



2.1 MASONRY CONNECTORS

.1 Design Criteria:

- .1 Masonry connectors: Includes masonry anchors, ties, and fasteners.
- .2 Connector design: In accordance with CSA A370-14, "Connectors for Masonry".
 - .1 Serviceability:
 - .1 Mechanical free play: For single- and multi-component ties, not to exceed 1.2 mm when assembled in any possible configuration and position of adjustment, including any mechanical free play between a tie component and the structural backing.
 - .2 Displacement: For single- and multi-component ties, not to exceed 2.0 mm under a compressive or tensile load of 0.45 kN (100 lbs.), when assembled in any possible configuration and position of adjustment, including free play; displacement includes all secondary deformations of the structural backing.
 - .3 Positive restraint: For adjustable ties, provide positive restraint to prevent disengagement at all positions of adjustment including that of maximum adjustment.
 - .2 Materials and manufacturing processes: In accordance with CSA A370, "Connectors for Masonry".
 - .3 Corrosion protection and material compatibility: In accordance with CSA A370, "Connectors for Masonry".
 - .4 Structural integrity: In accordance with CSA A370, "Connectors for Masonry".
- .3 Connector load determination: In accordance with CSA S304.1-14, "Design of Masonry Structures".
- .4 Connector installation: In accordance with CSA A371, "Masonry Construction for Buildings".

.2 Adjustable BVTS (Brick Veneer Tie Support):

- .1 Component Sizing:
 - .1 BVTS: Length to suit total thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable.
 - .2 AB Clip: Standard, as manufactured.
 - .3 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Adjustable BVTS at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Adjustable BVTS at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Adjustable BVTS at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Adjustable BVTS at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Adjustable BVTS at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide 2 – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Adjustable BVTS.

.3 BVTS (Brick Veneer Tie Support):

- .1 Component Sizing:
 - .1 BVTS: Length to suit total thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable.
- .2 Corrugated Strip Tie: Prescriptive Corrugated Strip Tie, in accordance with CSA A370-14:
 - .1 minimum thickness: 0.80 mm base metal;
 - .2 width: 22 ± 2 mm;
 - .3 wavelength of corrugations: 10 ± 1 mm;
 - .4 depth of corrugation from crest to trough: 2 to 3 mm;

- .5 pre-bent during manufacture to a right angle within 6 mm of the pre-drilled or pre-punched hole intended to receive fastener;
 - .6 where hot-dip galvanized: hot-dip galvanize after cutting, shearing, embossing, bending, drilling or punching.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
 - .3 Connector Spacing:
 - .1 Typical: Provide BVTS at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide BVTS at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide BVTS at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide BVTS at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide BVTS at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
 - .4 Fastener:
 - .1 Provide 1 – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per BVTS.

.4 Cat-Tie (Column Adjustable Tie):

- .1 Component Sizing:
 - .1 AB-Clip: Standard, as manufactured.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Cat-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Cat-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Cat-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Cat-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Cat-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide 2 – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Cat-Tie.

.5 Lateral Tie Clip:

- .1 Component Sizing:
 - .1 Lateral Tie Clip: Standard, as manufactured.
- .2 Component Finish:
 - .1 [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Number: Provide [2] [4] Lateral Tie Clips per V-Tie ([1] [2] per leg of V-Tie).

.6 Pac-Tie (Plate Adjustable Connector Tie):

- .1 Component Sizing:
 - .1 Backer Plate: Standard, as manufactured.
 - .2 AB-Clip: Standard, as manufactured.
 - .3 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Pac-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Pac-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.

- .3 Wall Ends: Provide Pac-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
- .4 Wall Top: Provide Pac-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
- .5 Wall Base: Provide Pac-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide 2 – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Pac-Tie.

.7 Rap-Tie (Rod Adjustable Plate Tie):

- .1 Component Sizing:
 - .1 L-Plate: Length to suit thickness of insulation; holes along leading edge to receive V-Tie.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
 - .3 Insulation Support: Standard, as manufactured.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Rap-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Rap-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Rap-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide [1] [2] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Rap-Tie L-Plate.

.8 Heavy Duty Rap-Tie (Rod Adjustable Plate Tie):

- .1 Component Sizing:
 - .1 Heavy Duty L-Plate: Length to suit thickness of insulation; holes along leading edge to receive V-Tie.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
 - .3 Insulation Support: Standard, as manufactured.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Heavy Duty Rap-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Heavy Duty Rap-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Heavy Duty Rap-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Heavy Duty Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Heavy Duty Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide [1] [2] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Heavy Duty Rap-Tie L-Plate.

.9 Slotted Rap-Tie (Rod Adjustable Plate Tie):

- .1 Component Sizing:
 - .1 Slotted L-Plate: Length to suit thickness of insulation.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
 - .3 Insulation Support: Standard, as manufactured.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Slotted Rap-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Slotted Rap-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.

- .3 Wall Ends: Provide Slotted Rap-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
- .4 Wall Top: Provide Slotted Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
- .5 Wall Base: Provide Slotted Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide [1] [2] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Slotted Rap-Tie L-Plate.

.10 Slotted Heavy Duty Rap-Tie (Rod adjustable Plate Tie):

- .1 Component Sizing:
 - .1 Slotted Heavy Duty L-Plate: Length to suit thickness of insulation.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
 - .3 Insulation Support: Standard, as manufactured.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Slotted Heavy Duty Rap-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Slotted Heavy Duty Rap-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Slotted Heavy Duty Rap-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Slotted Heavy Duty Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Slotted Heavy Duty Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide [1] [2] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Slotted Heavy Duty Rap-Tie L-Plate.

.11 Side Mounting Rap-Tie (Rod Adjustable Plate Tie):

- .1 Component Sizing:
 - .1 Flat Plate: Plate length to suit total thickness of steel stud depth, plus thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable; holes along leading edge to receive V-Tie.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
 - .3 Insulation Support: standard, as manufactured.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- .3 Connector Spacing:
 - .1 Typical: Provide Side Mounting Rap-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Side Mounting Rap-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Side Mounting Rap-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Side Mounting Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Side Mounting Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- .4 Fasteners:
 - .1 Provide 2 – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Side Mounting Rap-Tie Plate.

.12 Slotted Side Mounting Rap-Tie (Rod Adjustable Plate Tie):

- .1 Component Sizing:
 - .1 Slotted Flat Plate: Plate length to suit total thickness of steel stud depth, plus thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
 - .3 Insulation Support: standard, as manufactured.
- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.

- 3 Connector Spacing:
 - .1 Typical: Provide Slotted Side Mounting Rap-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Slotted Side Mounting Rap-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Slotted Side Mounting Rap-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Slotted Side Mounting Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Slotted Side Mounting Rap-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- 4 Fasteners:
 - .1 Provide 2 – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Slotted Side Mounting Rap-Tie Flate Plate.

.13 Slotted Stud Tie (Type [I] [II]):

- 1 Component Sizing:
 - .1 Slotted Stud Plate (Type [I] [II]): Plate length to suit total thickness of steel stud depth, plus thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- 3 Insulation Support: standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 Connector Spacing:
 - .1 Typical: Provide Slotted Stud Tie (Type [I] [II]) at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Slotted Stud Tie (Type [I] [II]) at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Slotted Stud Tie (Type [I] [II]) at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Slotted Stud Tie (Type [I] [II]) at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Slotted Stud Tie (Type [I] [II]) at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- 4 Fasteners:
 - .1 Provide [2] [4] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Slotted Stud Tie (Type [I] [II]) Flat Plate.

.14 Stud Shear Connector:

- 1 Component Sizing:
 - .1 Stud Shear Connector Plate: Plate length to suit total thickness of steel stud depth, plus thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- 3 Insulation Support: standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 Connector Spacing:
 - .1 Typical: Provide Stud Shear Connector at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Stud Shear Connector at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Stud Shear Connector at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Stud Shear Connector at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Stud Shear Connector at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- 4 Fasteners:
 - .1 Provide [2] [4] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Stud Shear Connector Plate.

.15 Block Shear Connector:

- 1 Component Sizing:
 - .1 Block Shear Connector Plate: Length to suit concrete block width, plus thickness of membrane plus insulation where applicable.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.

- 3 Insulation Support: Standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 Connector Spacing:
 - .1 Typical: Provide Block Shear Connector at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Block Shear Connector at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Block Shear Connector at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Block Shear Connector at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Block Shear Connector at maximum [] mm o.c. horizontal at maximum [] mm from wall base.

.16 Slotted Block Tie (Type [I] [II]):

- 1 Component Sizing:
 - .1 Slotted Block Plate (Type [I] [II]): Length to suit concrete block width, plus thickness of membrane plus insulation where applicable.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- 3 Insulation Support: Standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 Connector Spacing:
 - .1 Typical: Provide Slotted Block Tie (Type [I] [II]) at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide Slotted Block Tie (Type [I] [II]) at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide Slotted Block Tie (Type [I] [II]) at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide Slotted Block Tie (Type [I] [II]) at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide Slotted Block Tie (Type [I] [II]) at maximum [] mm o.c. horizontal at maximum [] mm from wall base.

.17 ICF Masonry Veneer Tie System

- 1 Component Sizing:
 - .1 Slotted Flat Plate: Length to suit 50 mm embedment into ICF, plus thickness of insulation.
 - .2 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of unit masonry veneer of solid, semi-solid, or cored units.
- 3 Tie Spacer: Standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 Connector Spacing:
 - .1 Typical: Provide ICF Masonry Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide ICF Masonry Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide ICF Masonry Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide ICF Masonry Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide ICF Masonry Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.

.18 Rubble Masonry Connector; Metal Stud Structural Backing, Side Mounting Tie

- 1 Component Sizing:
 - .1 Stud Shear Connector Plate: Plate length to suit total thickness of steel stud depth, plus thickness of structural sheathing, plus sheathing membrane, plus insulation where applicable; holes along leading edge to receive Slotted Strip Plate.
 - .2 Slotted Plate: Length to accommodate spacing of Stud Shear Connector Plate.
 - .3 V-Tie: Length to suit placement of V-Tie legs coincident with centreline (± 12 mm) of rubble masonry.
- 4 Insulation Support: Standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 V-Tie Spacing:
 - .1 Typical: Provide V-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.

Specifications (CSA A370-14)

- .2 Openings: Provide V-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide V-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide V-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide V-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- 3 Stud Shear Connector Plate Spacing:
 - .1 Typical: Provide Stud Shear Connector Plate at maximum 820 mm o.c. horizontal x maximum 600 mm o.c. vertical.
 - .2 Openings: Provide Stud Shear Connector Plate at maximum 600 mm o.c. around opening, at maximum 300 mm from the edge of opening.
 - .3 Wall Ends: Provide Stud Shear Connector Plate at maximum 600 mm o.c. vertically, at maximum 300 mm from wall end.
 - .4 Wall Top: Provide Stud Shear Connector Plate at maximum 820 mm o.c. horizontal at maximum 200 mm from wall top.
 - .5 Wall Base: Provide Stud Shear Connector Plate at maximum 820 mm o.c. horizontal at maximum 300 mm from wall base.
 - 4 Fasteners:
 - .1 Provide [2] [4] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per Stud Shear Connector Plate.

.19 Rubble Masonry Connector; Metal Stud Structural Backing, Surface Mounting Tie

- 1 Component Sizing:
 - .1 L-Plate: Length to suit thickness of insulation; holes along leading edge to receive Slotted Strip Plate.
 - .2 Slotted Plate: Length to accommodate spacing of L-Plate.
 - .3 V-Tie: Length to suit placement of V-Tie legs coincident with centreline of rubble masonry.
 - .4 Insulation Support: Standard, as manufactured.
- 2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 V-Tie Spacing:
 - .1 Typical: Provide V-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide V-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide V-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide V-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide V-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- 3 L-Plate Spacing:
 - .1 Typical: Provide L-Plate at maximum 820 mm o.c. horizontal x maximum 600 mm o.c. vertical.
 - .2 Openings: Provide L-Plate at maximum 600 mm o.c. around opening, at maximum 300 mm from the edge of opening.
 - .3 Wall Ends: Provide L-Plate at maximum 600 mm o.c. vertically, at maximum 300 mm from wall end.
 - .4 Wall Top: Provide L-Plate at maximum 820 mm o.c. horizontal at maximum 200 mm from wall top.
 - .5 Wall Base: Provide L-Plate at maximum 820 mm o.c. horizontal at maximum 300 mm from wall base.
- 4 Fasteners:
 - .1 Provide [1] [2] – [fastener description, including type, diameter, length, material, finish, and as applicable, head style, drill point, installation hole diameter, depth of embedment, installation torque], per L-Plate.

.20 Rubble Masonry Connector; Concrete Masonry Structural Backing

- 1 Component Sizing:
 - .1 Block Shear Connector Plate: Length to suit concrete block width, plus thickness of membrane plus insulation where applicable.
 - .2 Slotted Plate: Length to accommodate spacing of L-Plate.
 - .3 V-Tie: Length to suit placement of V-Tie legs coincident with centreline of rubble masonry.
 - .4 Insulation Support: Standard, as manufactured.

- .2 Component Finish:
 - .1 All components [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 V-Tie Spacing:
 - .1 Typical: Provide V-Tie at maximum [] mm o.c. horizontal x maximum [] mm o.c. vertical.
 - .2 Openings: Provide V-Tie at maximum [] mm o.c. around opening, at maximum [] mm from the edge of opening.
 - .3 Wall Ends: Provide V-Tie at maximum [] mm o.c. vertically, at maximum [] mm from wall end.
 - .4 Wall Top: Provide V-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall top.
 - .5 Wall Base: Provide V-Tie at maximum [] mm o.c. horizontal at maximum [] mm from wall base.
- 3 Block Shear Connector Plate Spacing:
 - .1 Typical: Provide Block Shear Connector Plate at maximum 820 mm o.c. horizontal x maximum 600 mm o.c. vertical.
 - .2 Openings: Provide Block Shear Connector Plate at maximum 600 mm o.c. around opening, at maximum 300 mm from the edge of opening.
 - .3 Wall Ends: Provide Block Shear Connector Plate at maximum 600 mm o.c. vertically, at maximum 300 mm from wall end.
 - .4 Wall Top: Provide Block Shear Connector Plate at maximum 820 mm o.c. horizontal at maximum 200 mm from wall top.
 - .5 Wall Base: Provide Block Shear Connector Plate at maximum 820 mm o.c. horizontal at maximum 300 mm from wall base.

.21 Masonry Bar Anchors

- 1 Component Sizing:
 - .2 Prescriptive Bar Anchor: in accordance with CSA A370-14:
 - .1 Length: to suit connection of masonry members;
 - .2 minimum thickness: 4.76 + 2 mm base metal;
 - .3 width: 38 ± 2 mm;
 - .4 hooks up or down to a minimum of 50 mm at each end of bar anchor;
 - .5 pre-bent during manufacture to a right angle;
 - .6 where hot-dip galvanized: hot-dip galvanize after cutting, shearing, embossing, bending, drilling or punching.
- 2 Component Finish:
 - .1 [hot dipped galvanized] [stainless steel Type (304) (316)], in accordance with CSA A370.
- 3 Bar Anchor Spacing:
 - .1 [] mm (as required by structural design).

.22 Fast Angle Support:

- 1 Component Sizing:
 - .1 Fero FAST Bracket:
 - .1 Thickness: 4.76 mm (3/16") plate;
 - .2 Specification Depth: Total of air space width plus insulation thickness.
 - .2 Fero Shim Plate: Standard, as manufactured (5 mm thick).
 - .3 Fero Rectangular Washer: Standard, as manufactured (5 mm thick).
 - .4 Fero Wedge Shims: Standard, as manufactured.
 - .5 Shelf Angle: 100 mm x 100 mm x 6 mm (4" x 4" x 1/4")
- 2 Component Finish:
 - .1 All Fero steel components [hot dip galvanized] after fabrication as per CSA A370-14.
- 3 Spacing:
 - .1 FAST Bracket:
 - .1 Typically: Install FAST bracket at [] mm o.c. spacing ± 100 mm (4").
 - .2 Discontinuities: Install a FAST bracket at 100 mm (±4") from wall end, corner, or change of direction.
- 4 Fasteners:
 - .1 One (1) fastener per FAST bracket: 16 mm (5/8") diameter.
 - .2 [fastener description, including type, length, material, finish, and as applicable, head style, installation hole diameter, depth of embedment, installation torque].
 - .3 Edge Distance: [] mm minimum.
- 5 Installation:
 - .1 In accordance with Fero literature, "FAST Fero Angle Support Technology".