

Masonry Reinforcement and Connectors

Section revised and reissued by Addendum 03

## PART 1 - GENERAL

### 1.1 Summary

- .1 Section includes:
  - .1 Masonry reinforcing and anchorage.
  - .2 Connectors for anchorage of masonry veneer
  - .3 Horizontal reinforcing for masonry block wall and partition assemblies.

### 1.2 Submittals

- .1 Submit required submittals in accordance with Section 01 33 00 and Section 04 05 00.

## PART 2 - PRODUCTS

### 2.1 Materials

- .1 General: in accordance with building code and CAN/CSA A370-14 and OBC Table 4.1.8.18.
- .2 Corrosion protection; metal materials: in accordance with building code and CAN/CSA A370-14:
  - .1 For metal located interior to air barrier location: Hot dipped after fabrication in accordance with ASTM A1064/A1064-22, and ASTM A153/A153M-09 Class B2 (457 g/m<sup>2</sup>), mill galvanized.
  - .2 For metal located exterior to the air barrier membrane: Stainless steel Type 304/316.
- .3 Joint reinforcement:
  - .1 Acceptable manufacturers:
    - .1 Blok-Lok.
    - .2 Fero Corporation.
    - ~~.3~~ Substitutions: in accordance with Section 01 25 00.
  - .2 Exterior wall assemblies: 4.75 mm (3/16") wire, welded rod, ladder design unless otherwise indicated.
  - .3 Interior wall assemblies: 9 gauge mill galvanized wire ladder reinforcement.
- .4 Masonry veneer connectors; stud back-up (installed on top of air barrier membrane and sheathing material):
  - .1 ~~Description~~ Wall ties: Stainless steel in accordance with ASTM A666-15 Type 304 or 316 plate construction, wire V-TIE or TRI-TIE masonry veneer connector (4.76 mm (3/16")) cold drawn stainless steel Type 304 or 316 in accordance with ASTM A580/A580M-18, stainless steel or polyethylene insulation securement plates for insulation sheathing:
  - .2 Acceptable *Products*:
    - .1 Fero Thermal Tie 'Slotted Rap-Tie/Holed RAP Tie'.

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- .2 BL-407 Veneer Anchor by Blok-Lok.
- .3 Fasteners: minimum of 2 screws per tie, No. 12, Climaseal coated galvanized steel, self-drill type, #10 minimum.
  - .1 Acceptable Products: "Teks with Bonded Washer" self-drilling fasteners for heavy gauge steel framing applications as manufactured by ITW Construction Products. Length to suit fastening requirements. Length shall be approved by Consultant prior to fastening.
- .5 Retrofix wall ties: Stainless steel remedial wall tie system:
  - .1 'Helifix Dryfix Masonry Pinning System' as supplied by Helifix North America Corporation.
  - .2 Helix Spiro-Ties by JV Building Products
  - .3 Dur-O-Flex Friction Pin by Dur-O-Wall Inc.
  - .4 Diameter to be a minimum of 7.5 mm. Length to suit application.

## PART 3 - EXECUTION

### 3.1 Masonry Reinforcing, Ties, and Connectors - Engineered Applications

- .1 Install masonry reinforcing, ties, and connectors in accordance with engineered design and CAN/CSA A371-14.
- .2 Install brick ties as new brick masonry is being laid between new face brick and new back-up wall in accordance with manufacturer's written requirements.
  - .1 Check the pull-out load obtained on a minimum of 10% of masonry ties installed as directed by Consultant. Additional tests may be required if the required pull-out strengths are not obtained.
  - .2 Wet-set brick tie in mortar prior to laying the next brick.
- .3 Retrofit wall ties:
  - .1 Install retrofit wall ties, where indicated or directed by the Consultant, in accordance with the manufacturer's written requirements.
  - .2 Drill a small pilot hole through the bed joint or brick unit and into the back-up concrete block of cast-in-place concrete. Location, size and depth of pilot hole shall be determined by on site testing performed with the manufacturer's representative and Consultant.
  - .3 Clear the drill bit regularly while drilling to prevent clogging.
  - .4 Install the masonry tie with the special insertion tool supplied by the retrofit tie manufacturer.
  - .5 Check the pull-out load obtained on a minimum of 10% of masonry ties installed as directed by the Consultant. Additional tests may be required if the pull-out strengths are not obtained.
  - .6 Fill entry hole in the brick unit with sealant. Finish sealant flush. Fill entry hole in mortar joint with mortar.

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### 3.2 Movement (Control) Joints

- .1 Installation requirements in accordance with Section 04 05 00 and as supplemented herein.
- .2 Stop reinforcing 25 mm (1") short of each side of movement joints unless otherwise indicated.

### 3.3 Horizontal Reinforcing

- .1 Joint reinforcement:
  - .1 Install horizontal joint reinforcement in cavity walls, solid walls, and partitions in accordance with CAN/CSA A371-14 and as indicated in the *Contract Documents*, the more stringent requirements shall govern.
  - .2 Place reinforcement continuously in horizontal joints at vertical spacing not exceeding 600 mm (24"), beginning with course 400 mm (16") above bearing, unless otherwise indicated.
  - .3 Do not carry reinforcement through intersections where lateral support anchors are installed, at intersections of walls and partitions with solid piers and at block movement joints.
  - .4 Reinforcement shall be lapped 300 mm (12"), minimum, with laps staggered 750 mm (30"), minimum, from course to course. Any cross wires in the lap length of the lapped reinforcement shall be removed.

### 3.4 Masonry Veneer Connectors

- .1 Tie masonry veneer to structural backing in accordance with CAN/CSA A179-14, CSA S304-14, CAN/CSA A370-14, CAN/CSA A371-14, and as indicated on engineered shop drawings.

### 3.5 Reinforced Masonry

- .1 Reinforce masonry lintels and bond beams as indicated. Make joints in lintels and bond beams to match adjacent walls.
- .2 Reinforce masonry walls as indicated on the structural drawings.
- .3 Place and grout reinforcing in accordance with CSA S304-14. Use concrete of 20 MPa strength in accordance with Section 03 30 00.
- .4 Provide minimum 150 mm (6") bearing on supports for lintels.
- .5 Place 100% solid block at each jamb under lintels.

### 3.6 Bolts and Anchors

- .1 Embed bolts and anchors solidly in mortar or grout to develop maximum resistance to design forces.

### 3.7 Lateral Support and Anchorage

- .1 Install lateral support and anchorage in accordance with CAN/CSA A370-14 and as indicated on the structural drawings.

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**END OF SECTION**