

**Part 1 General**

**1.1 SECTION INCLUDES**

- .1 Mortar and grout for masonry.

**1.2 RELATED SECTIONS**

- .1 Section 04 26 16 - Veneer Masonry.
- .2 Section 04 26 19 - Reinforced Unit Masonry.

**1.3 REFERENCES**

- .1 CSA A179-2019 - Mortar and Grout for Unit Masonry.
- .2 CSA A371-2019 - Masonry Construction for Buildings.
- .3 CAN/CSA-A3000-2021 - Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
- .4 CSA-S304-2019 - Design of Masonry Structures.

**1.4 SUBMITTALS FOR REVIEW**

- .1 Submit in accordance with Section 01 33 00.
- .2 Mix Design: Include design mix, indicate whether the Proportion or Property specification of CSA-A179 is to be used, required environmental conditions, and admixture limitations.
- .3 Samples: Submit two (2) samples of mortar, illustrating mortar colour and colour range.

**1.5 SUBMITTALS FOR INFORMATION**

- .1 Submit in accordance with Section 01 33 00.
- .2 Reports:
  - .1 Submit reports on mortar indicating conformance of mortar to property requirements of CSA A179, component mortar materials to requirements of CSA A179 and test and evaluation reports to CSA A179.
  - .2 Submit reports on grout indicating conformance of component grout materials to requirements of CSA A179 and test and evaluation reports to CSA A179.
- .3 Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

**1.6 DELIVERY, STORAGE, AND PROTECTION**

- .1 Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

## **1.7 ENVIRONMENTAL REQUIREMENTS**

- .1 Cold and Hot Weather Requirements: CSA A371 - Masonry Construction for Buildings.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Cementitious Material: CSA A179.
  - .1 Portland Cement: CSA A3001, Type GU, natural grey colour.
- .2 Mortar Aggregate: CSA A179, fine aggregate.
- .3 Grout Aggregate: CSA-A179, fine aggregate.
- .4 Water: Clean and potable.
- .5 Admixtures: VOC compliant, type required to suit mix design.
- .6 Cleaning Solution: Maximum 25 g/l VOC.

### **2.2 MORTAR MIXES**

- .1 Mortar: Use Type S mortar to CSA A179 for all exterior concrete masonry walls and all interior walls. Maximum 250 g/l VOC.
- .2 Mortar Colour: Provide coloured additives for exterior coloured mortar to match existing as designated by the Departmental Representative.

### **2.3 MORTAR MIXING**

- .1 Mix mortar ingredients in accordance with CSA A179 in quantities needed for immediate use.
- .2 Add mortar admixtures in accordance with manufacturer's written instructions. Provide uniformity of mix.
- .3 Do not use antifreeze liquids, calcium chloride, frost inhibitors based on calcium chloride, salts or other substances used for lowering the freezing point or accelerating setting time.
- .4 If moisture is lost by evaporation, retemper with water in quantities and at intervals sufficient to restore workability
- .5 Use mortar within 1 1/2 hours after mixing at temperatures of 25 degrees C or higher, or 2 1/2 hours at temperatures less than 25 degrees C within period specified by mortar manufacturer.

### **2.4 GROUT MIXES**

- .1 Bond Beams and Lintels: 21 MPa strength at 28 days; 200-250 mm slump; mixed in accordance with CSA A179. Maximum 250 g/l VOC.
- .2 Engineered Masonry: 21 MPa strength at 28 days; 200-250 mm slump; mixed in accordance with CSA A179. Maximum 250 g/l VOC.

**2.5 GROUT MIXING**

- .1 Mix grout in accordance with CSA A179.
- .2 Add admixtures in accordance with manufacturer's written instructions; mix uniformly.
- .3 Do not use antifreeze liquids, calcium chloride, frost inhibitors based on calcium chloride, salts or other substances used for lowering the freezing point or accelerating setting time.

**Part 3 Execution**

**3.1 EXAMINATION**

- .1 Request inspection of spaces to be grouted.

**3.2 PREPARATION**

- .1 Apply bonding agent to existing surfaces.
- .2 Plug clean-out holes with block masonry units. Brace masonry for wet grout pressure.

**3.3 INSTALLATION**

- .1 Install mortar and grout in accordance with CSA A179.

**3.4 FIELD QUALITY CONTROL**

- .1 Perform testing in accordance with Sections 01 45 00.
- .2 Test mortar and grout mix in accordance with CSA A179.

**END OF SECTION**

**Part 1                      Part 1                      General**

**1.1                      SECTION INCLUDES**

- .1           Continuous wire reinforcement and reinforcing rods.
- .2           Masonry anchors and ties.
- .3           Veneer anchors and ties.

**1.2                      RELATED SECTIONS**

- .1           Section 04 04 05 – Masonry, Mortaring and Grouting.
- .2           Section 04 04 25 - Masonry Units.
- .3           Section 04 26 16 - Veneer Masonry.
- .4           Section 04 26 19 - Reinforced Unit Masonry.

**1.3                      SUBMITTALS**

- .1           Submit in accordance with Section 01 33 00.
- .2           Product Data: Submit for wire and bar reinforcing supplied by this Section.

**1.4                      REFERENCES**

- .1           ASTM A53/A53M-2020 - Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
- .2           ASTM A123/A123M-2017 - Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .3           ASTM C1242-2022 - Guide for Selection, Design, and Installation of Dimension Stone Anchoring Systems.
- .4           CSA G30.18-2021 - Carbon Steel Bars for Concrete Reinforcement.
- .5           CAN/CSA-G40.18-M92 (R2002) - Billet-Steel Bars for Concrete Reinforcement.
- .6           CAN/CSA G40.20/G40.21-2018 - General Requirements for Rolled or Welded Structural Steel/Structural Quality Steel.
- .7           CAN/CSA-G164-2020 - Hot Dip Galvanizing of Irregularly Shaped Articles.
- .8           CSA A370-2018 - Connectors for Masonry.
- .9           CSA A371-2019 - Masonry Construction for Buildings.
- .10          CSA G30.3-M1983 (R1998) - Cold-Drawn Steel Wire for Concrete Reinforcement.
- .11          CSA-S304-2019 - Masonry Design for Buildings.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Steel Wire: CSA G30.3.
- .2 Steel Sections and Plates: CAN/CSA-G40.20/G40.21, Grade 350W.

**2.2 REINFORCEMENT**

- .1 Refer to Drawings for reinforcement details for interior and exterior walls.
- .2 Single Wythe Joint Reinforcement: CSA A370, continuous truss type; cold drawn steel wire.
  - .1 Finish:
    - .1 Exterior use: Hot dip galvanized to ASTM A123/A123M after fabrication.
    - .2 Interior Use: Plain mill finish.
  - .2 Wire Size: As indicated on Drawings.
- .3 Bar Reinforcing Steel: CAN/CSA-G40.18, Grade 400W, deformed billet bars, uncoated finish.
- .4 Bar Anchors: CSA A370, bent steel shape, hot dip galvanized to ASTM A123/A123M after fabrication.
- .5 Rod and Bolt Anchors: CSA A370, formed steel rods, adjustable, hot dip galvanized to ASTM A123/A123M after fabrication, size as indicated.

**2.3 MASONRY VENEER TIES AND ANCHORS**

- .1 Veneer Ties for Concrete Masonry Backup: to CSA A370, designed to allow for vertical differential movement and tie placement adjustability during construction:
  - .1 Acceptable Products: Blok-Lok BL507, Fero Slotted Block Tie Type 1 or approved equal.
  - .2 Base Plate: Hot dip galvanized, minimum 1.5 mm (16 gauge) thickness, embedded type connector for head joints in masonry back-up, 50 mm wide by length to suit.
  - .3 Wire Tie: 4.76 mm diameter wire V-tie, galvanized steel. Length of V-tie to suit masonry units.
  - .4 Insulation Retainer: Plastic, wedge-type insulation retainer. Provide one for each tie in cavity wall construction; coordinate installation with placement of insulation.
- .2 Veneer Ties for Wood or Steel Framing and Cast-in-place Concrete Backup: to CSA A370, designed to face fasten through sheathing into stud backup or face fasten to concrete and allow for vertical differential movement and tie placement adjustability during construction:
  - .1 Acceptable Products: Blok-Lok BL407, Fero Slotted Rap Tie or approved equal.
  - .2 Base Plate: Hot dip galvanized, minimum 1.5 mm (16 gauge) thickness, L-type connector, 50 mm wide by length to suit.
  - .3 Wire Tie: 4.76 mm diameter wire V-tie, galvanized steel. Length of V-tie to suit masonry units.
  - .4 Insulation Retainer: Plastic, wedge-type insulation retainer. Provide one for each tie in cavity wall construction; coordinate installation with placement of insulation.

- .5 Connect with screws recommended by manufacturer. Submit sample.

## **2.4 ANCHORAGE TO STRUCTURAL STEEL**

- .1 Column Anchors: minimum 6.35 mm diameter wire x 178 mm length, plain finish, field welded to columns, beams and tubes.  
Acceptable Products: Blok-Lok Flex-O-Lok Anchor Type A or approved equal.
- .2 Web Ties: for use with adjustable column anchors, minimum 4.76 mm diameter wire x length x width to suit masonry unit size, plain finish.  
Acceptable Products: Blok-Lok BLT-9 and BLT-9A or approved equal.
- .3 Refer to Structural Drawings for additional masonry connectors.

## **2.5 FABRICATION**

- .1 Refer to Drawings for typical masonry wall reinforcing details.
- .2 Fabricate reinforcement, anchors, ties and connectors to CSA A370.
- .3 Fabricate bar reinforcing to CSA A23.1-04/A23.2-04.
- .4 Refer to Structural Drawings for additional masonry connectors and details.

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Install masonry connections, anchors and reinforcing as indicated in masonry Sections 04 26 16 and 04 26 19 and as shown on the Drawings.
- .2 Field weld connections to structural members.

**END OF SECTION**

**Part 1 General**

**1.1 SECTION INCLUDES**

- .1 Concrete block masonry units.
- .2 Clay brick masonry units.

**1.2 RELATED SECTIONS**

- .1 Section 04 04 05 - Masonry, Mortaring and Grouting.
- .2 Section 04 04 15 - Masonry Anchorage and Reinforcement.
- .3 Section 04 26 16 - Veneer Masonry.
- .4 Section 04 26 19 - Reinforced Unit Masonry.

**1.3 REFERENCES**

- .1 CSA A23.1/A23.2-2019 - Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices For Concrete.
- .2 CSA A23.3-2019 - Design of Concrete Structures.
- .3 CSA A23.4-2021 - Precast Concrete - Materials and Construction.
- .4 CSA A82-2018 - Fired Masonry Brick Made from Clay or Shale.
- .5 CSA A165 SERIES-2019 - CSA Standards on Concrete Masonry Units (Consists of A165.1, A165.2 and A165.3).
- .6 CSA A371-2019 - Masonry Construction for Buildings.
- .7 CSA S304-2019 - Design of Masonry Structures.

**1.4 SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data: Submit for each masonry unit supplied by this Section.
- .3 Samples: Submit two samples of each unit, installed by this Section, to illustrate colour, texture and extremes of colour range.

**Part 2 Products**

**2.1 CONCRETE BLOCK MASONRY UNITS**

- .1 Concrete Block Masonry Units (CMU): CSA-A165 Series (CSA-A165.1), Type H/15/A/M.
  - .1 Acceptable Manufacturer: Shaw or approved equal.
  - .2 Standard Size: modular 190 mm high x 390 mm long x thickness indicated.

- .3 Special shapes: Provide bond beam units, bullnose units and other shapes as indicated.

## **2.2 CLAY BRICK MASONRY UNITS**

- .1 Burned Clay Brick: CAN/CSA A82.1:
- .2 Brick: TBD by Shaw; 190 mm x 90 mm x 57 mm.

## **2.3 FABRICATION**

- .1 Manufacture masonry units to CSA-A371 and CSA-S304.1.

## **Part 3 Execution**

### **3.1 INSTALLATION**

- .1 Install masonry units as specified in masonry Sections 04 26 16 and 04 26 19.

**END OF SECTION**



**Part 1 General**

**1.1 SECTION INCLUDES**

- .1 Clay brick masonry units for exterior veneer.
- .2 Reinforcement, anchorage, and accessories.

**1.2 RELATED SECTIONS**

- .1 Section 04 04 05 - Masonry, Mortaring and Grouting.
- .2 Section 04 04 15 - Masonry Anchorage and Reinforcement.
- .3 Section 04 04 25 - Masonry Units.
- .4 Section 05 50 00 - Metal Fabrications.
- .5 Section 07 21 00 - Building Insulation.
- .6 Section 07 92 00 - Joint Sealants.

**1.3 REFERENCES**

- .1 CSA A370-2018 – Connectors for Masonry.
- .2 CSA A371-2019 - Masonry Construction for Buildings.
- .3 CSA S304-2019 - Design of Masonry Structures.
- .4 New Brunswick Occupational Health and Safety Act (O.C. 91-1035).
  - .1 General Regulation 91-191.
- .5 New Brunswick Apprenticeship and Occupational Certification Act, Chapter A-9.1.
  - .1 General Regulation 97-125.

**1.4 REGULATORY REQUIREMENTS**

- .1 Contractors are required to ensure that the Bricklayer Trade is in accordance with the NB Apprenticeship and Occupational Certification Act, Compulsory Occupations, Section 17(2).
- .2 No person other than a registered apprentice or a person employed during a probationary period shall engage in the bricklayer trade unless they hold a current certificate of qualification or a current special certificate.
- .3 The ratio of apprentices to journeypersons must comply with the Apprenticeship and Trades Qualifications Act General Regulations.
- .4 When requested by the Departmental Representative, provide proof of compliance with the Act and its Regulations.

- .5 The masonry contractor is to furnish, at the request of the Departmental Representative, a list of completed projects similar in scope and of equal or more value than this project completed in the last five years.

## **1.5 ADMINISTRATIVE REQUIREMENTS**

- .1 Coordination:
  - .1 Coordinate with other work having a direct bearing on work of this section.
  - .2 Coordinate the masonry work with installation of air/vapour barrier and openings within wall assembly.
- .2 Pre-installation Meetings: Convene one (1) week before starting work of this section.

## **1.6 TEMPORARY REQUIREMENTS**

- .1 Scaffolding and access to Work:
  - .1 Provide scaffolding as required to access the Work and for storage of materials.
  - .2 Comply with local occupational health and safety regulations.
  - .3 Allow access to scaffolding by other trades whose Work is integral or related to the Work of this Section, including but not limited to installation of masonry back-up, air and vapour barrier membrane, cavity wall insulation, and openings.
- .2 Heating and Hoarding: By General Contractor; coordinate installation of temporary utilities and equipment required to maintain specified environmental requirements.

## **1.7 SUBMITTALS FOR REVIEW**

- .1 Section 01 33 00: Submission procedures.
- .2 Product Data:
  - .1 Provide data on accessories.
  - .2 Submit for each sealant, primer and adhesive product supplied by this Section.

## **1.8 QUALITY ASSURANCE**

- .1 Perform Work in accordance with CSA A371 - Masonry Construction for Buildings.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.

## **1.9 DELIVERY, STORAGE, AND HANDLING**

- .1 Package and protect masonry units to arrive undamaged at the job site.
- .2 Store masonry under waterproof cover on pallets or plank platforms held off ground.

## **1.10 ENVIRONMENTAL REQUIREMENTS**

- .1 Cold and Hot Weather Requirements: CSA A371 - Masonry Construction for Buildings.

**Part 2 Products**

**2.1 MASONRY UNITS**

- .1 Masonry Units: Specified in Section 04 04 25.

**2.2 ANCHORAGE AND REINFORCEMENT**

- .1 Adjustable Wall Ties: Specified in Section 04 04 15.

**2.3 MORTAR AND GROUT**

- .1 Mortar and Grout: Type as specified in Section 04 04 05.

**2.4 COMPONENTS**

- .1 Air and Vapour Barrier Membrane: to Section 07 27 13.
- .2 Insulation: to Section 07 21 00.

**2.5 FLASHINGS**

- .1 Through-Wall Flashing: SBS modified bitumen membrane, self-adhering. Provide primer and head lap sealant and steel sheet support, minimum 1.0 mm thickness;
  - .1 Acceptable Products: Bakor Blueskin TWF, Iko AquaBarrier AVB, Grace Perm- A-Barrier, Soprema Sopraseal WFM or approved equal.
- .2 Galvanized Steel: Membrane flashing support, to ASTM A653/A653M, Z275 (G90) finish; 20 gauge core steel.

**2.6 ACCESSORIES**

- .1 Mortar Collection Mesh: Woven polyester mesh with integral insect screen; applied continuously at weep coursings behind veneer.
- .2 Weep Vents: Moulded PVC cellular vent or woven polyester mesh vent, UV stabilized, flame retardant, insect proof; height to suit masonry unit, colour to match masonry units.
  - .1 Acceptable Products: Blok-Lok Cell Vent, H&B QV Quadro-Vent or approved equal.
- .3 Air Stop: Galvanized steel sheet to ASTM A653/A653M, Z275 (G90) finish; 24 gauge core steel.
- .4 Lap Sealant: Butyl, as specified in Section 07 92 00.
- .5 Exterior Joint Sealant: Refer to Section 07 92 00.
- .6 Preformed Control Joints: Rubber, neoprene or polyvinyl chloride material. Provide with corner and tee accessories, cement fused joints.
- .7 Compressible Joint Filler: ASTM D2240, closed cell polyethylene, urethane or neoprene foam rod; oversized 30 to 50 percent larger than joint width; self-expanding; width to suit joint size x by maximum lengths.
- .8 Termination Bars: 34 mm wide roll formed, pre-punched aluminum, mill finish.

- .1 Manufacturer's Fasteners: Self-tapping high load screw or masonry nail-in anchor as required to suit substrate, complete with 50 mm diameter washer discs.
- .2 Acceptable Products: Johns Manville Termination Systems or approved equal.
- .9 Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

### **Part 3            Part 3 Execution**

#### **3.1                EXAMINATION**

- .1 Verify that field conditions are acceptable and are ready to receive work.
- .2 Verify items provided by other sections of work are properly sized and located.
- .3 Verify that built-in items are in proper location, and ready for roughing into masonry work.
- .4 Verify that veneer ties and anchors penetrating the air vapour barrier membrane are well sealed by Section 07 27 13 prior to commencing Work of this section.

#### **3.2                PREPARATION**

- .1 Direct and coordinate placement of metal anchors supplied to other sections.
- .2 Provide temporary bracing during installation of masonry work to CSA A371. Maintain in place until building structure provides permanent bracing.
- .3 Establish lines, levels, and coursing; protect from disturbance.
- .4 Verify that items built-in under other sections are properly located and sized.
- .5 Clean masonry units prior to erection.
- .6 Do not use wire brushes or implements which will mark or damage exposed surfaces.

#### **3.3                COURSING**

- .1 Build masonry plumb, level, and true to line, with vertical joints in alignment.
- .2 Lay out coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum cutting.
- .3 Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- .4 Coursing: Provide running bond coursing as indicated on Drawings.
- .5 Mortar Joints: Concave.

#### **3.4                PLACING AND BONDING**

- .1 Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- .2 Lay hollow masonry units with face shell bedding on head and bed joints.

- .3 Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- .4 Remove excess mortar as Work progresses.
- .5 Interlock intersections and external corners.
- .6 Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- .7 Perform job site cutting of units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- .8 Install mortar in accordance with CSA A179.
- .9 Shore up units until setting bed will maintain panel in position without movement.
- .10 To accommodate pointing mortar, rake out joints 20 mm. Brush mortar joints clean. Fill joints with pointing mortar. Pack and work into voids. Neatly tool surface to concave joint.
- .11 Install sealant and backing rod at joints.

### **3.5 PROVISION FOR MOVEMENT**

- .1 Leave 6 mm deflection space below shelf angles. Insert foam rod and sealant as specified in Section 07 92 00.
- .2 Leave 25 mm space between top of non-loadbearing wall and structural elements. Do not use wedges.

### **3.6 WEEPS AND VENTS**

- .1 Install weeps in veneer at maximum 600 mm on centre horizontally above through-wall flashing, above shelf angles and lintels, at bottom of walls.
- .2 Install weep between all modular precast concrete sills.

### **3.7 CAVITY BEHIND VENEER**

- .1 Install mortar dropping collection mesh to manufacturer's written instructions.
- .2 Locate continuously on all weep courses, including top of foundation, sills and lintels.

### **3.8 REINFORCEMENT AND ANCHORAGE**

- .1 Install anchors and ties in accordance with CSA A370 and CSA A371.
- .2 Space wall ties in accordance with CSA A370. Increase wall ties where recommended by masonry unit manufacturer.
- .3 Increase quantity of wall ties around perimeter of openings, at wall terminations and corners placed within 200 mm of openings and edges of masonry.

### **3.9 MASONRY FLASHINGS**

- .1 Extend flashings horizontally at foundation walls, above ledge or shelf angles and lintels, at bottom of walls, and as indicated.

- .2 Turn flashing up minimum 200 mm and seal to sheathing.
- .3 Lap end joints minimum 150 mm and seal watertight.
- .4 Turn flashing, fold, and seal at corners, bends, and interruptions.
- .5 Install flashings over steel sheet support in cavity wall construction.

### **3.10 LINTELS**

- .1 Install loose steel lintels centered over openings.
- .2 Maintain minimum 200 mm bearing on each side of opening.

### **3.11 CONTROL AND EXPANSION JOINTS**

- .1 Provide control and expansion joints to locations indicated on Drawings.
- .2 Do not continue horizontal joint reinforcement through control and expansion joints.
- .3 Install control joints in continuous lengths and in accordance with Section 07 92 00.
  - .1 Size control joint in accordance with Section 07 92 00 for sealant performance.
  - .2 Provide joint filler and foam backer rod to support control joint sealant.

### **3.12 ERECTION TOLERANCES**

- .1 Tolerances for unit masonry as recommended in CSA A371.

### **3.13 CUTTING AND FITTING**

- .1 Cut neatly for electrical switches, outlet boxes and other recessed or built-in objects. Coordinate with other sections of work to provide correct size, shape, and location.
- .2 Make cuts straight, clean and free of uneven edges.
- .3 Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### **3.14 CLEANING**

- .1 Remove excess mortar and mortar smears.
- .2 Replace defective mortar. Match adjacent work.
- .3 Clean soiled surfaces with cleaning solution approved by masonry unit manufacturer.
- .4 Use non-metallic tools in cleaning operations.

### **3.15 PROTECTION OF FINISHED WORK**

- .1 Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

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PWGSC  
SEWAGE TREATMENT  
UPGRADES  
SPRINGHILL INSTITUTION  
SPRINGHILL, NS  
PROJECT NO. R.061876.001

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VENEER MASONRY

SECTION 04 26 16  
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**END OF SECTION**

**Part 1 General**

**1.1 SECTION INCLUDES**

- .1 Installation of concrete masonry units.
- .2 Reinforcement, anchorage, and accessories.

**1.2 RELATED SECTIONS**

- .1 Section 04 04 05 - Masonry, Mortaring and Grouting.
- .2 Section 04 04 15 - Masonry Anchorage and Reinforcement.
- .3 Section 04 04 25 - Masonry Units.
- .4 Section 05 50 00 - Metal Fabrications.
- .5 Section 07 92 00 - Joint Sealants.

**1.3 RELATED WORK**

- .1 Mechanical and Electrical: Supply of access doors; installed this Section.

**1.4 REFERENCES**

- .1 CSA A371-2019 - Masonry Construction for Buildings.
- .2 CSA S304-2019 - Design of Masonry Structures.
- .3 CSA W47.1-2019 - Certification of Companies for Fusion Welding of Steel Structures.
- .4 ULC (Underwriters Laboratories of Canada) - List of Equipment and Materials for:
  - .1 Building Materials.
  - .2 Fire Resistance.
  - .3 Firestop Systems and Components.
- .5 ASTM E84-2021a - Test Method for Surface Burning Characteristics of Building Materials.

**1.5 TEMPORARY REQUIREMENTS**

- .1 Scaffolding and access to Work:
  - .1 Provide scaffolding as required to access the Work and for storage of materials.
  - .2 Comply with local occupational health and safety regulations.
  - .3 Allow access to scaffolding by other trades whose Work is integral or related to the Work of this Section, including but not limited to installation of masonry back-up, air and vapour barrier membrane, cavity wall insulation, and openings.



- .2 Heating and Hoarding: By General Contractor; coordinate installation of temporary utilities and equipment required to maintain specified environmental requirements.

## **1.6 SUBMITTALS**

- .1 Sections 01 33 00: Submission procedures.
- .2 Shop Drawings: Indicate bars sizes, spacings, locations, reinforcement quantities, bending and cutting schedules, supporting and spacing devices for reinforcement, and accessories.
- .3 Product Data:
  - .1 Provide data for masonry units and fabricated wire reinforcement.
  - .2 Submit for each sealant and adhesive product supplied by this Section.
- .4 Design Data: Indicate required mortar strength, masonry unit assembly strength in all planes, supportive test data.
- .5 Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.

## **1.7 QUALITY ASSURANCE**

- .1 Perform Work in accordance with CSA A371 - Masonry Construction for Buildings and CSA S304.1 - Design of Masonry Structures.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum three (3) years documented experience.
- .3 Perform work in accordance with Contractor's Indoor Air Quality Plan and Waste Management Plan.

## **1.8 PRE-INSTALLATION CONFERENCE**

- .1 Convene one (1) week before starting work of this section.

## **1.9 DELIVERY, STORAGE, AND PROTECTION**

- .1 Deliver, store, protect and handle products to site.
- .2 Package and protect masonry units to arrive undamaged at the job site.
- .3 Store masonry under waterproof cover on pallets or plank platforms held off ground.

## **1.10 ENVIRONMENTAL REQUIREMENTS**

- .1 Cold and Hot Weather Requirements: CSA A371 - Masonry Construction for Buildings.

## **Part 2 Products**

### **2.1 CONCRETE BLOCK MASONRY UNITS**

- .1 Concrete Block Masonry Units: Specified in Section 04 04 25.

## **2.2 REINFORCEMENT**

- .1 Joint Reinforcement: As Specified in Section 04 04 15.
- .2 Bar Reinforcing Steel: As Specified in Section 04 04 15.

## **2.3 LATERAL SUPPORT AND ANCHORAGE**

- .1 Angles, Clips, Bracing, Struts, Bent Plates and other welded connections to structural steel assemblies: Supplied by Section 05 50 00; installed by this Section.
- .2 Loose Steel Anchorage and Reinforcement: Supplied by Section 05 50 00; installed by this Section.

## **2.4 MORTAR AND GROUT**

- .1 Mortar and Grout: Type as specified in Section 04 04 05.
- .2 Compressible Joint Filler: ASTM 1330, closed cell polyethylene, urethane or neoprene foam rod; oversized 30 to 50 percent larger than joint width; self-expanding; width to suit joint x by maximum lengths.
- .3 Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials. Maximum 100 g/l VOC.

## **2.5 ACCESSORIES**

- .1 Access Doors: Supplied by Mechanical and Electrical Division; installed by this Section.

# **Part 3 Execution**

## **3.1 EXAMINATION**

- .1 Verify that field conditions are acceptable and are ready to receive work.
- .2 Verify items provided by other sections of work are properly sized and located.
- .3 Verify that built-in items are in proper location, and ready for roughing into masonry work.

## **3.2 PREPARATION**

- .1 Direct and coordinate placement of metal anchors supplied to other Sections.
- .2 Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.
- .3 Verify that items built-in under other sections are properly located and sized.

## **3.3 COURSING**

- .1 Build masonry plumb, level, and true to line, with vertical joints in alignment.
- .2 Establish lines, levels, and coursing indicated. Protect from displacement.
- .3 Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

- .4 Concrete Masonry Units:
  - .1 Bond: Running bond coursing as indicated on Drawings.
  - .2 Vertical Coursing: One unit and one mortar joint to equal 200 mm.
  - .3 Mortar Joints:
    - .1 Exposed Masonry: Concave.
    - .2 Concealed Masonry: Strike flush.

### **3.4 PLACING AND BONDING**

- .1 Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- .2 Lay hollow masonry units with face shell bedding on head and bed joints.
- .3 Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
- .4 Remove excess mortar as work progresses.
- .5 Interlock intersections and external corners. Provide prefabricated horizontal tee and corner reinforcement units.
- .6 Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- .7 Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- .8 Cut mortar joints flush where wall tile is scheduled, or resilient base is scheduled.
- .9 Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

### **3.5 PROVISION FOR MOVEMENT**

- .1 Leave 6 mm deflection space below shelf angles. Insert foam rod and sealant as specified in Section 07 92 00.
- .2 Leave 25 mm space between top of non-loadbearing wall and structural elements. Do not use wedges.

### **3.6 REINFORCEMENT AND ANCHORAGE**

- .1 Install masonry connectors and reinforcement in accordance with CSA A370, CSA A371 and CSA S304.1.
- .2 Place joint reinforcement spaced at 400 mm vertically for 140 mm and 190 mm block and at 200 mm vertically for 240 mm block, and in accordance with CSA 371 or as indicated on Structural Drawings.
  - .1 Lap joint reinforcement ends minimum 150 mm.
- .3 Reinforce and grout masonry units and bond beams in accordance with CSA A371 or as indicated on Drawings.

- .1 Lap vertical reinforcing bar 650 mm for 15M bar and 850 mm for 20M bar.
- .2 Centre vertical reinforcing bar in the wall unless noted otherwise.
- .3 Install vertical reinforcing steel with not less than one bar diameter between bars.
- .4 Secure reinforcing steel in place. Inspect steel connections before grouting.
- .5 Provide cleanout openings at bottom of cores containing reinforcement.
- .6 Fill cells containing reinforcement and anchor bolts solidly with grout.
- .7 Install reinforcement at sides of openings. Refer to Drawings.

### **3.7 LINTELS**

- .1 Install loose steel and masonry lintels, centered over openings and as indicated on Architectural and Structural Drawings.
- .2 Install reinforced unit masonry lintels over openings as detailed on Drawings and in accordance with CSA A371 and CSA S304.1.

### **3.8 LATERAL SUPPORT AND ANCHORAGE**

- .1 Coordinate erection of masonry assemblies with installation of lateral support and anchorage provided by Section 05 50 00.
- .2 Space supports and anchors in accordance with CSA A370, CSA A371 and CSA S304.1.
- .3 Field welding to be performed by licensed welders having current welders' certificates to CSA W47.1 (steel).

### **3.9 SUPPORT OF LOADS**

- .1 Grout bond beams as indicated on the drawings.
- .2 Install building paper below voids to be filled with grout; keep paper 25 mm back from face of units.

### **3.10 ENGINEERED MASONRY**

- .1 Lay masonry units with core cells vertically aligned clear of mortar and unobstructed.
- .2 Reinforce masonry unit cores with reinforcement bars and grout in accordance with CSA A179, CSA A371 and CSA S304.1.

### **3.11 CONTROL AND EXPANSION JOINTS**

- .1 Provide continuous control joints as indicated.
- .2 Do not continue horizontal joint reinforcement through control and expansion joints.
- .3 Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's written instructions.
- .4 Size control joint in accordance with Section 07 92 00 for sealant performance.
- .5 Form expansion joint as detailed.

**3.12 BUILT-IN WORK**

- .1 As work progresses, install built-in metal door and glazed frames, access doors supplied by Division 08 and Mechanical and Electrical trades, wood nailing strips, anchor bolts, plates, and other items to be built-in the work and furnished by other sections.
- .2 Install built-in items plumb and level.
- .3 Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.

**3.13 TOLERANCES**

- .1 Tolerances for unit masonry as recommended in CSA A371.

**3.14 CUTTING AND FITTING**

- .1 Cut neatly for electrical switches, outlet boxes and other recessed or built-in objects. Coordinate with other sections of work to provide correct size, shape, and location.
- .2 Make cuts straight, clean and free of uneven edges.
- .3 Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

**3.15 FIELD QUALITY CONTROL**

- .1 Inspect and test all engineered masonry work.

**3.16 CLEANING**

- .1 Remove excess mortar and mortar smears as work progresses.
- .2 Replace defective mortar. Match adjacent work.
- .3 Clean soiled surfaces with cleaning solution.
- .4 Use non-metallic tools in cleaning operations.
- .5 Remove settled dust from building surfaces and permanently installed equipment.

**3.17 PROTECTION OF FINISHED WORK**

- .1 Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

**END OF SECTION**