

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 04 22 00 - Concrete Unit Masonry.

### **1.2 REFERENCES**

- .1 Canadian Standards Association (CSA International).
  - .1 CAN/CSA A179-04, Mortar and Grout for Unit Masonry.

### **1.3 SUBMITTALS**

- .1 Product Data.
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's mortar, grout, parging, color additives and admixtures.
- .2 Samples.
  - .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Submit two samples of mortar.
- .3 Manufacturer's Instructions.
  - .1 Submit manufacturer's installation instructions.

### **1.4 QUALITY ASSURANCE**

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

### **1.5 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material in appropriate on-site containers in accordance with Waste Management Plan.

## **2 Products**

### **2.1 MATERIALS**

- .1 Use same brands of materials and source of aggregate for entire project.
- .2 Mortar and grout: CSA A179.
- .3 Use aggregate passing 1.18 mm sieve where 6 mm thick joints are indicated.
- .4 Color: ground colored natural aggregates or metallic oxide pigments.
- .5 Mortar for interior masonry.
  - .1 Load bearing: type N based on property specifications.
  - .2 Non-Load bearing: type N based on property specifications.
- .6 Following applies regardless of mortar types and uses specified above:
  - .1 Mortar for calcium silicate brick and concrete brick: type O based on Proportion specifications.
  - .2 Mortar for stonework: type N based on proportion specifications.
  - .3 Mortar for grouted reinforced masonry: type S based on property specifications.
  - .4 Mortar for glass block: 1 part Portland cement, 1 part hydrated lime, 4 parts aggregate by volume.

- .7 White mortar: use white Portland cement, and lime to produce mortar type specified.
- .8 Colored mortar: use coloring admixture not exceeding 10% of cement content by mass, or integrally colored masonry cement, to produce colored mortar to match approved sample.
- .9 Non-Staining mortar: use non-staining masonry cement for cementitious portion of specified mortar type.
- .10 Grout: to CSA A179, Table 3, minimum 25MPa.

## **2.2 MIXES**

- .1 Color and mix grout to semi-fluid consistency.
- .2 Colored mortars: incorporate color into mixes in accordance with manufacturer's instructions.
  - .1 Use clean mixer for colored mortar.

## **3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions, and data sheets.

### **3.2 CONSTRUCTION**

- .1 Do masonry mortar and grout work in accordance with CSA A179 except where specified otherwise.
- .2 All glass block in accordance with manufacturers recommendations and/or instructions.
- .3 Grout the following masonry components:
  - .1 All cores of block for full height of vertical reinforcement.
  - .2 All cores of block for full height of dowels.
  - .3 All lintel blocks and continuous bond beams.
  - .4 All cores in which both horizontal and vertical anchor bolts and similar devices are embedded.
  - .5 Top two courses of block at locations where concrete block forms back up for exterior walls.
  - .6 Reinforce and fully grout every core of block walls, as well as door frames, at Psych. Rooms. Joints are to be flush.
  - .7 Top two courses where block walls terminate below structure and carry up as steel stud partition.
  - .8 All cores at block courses supporting stair landing bearing end/supports.
  - .9 All other locations where vertical reinforcing or grout is indicated on drawings.

### **3.3 CLEANING**

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

End of Section

## **1 General**

### **1.1 RELATED SECTIONS**

- .1 Section 04 05 13 - Masonry Mortar and Grout.

### **1.2 REFERENCES**

- .1 Canadian Standards Association (CSA International)
  - .1 CAN/CSA A165 SERIES-04, CSA Standards on Concrete Masonry Units.

### **1.3 QUALITY ASSURANCE**

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .2 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
- .3 Units having a required fire resistance rating shall be identified by the manufacturer by marking each pallet or cube, or by other means.

### **1.4 WASTE MANAGEMENT AND DISPOSAL**

- .1 Collect and separate for disposal waste material in appropriate on-site bins in accordance with Waste Management Plan.

## **2 Products**

### **2.1 MATERIALS**

- .1 Standard hollow concrete masonry units to CSA-A165.
  - .1 Classification: H/15/A/M
  - .2 Size: modular
  - .3 Special shapes: provide as follows:
    - .1 Bull-nosed units for all exposed corners.
    - .2 Square sash-block units at all control joint locations.
    - .3 Purpose-made shapes for lintels and bond beams.
    - .4 Solid units at wall caps where wall terminates below ceiling.
    - .5 Additional shapes as indicated.
  - .4 Acceptable Materials:
    - .1 Shaw Brick
    - .2 E.J. Casey Concrete Limited
    - .3 L.E. Shaw Limited
    - .4 South Shore Ready Mix Limited
    - .5 V.J. Rice Concrete Limited
- .2 Exterior accent units at window surrounds and within brick panels.
  - .1 Classification: H/15/A/M.
  - .2 Size 90T x 190H x 390L (cut from 390L units)
  - .3 Light reflectance: 20%
  - .4 Special shapes: provide jamb and cap units as required to provide glazing on all exposed surfaces of units adjacent to bull-nosed brick, etc. at window surrounds.
  - .5 Color selection: one (1) color only. For bidding purposes assume the color indicated under Clause 6 below.
  - .6 Standard of Acceptance:
    - .1 Spectra-Glaze II - S - 47 - Deep Sierra Red.
- .3 Architectural Concrete Block: to CAN3-A165.1-M85: Use L.E.Shaw Architectural Block or

acceptable alternate.

- .1 Classification: S/25/A/M
- .2 Size: Modular
- .3 Texture: Split Ashlar
- .4 Colour to be:
  - .1 Colour A: Bark
  - .2 Colour B: Natural Grey
- .4 Allan Block Retaining Wall Units: Wall units to have minimum strength of 20.67 MPa after 28 days in accordance with ASTM C90.
  - .1 Type: AB Three
  - .2 Coverage: 1 sq. ft. per block
  - .3 setback: 3 degrees from vertical
  - .4 Dimensions: 200mm H x 500mm D x 450mm L
  - .5 Weight 34kg
  - .6 Supply matching capstone
  - .7 Colour to match Architectural Block colour A.

### **3 Execution**

#### **3.1 INSTALLATION**

- .1 Concrete block units.
  - .1 Bond: running.
  - .2 Coursing height: 200 mm for one block and one joint.
  - .3 Jointing:
    - .1 Concave where exposed or where paint or other similar finish coating is specified
    - .2 Flush at interior wall faces behind steel stud furring to receive furring channels, tile or similar applied finish.
    - .3 Flush at exterior face to receive air/vapor barrier membrane.
    - .4 Maintain cavity at masonry walls free from mortar droppings.
- .2 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 as indicated on drawings.

#### **3.2 QUALITY CONTROL**

- .1 Notwithstanding visual inspection requirements of CSA Standards, masonry units shall be free of surface indentations, surface cracks due to manufacture, or chipping.
- .2 THE REQUIREMENTS OF CLAUSE .1 ABOVE WILL BE STRICTLY ENFORCED AND CONTRACTOR WILL BE REQUIRED TO EITHER REPLACE UNACCEPTABLE UNITS, OR AT THE CONSULTANT'S DISCRETION, DEMOLISH PART OF ALL OF A WALL DEEMED BY THE CONSULTANT, AS NOT MEETING THOSE REQUIREMENTS.

#### **3.3 HEATING PIPING IN CONCRETE UNIT MASONRY WALLS**

- .1 Where heating piping supply and return lines travel vertically in concrete block walls cores of block to be aligned and/or webs cut, and masonry work coordinated with work of Mechanical Sections to permit installation of heating lines.

#### **3.4 CONCRETE MASONRY 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 200mm.

### 3.5 GROUTING-IN OF DOOR FRAMES

- .1 Fill fire-rated door frames solid with mortar.

### 3.6 RETAINING WALL

- .1 Install retaining wall to the requirements of the manufacturer's printed instructions and as indicated on the drawings.

- .2 Crushed stone or gravel base: consisting of hard, durable, angular particles, free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

- .1 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1 rather than ASTM E 11.

<u>Sieve Designation</u>	<u>% Passing</u>
19mm	100
12.5mm	70-100
3.3mm	40-3.4
2.00mm	23-50
0.425mm	7-25
0.075mm	3-8

- .3 Manufactured sand for bedding: hard, durable, crushed stone particles, conforming to the gradation of concrete sand as specified in CAN/CSA A23.1, Section 5.3.2 Sand shall be free from clay lumps, cementation, organic material, frozen material and other deleterious materials.

- .1 Gradations: within limits specified when tested to ASTM C 136 and ASTM C 117. Sieve sizes to CAN/CGSB-8.1 rather than ASTM E 11.

<u>Sieve Designation</u>	<u>% Passing</u>
10mm	100
5mm	95-100
2.5mm	80-100
1.25mm	50-90
0.630mm	25-60
0.315mm	10-35
0.160mm	2-10

### 3.7 CLEANING

- .1 Standard block: Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of block and finally by brushing.
- .2 Glazed block: Clean masonry as work progresses using soft, clean cloths, within few minutes after laying. Upon completion, when mortar has set so that it will not be damaged by cleaning, clean with soft sponge or clean cloths, brush, and clean water. Polish with soft, clean cloths.

End of Section