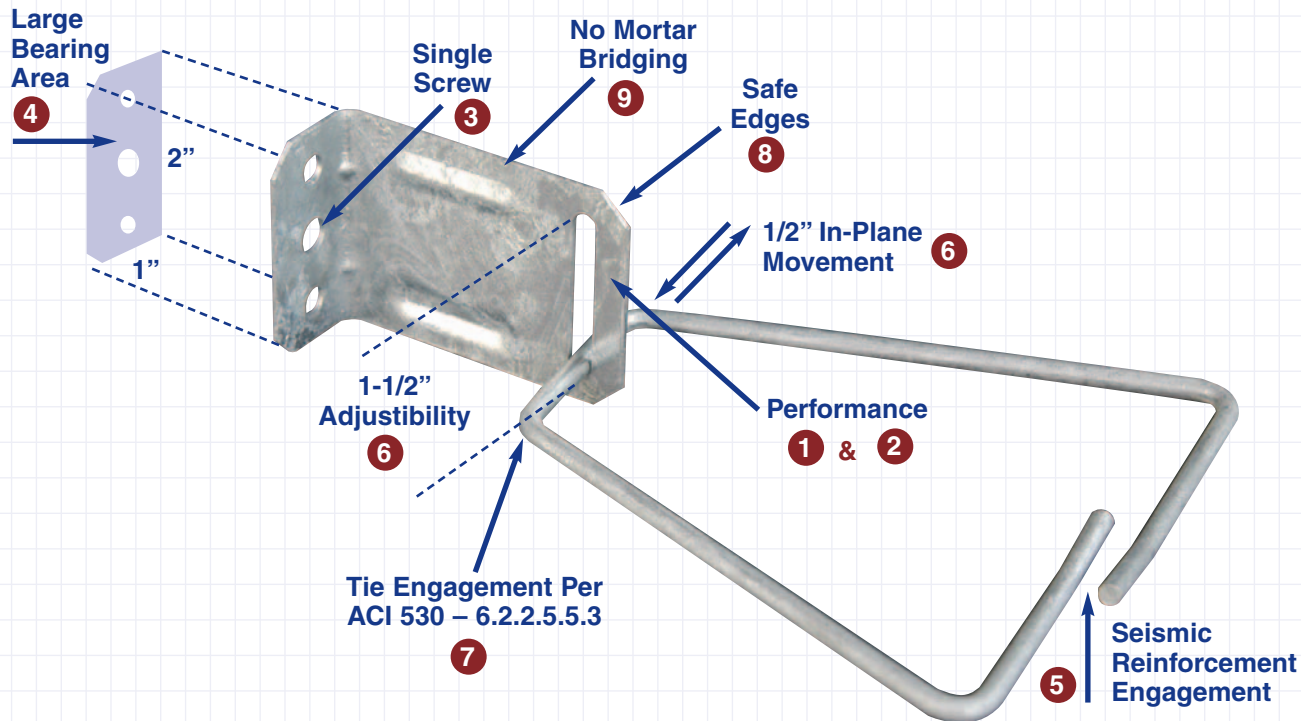
Stainless Steel (S.S.) Type 304 per ASTM A580

Hot Dip Galvanized per ASTM A153, C1 B2;

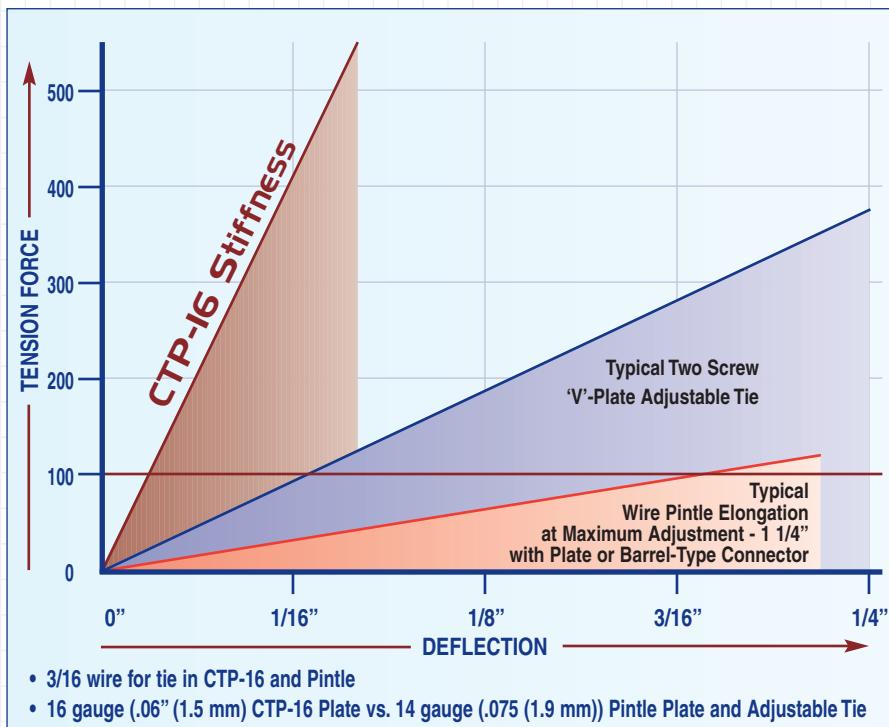
Stainless Steel per ASTM A580.

Can be used for seismic and non-seismic conditions.

The CTP-I6 Features and Benefits



CTP-I6 Performance Comparison to Typical Masonry Ties



CTP-16 Product Information

Features

CTP-16 Performance Characteristics

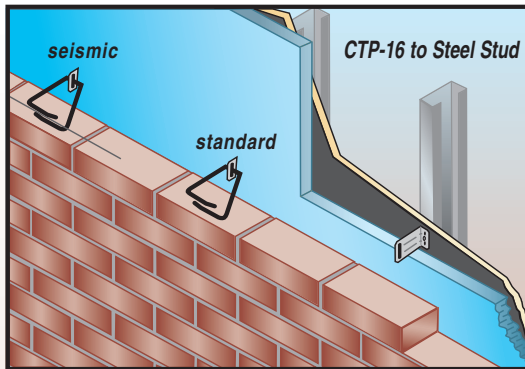
| Criteria | Data | U.S. Standards* |
|--|--|---|
| 1. Free Play: in. (mm) | 0.030 in. [maximum] (0.76 mm) | ≤ 0.050 in. (1.25 mm) |
| 2. 100 lbs. (0.45 kN) Deflection: in. (mm.) • Free Play not included • Free Play included | 0.010 in. (0.25 mm) 0.040 in. (1.0 mm) | ≤ 0.050 in. (1.25 mm) ≤ 0.100 in. (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. (0.25m ²) |
| 7. In-Plane Differential Movement | ± 1/2" (12 mm) | |

1. The performance values are based on test results utilizing a 16 gauge base plate. The CTP-16 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:

- ACI 530 ASCE 5/TMS 402 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 Steel Stud



| Fastener Performance | | | | |
|--------------------------|---|-------------------|-----------------------------|---------------------------|
| Condition | | Gauge | Ultimate Tension: lbs. (kg) | Ultimate Shear: lbs. (kg) |
| Steel Stud | Dual Hardened Grade 3 Stalgard N. 12-14 | 18 | 396 lbs. (180 kg) | 1,315 lbs. (597 kg) |
| | | 16 | 527 lbs. (239 kg) | 1,655 lbs. (750 kg) |
| | | 14 | 710 lbs. (322 kg) | 2,118 lbs. (962 kg) |
| | 300 Stainless Steel | 14 | 855 lbs. (388 kg) | 1,390 lbs. (631 kg) |
| 16 | | 610 lbs. (277 kg) | 1,390 lbs. (631 kg) | |
| CTP-561022 CTP-541022 | Hollow Lightweight Block | | 900 lbs. (409 kg) | |
| | N.W. Concrete (3500 psi) | | 2,100 lbs. (963 kg) | |
| | Solid Brick | | 900 lbs. (409 kg) | |

Note: Recommended minimum spacing of one CTP-16 tie per 2.67 square feet of wall area, spaced not more than 32" horizontal and 25" vertical.

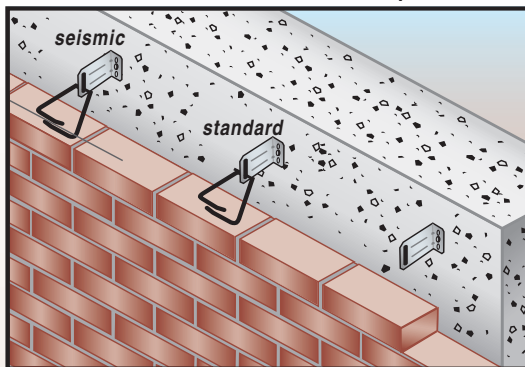
The CTP-516 is a complete assembly that includes the CTP-16 plate and CTP WT-Tie plus a mechanical fastener (CTP-561022: carbon steel; or CTP-541022: stainless steel) capable of being applied to concrete and/or masonry structures.

Fastener Assembly for Masonry and Concrete, With or Without Insulation. Ideal for Brick Cladding to Any Concrete or Masonry Surface.

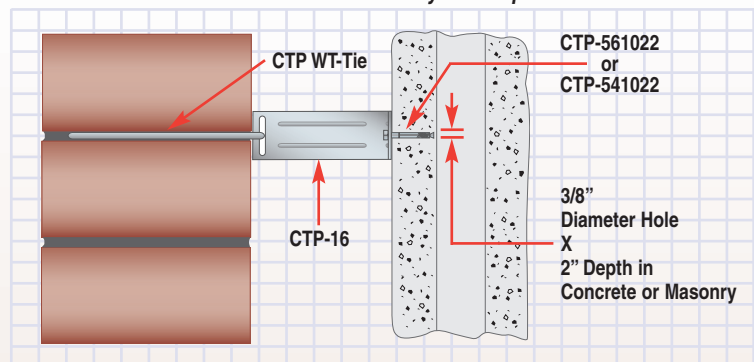
Torque Activated: 50 – 100 in – lb ■ Hex Head Finish – Low Profile ■ Bolt Head Provides Inspection Source

Low Profile Avoids Insulation or Tie Interference ■ Zinc Plated or Stainless Bolt with Brass Expanders ■ Fastener Preload ≥ Four Times Design Load

CTP-516 for Concrete Back-Up



CTP-516 for Masonry Back-Up



Note: Recommended minimum spacing of one tie per 2.67 square feet of wall area, spaced not more than 32" horizontal, and 25" vertical.

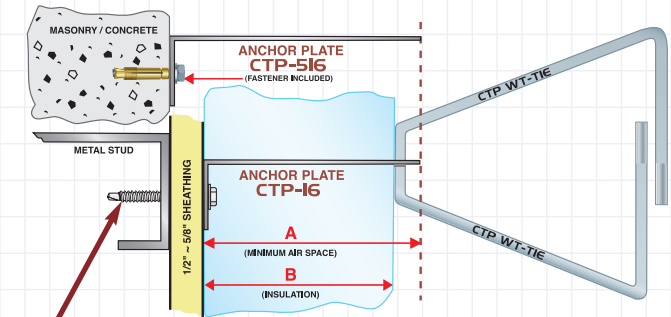
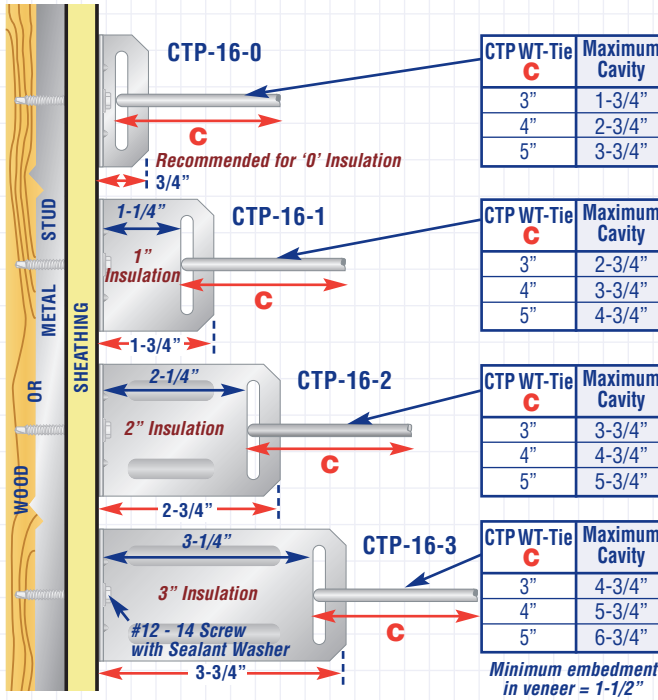
Order Planning Guide

Specifications

CTP-I6 BASE PLATE

1" (25 mm) x 2" (50 mm),
 16 gauge (1.5 mm) Carbon Steel ASTM A 1008*,
 Hot Dip Galvanized (H.D.G.) per ASTM A153, C1 B2;
 Stainless Steel (S.S.) Type 304 per ASTM 167

| Minimum Air Space | Insulation | For Stud Back-Up | |
|-------------------|------------|------------------|----------|
| | | H.D.G. | S.S. |
| A 3/4" | B 0" | CTP-1602 | CTP-1605 |
| 1 3/4" | 0 - 1" | CTP-1612 | CTP-1615 |
| 2 3/4" | 0 - 2" | CTP-1622 | CTP-1625 |
| 3 3/4" | 0 - 3" | CTP-1632 | CTP-1635 |

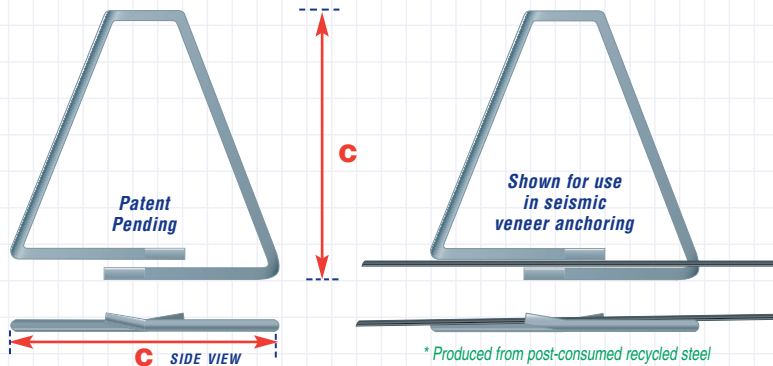


| Anchor Plate Thickness | Fastener Type | Material | Part Number |
|------------------------|---|----------------------------|-------------|
| 1 1/2" | WITHOUT Sealant Washer / Self Drilling-Self Tapping | Co-Polymer Carbon Steel | 11015SC |
| | | 410 Series Stainless Steel | 41015SC |
| | | 300 Series Stainless Steel | 13015SX |
| 2" | WITH Sealant Washer / Self Drilling-Self Tapping | Co-Polymer Carbon Steel | 11020SCW |
| | | 410 Series Stainless Steel | 41020SC |
| | | 300 Series Stainless Steel | 13020SXW |

CTP WALL TIE

The CTP WT-Tie is a multifunctional triangle wall tie that can be used in Standard or Seismic Veneer Anchoring Applications Finished in Hot Dip Galvanized Steel or Stainless Steel

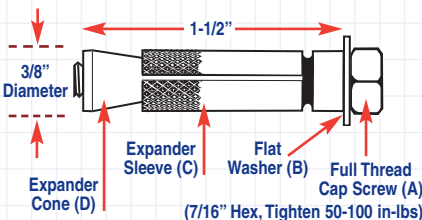
The CTP WT-Tie is a Multifunctional Triangle Wall Tie



| C | H.D.G. | S.S. |
|----|-----------|-----------|
| 3" | CTP WT-32 | CTP WT-35 |
| 4" | CTP WT-42 | CTP WT-45 |
| 5" | CTP WT-52 | CTP WT-55 |

- Material:**
- 3/16" (4.76 mm) Diameter Wire,
 - Carbon Steel per ASTM A 82*,
 - Stainless Steel (S.S.) Type 304 per ASTM A580
- Finish:**
- Hot Dip Galvanized (H.D.G.) per ASTM A153, C1 B2; 1.50 oz/Ft² min.
 - Stainless Steel - Clean and Dry

CTP MASONRY FASTENER



| Catalog # | A | B | C | D |
|---|---|---------------------------------|------------------|------------------|
| CTP-561022 ZINC PLATED HARDWARE | ZINC PLATED, A307 ASME B18.2.1 | ZINC PLATED ANSI B18.22.1TYA | ASTM A-360 Brass | ASTM A-360 Brass |
| CTP-541022 STAINLESS STEEL HARDWARE | 300 SERIES STAINLESS STEEL ASME B18.2.1 | ANSI B18.22.1TYA | ASTM A-360 Brass | ASTM A-360 Brass |

CTP-16 Specification

Section 04 05 19.16

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Masonry anchors

1.2 RELATED SECTIONS

- A. Section 042000 – Unit Masonry
- B. Section 042200 – Concrete Masonry
- C. Section 044200 – Multi-Wythe Masonry
- D. Section 044200 – Exterior Stone Cladding

1.3 REFERENCES

- A. ASCE/ACI 530.1 – Specifications for Masonry Structures
- B. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- C. ASTM A 580/A 580M - Standard Specification for Stainless Steel Wire
- D. ASTM A 82 - Standard Specification for Cold-Drawn Steel Wire for Concrete Reinforcement
- E. ASTM A 366 - Standard Specification for Steel Sheet, Carbon, Cold-Rolled, Commercial Quality.
- F. ASTM A 167 - Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013300.
- B. Product Data: Manufacturer's data on each type of product furnished.

1.5 QUALITY ASSURANCE

- 1. Manufacturer Qualifications: Provide design, engineering and technical assistance for the selection, application, and installation of appropriate anchoring systems for the project.
- 2. Installer Qualifications: Knowledgeable contractor experienced in the proper use and installation of anchoring systems, including coordination with wall assembly components
- 3. Mock-Up: Provide a mock-up for evaluation of application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Acceptable Manufacturer:
Construction Tie Products, Inc. (CTP, Inc.),
7974 West Orchard Drive
Michigan City, IN, 46360-9390 USA.
Phone: 219-878-1427 Fax: 219-874-3626
Email: salesctp@comcast.net Website: www.ctpanchors.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 012500.
- D. Masonry Anchors: CTP-16 base plate is a formed steel connector having a vertical slot to accommodate wall tie adjustability having a 0.30" (.75mm) free play; a centered single screw hole for connection through exterior

sheathing to 16 gauge (1.5 mm) metal stud, wood, and masonry applications; and a projected plate design to accommodate insulation.

- 1. Anchors to Concrete: **CTP-516 with recommended fastener**
- 2. Anchors to Masonry Backup: **CTP-516 with recommended fastener**
- 3. Anchors to Metal Stud Backup: **CTP-16**
- 4. Anchors to Structural Steel: **CTP-16**
- 5. Anchors to Wood Stud Backup: **CTP-16**
- 6. Metal: Stainless steel sheet, ASTM A 167, Type 304, finish 2B.
- 7. Metal: Cold-rolled steel sheet, ASTM A 366, hot-dip galvanized after fabrication in accordance with ASTM A 153, Class B
- 8. Metal thickness: 16 gage (1.5 mm)
- E. Masonry Ties: CTP WT-TIE: 3/16" (4.76mm) diameter multifunctional triangular tie having raised offset ends to accommodate wire reinforcement for seismic applications or mortar in typical non-seismic masonry construction.
 - 1. Masonry Veneer Ties: Provide minimum 1-1/2" (38.1 mm) embedment in mortar.
 - 2. CTP WT-Tie: Wire tie 3/16 inch (4.75 mm) diameter x [Length]
 - 3. Material for Ties in Exterior Walls: Stainless steel
 - 4. Material for Ties in Exterior Walls: Hot-dip galvanized
- F. Fasteners:
 - 1. Self-drilling self-tapping screws; hex washer head, size #12-14 X 1-1/2" or 2", lengths required for indicated sheathing thicknesses.
 - a. **Metal:** A ductile high strength self drilling, self tapping screw with polymer protective coating
 - b. **Metal:** Type 410 stainless steel self drilling self tapping screw
 - c. **Metal:** Type 304 stainless self drilling, self tapping bi-metal point screw
 - d. All screws to have a bonded sealant washer
 - 2. **Masonry / Concrete:** 3/8" diameter X 1-1/2" brass expansion shield with Hex cap screw finish
 - a. Stainless hardware: CTP-541022 fastener
 - b. Zinc plated hardware: CTP-561022 fastener

PART 3 EXECUTION

3.1 PREPARATION

- A. Examine project conditions before beginning installation of masonry tie and anchor systems components

3.2 INSTALLATION

3.2.1 Masonry Veneer Anchoring System:

- 3.2.1.1 Install veneer anchors at stud locations; 25 inches (625 mm) OC vertically, 16 inches (406 mm) OC horizontally.
- 3.2.1.2 For masonry or concrete, install veneer anchors at 25 inches (625 mm) OC vertically, 16 inches (406 mm) OC horizontally.
- 3.2.1.3 Screw-attach veneer anchor to stud face through sheathing until full contact of base plate with sheathing.
- 3.2.1.4 Tighten masonry fastener 50-100 in-lbs of torque against the masonry or concrete surface
- 3.2.1.5 Install masonry wall tie at each veneer anchor location; install ties as exterior wythe of masonry construction progresses.

Warning

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.

**CONSTRUCTION TIE PRODUCTS**

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*Engineered Anchoring Solutions Provider***Approval**