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**Partie 1      General**

**1.1            RELATED REQUIREMENTS**

- .1      Section 04 05 00 – Common Work Results for Masonry.
- .2      Section 04 05 12 – Masonry Mortar and Grout.
- .3      Section 04 05 19 – Masonry Anchorage and Reinforcing.
- .4      Section 04 05 23 – Masonry Accessories.
- .5      Section 07 26 00 – Vapour Retarders.
- .6      Section 07 84 00 – Fire Stopping.
- .7      Section 07 92 00 – Joint Sealants.
- .8      Section 09 91 23 – Interior Painting.

**1.2            REFERENCES**

- .1      ASTM International
  - .1      ASTM E336-11, Standard Test Method for Measurement of Airborne Sound Attenuation Between Rooms in Buildings.
- .2      CSA Group
  - .1      CAN/CSA-A165-F04 Series (C2009), CSA Standards on Concrete Masonry Units.
  - .2      CAN/CSA-A371-F04(C2009), Masonry Construction for Buildings.
  - .3      CSA S304.1-F04(C2010), Design of Masonry Structures.
- .3      Underwriters Laboratories of Canada (ULC)
  - .1      CAN/ULC-S101-07(R2010), Standard Methods of Fire Endurance Tests of Building Construction and Materials.

**1.3            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 concrete masonry units and include product characteristics, performance criteria, physical size, finish and limitations.
- .3      Samples:
  - .1      Submit required samples in compliance with Section 04 05 00 – Common Work Results for Masonry.
- .4      Manufacturer's written instructions: submit manufacturer's installation instructions in compliance with Section 04 05 00 - Common Work Results for Masonry.

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#### **1.4 QUALITY ASSURANCE**

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties, and in accordance with Section 04 05 00 - Common Work Results for Masonry.
- .2 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
  - .1 Submit manufacturer's written certification that 200 mm hollow-core and heavy concrete elements have a two-hour fire-resistance rating.
- .3 Mock-ups:
  - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control and requirements of Section 04 05 00 - Common Work Results for Masonry supplemented as follows.
    - .1 Construct mock-up panel of concrete unit masonry construction 1200 x 1800 mm.

#### **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
  - .1 Offload concrete unit masonry packages using equipment that will not damage the surfaces.
  - .2 Do not use brick tongs to move or handle masonry.
- .3 Storage and Handling Requirements
  - .1 Store materials off ground, indoors in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
  - .2 Do not double stack cubes of concrete unit masonry.
  - .3 Cover masonry units with non-staining waterproof membrane covering.
  - .4 Allow air circulation around units.
  - .5 Installation of wet or stained masonry units is prohibited.
  - .6 Keep concrete unit masonry in individual cardboard packaging provided by manufacturer until units are ready to be installed.
  - .7 Store and protect concrete unit masonry from nicks, scratches, and blemishes.
  - .8 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

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**1.6 ACCEPTABLE PRODUCTS AND MATERIALS**

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products

**Partie 2 Products**

**2.1 MATERIALS**

- .1 Standard concrete block units, regular, heavy, hollow-core: to CAN/CSA-A165 Series (CAN/CSA-A165.1).
- .1 Classification: H/15/A/M.
- .2 Size: modular and as needed.
- .3 Special shapes: use square units for exposed corners. Provide purpose-made shapes for lintels, beams and bond beams. Provide additional special shapes as indicated.
- .2 Fire rated concrete block units, regular, heavy, hollow-core: to CAN/CSA-A165 Series (CAN/CSA-A165.1) as modified below.
- .1 Classification: H/15/A/M, due to fire resistant characteristics below.
- .2 Fire resistant characteristics: aggregate used in units and equivalent thickness of units to the National Building Code of Canada, 2010 edition, and in accordance with CAN/ULC-S101, for fire-resistance ratings indicated.
- .3 Size: modular.
- .4 Special shapes: provide square units for exposed corners. Provide purpose-made shapes for lintels and bond beams and provide additional shapes as indicated.

**2.2 REINFORCEMENT**

- .1 Reinforcement in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

**2.3 CONNECTORS**

- .1 Connectors in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

**2.4 FLASHING**

- .1 Flashing: in accordance with Section 04 05 23 - Masonry Accessories.

**2.5 MORTAR MIXES**

- .1 Mortar and mortar mixes in accordance with Section 04 05 12 - Masonry Mortar and Grout.

**2.6 GROUT MIXES**

- .1 Grout and grout mixes in accordance with Section 04 05 12 - Masonry Mortar and Grout.

## **2.7 CLEANING COMPOUNDS**

- .1 Use low VOC products in compliance with SCAQMD Rule 1168.
- .2 Compatible with substrate and acceptable to masonry manufacturer for use on products.
- .3 Cleaning compounds compatible with concrete unit masonry and in accordance with manufacturer's written recommendations and instructions.

## **2.8 TOLERANCES**

- .1 Tolerances for standard concrete unit masonry tolerances in accordance with CAN/CSA-A165.1, supplemented as follows.
  - .1 Maximum variation between units within specific job lot not to exceed 2 mm.
  - .2 No parallel edge length, width or height dimension for individual unit to differ by more than 2 mm.
  - .3 Out of square tolerance not to exceed 2 mm.

## **Partie 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for concrete unit masonry 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 PREPARATION**

- .1 Protect adjacent finished materials from damage due to masonry work.

### **3.3 INSTALLATION**

- .1 Concrete block units:
  - .1 Bond: running course and as indicated.
  - .2 Coursing height: 200 mm for one block and one joint.
  - .3 Jointing: concave where exposed or where paint or other finish coating is specified.
- .2 Special Shapes
  - .1 Install special units to form corners, returns, offsets, reveals and indents without cut ends being exposed and without losing bond or module.
  - .2 Install reinforced concrete block lintels over openings in masonry where steel or reinforced concrete lintels are not indicated.

- .3 End bearing: not less than 200 mm as indicated on drawings.

### **3.4 REINFORCEMENT**

- .1 Install reinforcing in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

### **3.5 CONNECTORS**

- .1 Install connectors in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.

### **3.6 FLASHING**

- .1 Install flashings: in accordance with Section 04 05 23 - Masonry Accessories.

### **3.7 MORTAR PLACEMENT**

- .1 Place mortar in accordance with Section 04 05 12 - Masonry Mortar and Grout.

### **3.8 GROUT PLACEMENT**

- .1 Place grout in accordance with Section 04 05 12 - Masonry Mortar and Grout.

### **3.9 CONSTRUCTION**

- .1 Cull out masonry units, in accordance with CAN/CSA-A165 and approved range of colour samples, with chips, cracks, broken corners, excessive colour and texture variation.
- .2 Build in miscellaneous items such as bearing plates, steel angles, bolts, anchors, inserts, sleeves and conduits.
- .3 Construct masonry walls using running bond unless otherwise noted.
- .4 Build around frames previously set and braced. Fill behind hollow frames within masonry walls with mortar or grout and embed anchors.
- .5 Fit masonry closely against electrical and plumbing outlets so collars, plates and covers overlap and conceal cuts.
- .6 Install movement joints and keep free of mortar where indicated.
- .7 Hollow Units: spread mortar setting bed from outside edge of face shells. Gauge amount of mortar on top and end of unit to create full joints, equivalent to shell thickness. Avoid excess mortar.
- .8 Solid Units: apply mortar over entire vertical and horizontal surfaces. Avoid bridging of airspace between brick veneer and backup wall with mortar.
- .9 Ensure compacted head joints. Use full or face-shell joint as indicated.
- .10 Tamp units firmly into place.
- .11 Do not adjust masonry units after mortar has set. Where resetting of masonry is required, remove, clean and reset units in new mortar.
- .12 Tool exposed joints concave; strike concealed joints flush.

- .13 After mortar has achieved initial set up, tool joints.
- .14 Do not interrupt bond below or above openings.

### **3.10 REPAIR/RESTORATION**

- .1 Upon completion of masonry, fill holes and cracks, remove loose mortar and repair defective work.

### **3.11 FIELD QUALITY CONTROL**

- .1 Site Tests, Inspection: in accordance with Section 04 05 00 - Common Work Results for Masonry supplemented as follows.
  - .1 Concrete masonry units will be sampled and tested by independent testing agency appointed and paid by Departmental Representative in accordance with CSA S304.1.
  - .2 Notify inspection agency minimum of 24 hours in advance of requirement for tests.

### **3.12 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Standard Concrete Unit Masonry:
    - .1 Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of block. Clean wall surface with suitable brush or burlap.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
- .3 Waste Management: separate waste materials for reuse/recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

### **3.13 PROTECTION**

- .1 Brace and protect concrete unit masonry in accordance with Section 04 05 00 - Common Work Results for Masonry.

**END OF SECTION**