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**PART 1 GENERAL**

**1.1 REFERENCES**

- .1 ASTM International
  - .1 ASTM A496/A496M-07, Standard Specification for Steel Wire, Deformed, for Concrete Reinforcement.
  - .2 CSA International
    - .1 CAN/CSA-A165 SERIES 14, CSA Standards on Concrete Masonry Units covers: A165.1, A165.2, A165.3.
    - .2 CAN/CSA-A179-14, Mortar and Grout for Unit Masonry.
    - .3 CAN/CSA-A370-14, Connectors for Masonry.
    - .4 CAN/CSA A371-14, Masonry Construction for Buildings.
    - .5 CSA S304.1-14 Design of Masonry Structures.
  - .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
    - .1 Material Safety Data Sheets (MSDS).

**1.2 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for masonry products and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.

**1.3 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:

- .1 Store materials indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
- .2 Store and protect masonry products from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.

#### **1.4 COLD WEATHER REQUIREMENTS**

- .1 Supplement requirements of CAN3-A371 as follows:
  - .1 Maintain temperature of mortar between -5oC and 5oC until used.

#### **1.5 HOT WEATHER REQUIREMENTS**

- .1 Supplement requirements of CAN3-A371 as follows:
  - .1 Protect freshly laid masonry from drying too rapidly by means of waterproof, non-staining coverings.

### **Part 2 Products**

#### **2.1 MASONRY UNITS**

- .1 Standard concrete block units: to CAN/CSA-A165 Series (CAN/CSA-A165.1).
  - .1 Classification: H or S/15/A/M.
  - .2 Size: modular.
  - .3 Special shapes: provide bull-nosed units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special shapes as indicated.

#### **2.2 REINFORCEMENT AND CONNECTORS**

- .1 Bar reinforcement: to CAN/CSA-A371 Grade 400.
- .2 Wire reinforcement/plain wire: to CAN/CSA-A371 truss type.
- .3 Connectors shall be corrosion resistant: to CAN/CSA-A370 and CSA S304.1.

#### **2.3 MORTAR AND GROUT**

- .1 Mortar: to CAN/CSA-A179.
  - .1 Use aggregate passing 1.18 mm sieve where 6 mm thick joints are indicated.
- .2 Mortar Type:

- .1 Interior non-loadbearing walls: Type N based on proportion specifications.
- .3 Following applies regardless of mortar types and uses specified above:
  - .1 Mortar for grouted reinforced masonry: type S based on property specifications.
- .4 Grout: to CAN/CSA-A179, Table 5.

## **2.4 ACCESSORIES**

- .1 Anchor Bolts: 12 mm diameter x 150 mm long with ends bent 50 mm at 90 degrees, exposed ends threaded with washer and nut.
- .1 Loose steel lintels: in accordance with National Building Code of Canada (NBC) 2015 and Section 05 50 00, galvanized for exterior, prime painted for interior.

## **Part 3 EXECUTION**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for product installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

### **3.2 INSTALLATION**

- .1 Do masonry work in accordance with CAN/CSA-A371 except where specified otherwise.
  - .1 Bond: running stretcher bond with vertical joints in perpendicular alignment and centred on adjacent stretchers above and below.
  - .2 Coursing height: 200 mm for one block and one joint.
  - .3 Jointing: tool where exposed or where paint or other finish coating is specified to provide smooth compressed concave surface.
- .2 Build masonry plumb, level, and true to line, with vertical joints in alignment.

- .3 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

### **3.3 CONSTRUCTION**

- .1 Exposed masonry:
  - .1 Remove chipped, cracked, and otherwise damaged units, in exposed masonry and replace with undamaged units.
  - .2 Cut out for electrical switches, outlet boxes, and other recessed or built-in objects. Make cuts straight, clean, and free from uneven edges.
- .2 Building-in:
  - .1 Install masonry connectors and reinforcement where indicated on drawings.
  - .2 Build in items required to be built into masonry.
  - .3 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
  - .4 Brace door jambs to maintain plumb. Fill spaces between jambs and masonry with mortar.
  - .5 Install loose steel lintels over openings where indicated.
- .3 Concrete block lintels:
  - .1 Install reinforced concrete block lintels over openings in masonry where steel or reinforced concrete lintels are not indicated.
  - .2 End bearing: not less than 200 mm.
- .4 Support of loads:
  - .1 Use 15 MPa concrete, where concrete fill is used in lieu of solid units.
  - .2 Use grout to CAN/CSA-A179 where grout is used in lieu of solid units.
  - .3 Install building paper below voids to be filled with concrete or grout; keep paper 25 mm back from faces of units.
- .5 Provision for movement:
  - .1 Leave 6 mm space below shelf angles.
  - .2 Leave 6 mm space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.
  - .3 Built masonry to tie in with stabilizers, with provision for vertical movement.

.6 Interface with other work:

- .1 Cut openings in existing work as indicated.
- .2 Openings in walls: approved Departmental Representative.
- .3 Make good existing work. Use materials to match existing.

**3.4 REINFORCING AND CONNECTING**

- .1 Install masonry connectors and reinforcement in accordance with CAN/CSA-A370, CAN/CSA-A371 and CSA S304.1 unless indicated otherwise.
- .2 Prior to placing concrete, mortar or grout, obtain Departmental Representative's approval of placement of reinforcement and connectors.

**3.5 BONDING AND TYING**

- .1 Bond walls of two or more wythes using metal connectors in accordance with CAN/CSA-A371, CSA S304.1 and as indicated.

**3.6 MODIFICATIONS TO EXISTING MASONRY**

- .1 Install masonry connectors and reinforcement in accordance with CAN/CSA-A370, CAN/CSA-A371 and CSA S304.1 unless indicated otherwise.

**3.7 REINFORCED LINTELS AND BOND BEAMS**

- .1 Reinforce masonry lintels and bond beams as indicated.
- .2 Place and grout reinforcement in accordance with CAN/CSA-A179, CAN/CSA-A371 and CSA S304.1.

**3.8 GROUTING**

- .1 Grout masonry in accordance with CAN/CSA-A179, CAN/CSA-A371 and CSA S304.1 and as indicated.

**3.9 ANCHORS**

- .1 Supply and install metal anchors as indicated.

**3.10 LATERAL SUPPORT AND ANCHORAGE**

- .1 Supply and install lateral support and anchorage in accordance with CSA S304.1 and as indicated.

**3.11 SITE TOLERANCES**

- .1 Tolerances of CAN/CSA-A371 apply.

**3.12 FIELD QUALITY CONTROL**

- .1 Inspection and testing will be carried out by Testing Laboratory designated by Departmental Representative.

### **3.13 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Leave Work area clean at end of each day.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.14 PROTECTION**

- .1 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.
- .2 Repair damage to adjacent materials caused by masonry products installation.

**END OF SECTION**