*This section includes specification text to assist in describing a variety of masonry anchors, connectors, and accessories intended for masonry construction. This document contains prepared "master specification" articles and paragraphs describing proprietary masonry anchors and connectors only. To create a complete specification section from the following text, a specifier must add other appropriate articles from the CSI/CSC SectionFormat. Alternately, the following paragraphs are available for inclusion into a master of project specification section for masonry work. Simply copy and paste one or more paragraphs, as appropriate, into a corresponding location in a specification section being edited. The [OR] statements are to remind a specifier that one or more products may be selected as required for a project specification – select and paste only those products that are required for the subject project.*

## Part 1 General

### 1.1 REFERENCES

*When specifying structural masonry anchors and connectors, consider editing this article by utilizing the masonry industry developed reference standard published by Canadian Standards Association (CSA) - CSA A370-04 - a new Canadian masonry standard which directly cites masonry anchor configuration and structural requirements. This FERO Corporation document references functional prescriptive requirements to this performance standard.*

.1 CAN/CSA A370-04 - Connectors for Masonry.

### 1.2 DESIGN CRITERIA

*Edit or use this article by including the title above and the paragraph below when including masonry connectors in a project masonry section being edited*

.1 Non-conventional Masonry Connectors

.1 Deflection: maximum <2.0 mm> <<0.079 inches>>, including free play when acted upon by <0.45 kN> <<100 lb>>lateral load, in all possible positions of adjustment.

.2 Positive restraint at position of maximum adjustment.

.2 Multi-component Ties - Free Play: Maximum <1.2 mm> <<0.047 inches>, when assembled in any possible configuration.

## Part 2 Products

### 2.1 MANUFACTURERS

*This article is for proprietary specifying with one or more manufacturers. Use the first and third paragraphs for specifying a single manufacturer. If more than one manufacturer is specified, include the product name or model number to identify the specific product associated with each manufacturer. If specifying a product by reference to a standard only, delete this article.*

.1 FERO Corporation, 15305 – 117 Avenue, Edmonton AB T5M 3X4.

.1 Phone: 780-455-5098 - Fax: 780-452-5909

.2 Web Site: www.ferocorp.com

.3 E-mail: info@ferocorp.com

.2 Other acceptable manufacturers offering functionally equivalent products.

.1 [_____] [Model] [Style] [_____].

.2 [_____] [Model] [Style] [_____].

.3 Substitutions: [Refer to Section [_____].] [Not permitted.]

*Copy and paste one or more of the connector types into project specification being edited. Edit the following paragraphs to identify project requirements and to eliminate conflict with manufacturer's products cited above.*

**2.2 ADJUSTABLE BRICK VENEER TIE SUPPORT (BVTS)**

.1 Product Name: [_____].

.2 Components:

.1 Adjustable BVTS: [A370-04.] [_____.]

.2 Length to suit thickness of gypsum sheathing membrane and insulation.

.3 AB-Clip.

.4 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Finish: Steel components, hot dip galvanized to [CAN/CSA A370-04.] [_____.]

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

*Edit sub-paragraph below for fastener description and embedment.*

.5 Fasteners: Two (2) - [_____] per adjustable.

[OR]

**2.3 BLOCK SHEAR CONNECTOR**

.1 Product Name: [_____].

.2 Components:

.1 Block Shear Connector Plate: Length to suit concrete block width and thickness, membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.3 Finish: Steel components, hot dip galvanized to [CAN/CSA A370-04.] [_____.]

.4 Spacing:

.1 Typical: [Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.] [Per structural drawings.]

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Tops of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.5 Bottoms of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

[OR]

**2.4 FIXED BRICK VENEER TIE SUPPORT (BVTS)**

.1 Product Name: [_____].

.2 Components:

.1 Fixed BVTS: Length to suit thickness of gypsum sheathing, membrane and insulation.

.2 Corrugated Strip Tie: Standard <0.76 mm> <<0.03 inch>> corrugated strip tie, to CAN/CSA A370-04.

.3 Finish: Steel components, hot dip galvanized to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

*Edit sub-paragraph below for fastener description and embedment.*

.5 Fasteners: [One (1)] [_____], [_____] type fastener to CSA/CAN A370-04.

[OR]

**2.5 CAT-TIE**

.1 Product Name: [_____].

.2 Components:

.1 AB-Clip.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Finish: [Steel components, hot dip galvanized,] [Stainless steel components,] to A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

*Edit sub-paragraph below for fastener description and embedment.*

.5 Fasteners: [Two (2)] [_____], [_____] type Cat-Tie, to CAN/CSA A370-04.

[OR]

**2.6 LATERAL TIE CLIP**

.1 Product Name: [_____].

.2 Components:

.1 Lateral tie clip.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing: [Two (2)] [Four (4)] per V-Tie, [one (1)] [two (2)] per leg of V-Tie.

[OR]

**2.7 PAC-TIE**

.1 Product Name: [_____].

.2 Components:

.1 Backer plate.

.2 AB-Clip.

.3 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

*Edit sub-paragraph below for fastener description and embedment.*

.5 Fasteners: [Two (2)] [_____] per Pac-Tie, to CAN/CSA A370-04.

[OR]

**2.8 RAP-TIE**

.1 Product Name: [_____].

.2 Components:

.1 L-Plate: Length to suit thickness of membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

*Edit sub-paragraph below for fastener description and embedment.*

.5 Fasteners Per Rap-Tie: [One (1)] [Two (2)] [_____], to CAN/CSA A307-04.

[OR]

**2.9 SIDE-MOUNTING RAP-TIE**

.1 Product Name: [_____].

.2 Components:

.1 Flat-Plate: Length to suit steel stud width and thickness of gypsum sheathing, membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

.5 Fasteners:

.1 Two (2) – No. [____] self-tapping sheet metal screws for each side-mounting Rap-Tie, to CAN/CSA A370-04.

.2 Embed fasteners minimum <20 mm> <<0.79 inch>> into steel stud.

[OR]

**2.10 SLOTTED BLOCK TIE**

.1 Product Name: [_____].

.2 Components:

.1 Slotted Block Plate - Type [I] [II]: Length to suit block width and thickness of membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.5 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

[OR]

**2.11 SLOTTED RAP-TIE**

.1 Product Name: [_____].

.2 Components:

.1 Slotted L-Plate: Length to suit thickness of membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Provide at maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottoms of walls.

.5 Fasteners: [One (1),] [Two (2),] [_____] type, Slotted Rap-Tie to CAN/CSA A307-04.

[OR]

**2.12 SLOTTED SIDE-MOUNTING RAP-TIE**

.1 Product Name: [_____].

.2 Components:

.1 Slotted Flat Plate: Length to suit steel stud width and thickness of gypsum sheathing, membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

.5 Fasteners:

.1 Provide two (2) – No. [____] self-tapping sheet metal screws per slotted side-mounting Rap-Tie, to CAN/CSA A370-04.

.2 Embed fasteners minimum <20 mm> <<0.79 inch>> into steel stud.

[OR]

**2.13 SLOTTED STUD TIE**

.1 Components:

.1 Slotted Stud Plate, Type [I] [II]: Length to suit steel stud width and thickness of gypsum sheathing membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation support.

.2 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.3 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center at maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Provide at maximum <[____] mm> <<[____] inch>> from bottom of walls.

.4 Fasteners:

.1 [Two (2)] [Four (4)] No. [____] self-tapping sheet metal screws per slotted stud tie, to CAN/CSA A370-04.

.2 Embed fasteners minimum <20 mm> <<0.79 inch>> into steel stud.

[OR]

## 2.14 STUD SHEAR CONNECTORS

.1 Product Name: [_____].

.2 Components:

.1 Stud Shear Connector Plate: Length to suit steel stud width and thickness of gypsum sheathing, membrane and insulation.

.2 V-Tie: Length to provide placement of legs at centerline of solid unit veneer.

.3 Insulation Support:

.3 Finish: [Steel components, hot dip galvanized] [Stainless steel components] to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Maximum <[____] mm> <<[____] inch>> on center horizontal, maximum <[____] mm> <<[____] inch>> on center vertical.

.2 Openings and Wall Ends: Maximum <[____] mm> <<[____] inch>> on center, maximum <[____] mm> <<[____] inch>> from openings and wall ends.

.3 Top of Walls: Maximum <[____] mm> <<[____] inch>> from top of walls.

.4 Bottom of Walls: Maximum <[____] mm> <<[____] inch>> from bottom of walls.

.5 Fasteners:

.1 Provide [two (2)] [four (4)] No. [____] self-tapping sheet metal screws per stud shear connector, to CAN/CSA A370-04.

.2 Embed fasteners minimum <20 mm> <<0.79 inch>> into steel stud.

[OR]

## 2.15 FAST ANGLE SUPPORT

.1 Product Name: [_____].

.2 Components:

.1 Fero FAST™ Bracket, shim plate and rectangular washer.

.2 FAST™ Bracket:

.1 Mild steel plate: <4.76 mm> <<3/16 inch>> thick.

.2 Sized to suit cavity width (rigid insulation thickness plus air space).

.3 Shim Plate: <4.76 mm> <<3/16 inch>> thick for adjusting when required.

.1 If tolerance exceeds this thickness, select next size bracket.

.4 Rectangular Washer: Attach per manufacturer guidelines.

.5 Anchor Bolts or Inserts: <15 mm> <<5/8 inch>> diameter.

.1 Installation and edge distance per manufacturer recommendations.

.6 Galvanized Steel Angle: <100 mm x 100 mm x 6 mm> <<4 inch x 4 inch x ¼ inch>>.

.3 Finish: Steel components, hot dip galvanized to CAN/CSA A370-04.

.4 Spacing:

.1 Typical: Provide angle support at <[____] mm on center plus or minus 100 mm> <<[____] ft plus or minus 4 inches>>.

.2 Install first angle support at <100 mm> <<4 inches>> from end of assembly, corners, or change of direction.

*The following text is a candidate to be placed as an Installation Article in Part 3 of the same specification section.*

.5 Installation:

.1 Snap chalk line and mark approximate anchor locations. Drill holes if required.

.2 Install FAST™ Brackets and finger tighten anchor. Install brackets only after air barrier installation.

.3 Insert shims behind angle as required.

.4 Alternate between right and left slot configuration to make sliding possible.

.5 Install shelf angle.

.6 Level and tighten anchor bolts snug [plus half turn.] [as specified.]

.7 Install shim if required, in front of angle to ensure vertical leg of angle is in contact with front of the support system (bracket).

.8 Coordinate vertical control joint with angle iron.

.9 Ends of angle terminate at midpoint of bracket, ensuring two pieces of angle meet at center of bracket.

.6 Retain rigid insulation cut out at bracket location and insert it back inside bracket to maintain continuity.

## Part 3 Execution

### 3.1 INSTALLATION

*Include the following paragraph if a manufacturer actually publishes installation instructions - many do not. If a manufacturer does NOT publish such a document, ensure all install criteria that is important to the project, is specified below.*

.1 Install masonry anchors and accessories to manufacturer instructions.

.2 [_____.]

**END OF SECTION**