

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 45 00 - Quality Control.
- .3 Section 01 61 00 - Common Product Requirements.
- .4 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .5 Section 03 30 00 - Cast-In-Place Concrete.
- .6 Section 04 05 12 - Masonry Mortar and Grout.
- .7 Section 04 05 19 - Masonry Anchorage and Reinforcing.
- .8 Section 04 05 23 - Masonry Accessories.
- .9 Section 04 22 00 - Concrete Unit Masonry.
- .10 Section 05 50 00 - Metal Fabrications.
- .11 Section 07 92 00 - Joint Sealants.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International):
 - .1 CSA-A165 Series, Standards on Concrete Masonry Units.
 - .2 CSA A179, Mortar and Grout for Unit Masonry.
 - .3 CSA-A371, Masonry Construction for Buildings.
- .2 International Masonry Industry All-Weather Council (IMIAC):
 - .1 Recommended Practices and Guide Specification for Hot and Cold Weather Masonry Construction.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data, including product characteristics, performance criteria, limitations and colors.
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- .2 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS).
- .3 Samples:
 - .1 Submit samples:
 - .1 Two of each type of masonry unit specified including special shapes.
 - .2 One of each cured and coloured samples of mortar and grout, illustrating mortar colour and colour range.
 - .3 One of each type of masonry accessory specified.
 - .4 One of each type of masonry reinforcement, tie and connector proposed for use.
 - .2 Submit samples tested to laboratories employing technicians certified/trained in procedures for testing masonry units.
 - .3 Samples used for testing, when accepted, become standard for material used.
- .4 Shop drawings:
 - .1 Provide drawings stamped and signed by professional engineer licensed in Province of Nova Scotia, Canada.
 - .2 Provide confirmation to Departmental Representative that temporary bracing and support has been designed by professional engineer.
- .5 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

- .1 Submit laboratory test reports certifying compliance of masonry units and mortar ingredients with specification requirements
 - .2 Submit certified test reports showing compliance with specified performance characteristics and physical properties.
 - .3 For clay units, in addition to requirements set out in referenced CSA and ASTM Standards include data indicating initial rate of absorption.
 - .4 Qualifications:
 - .1 Manufacturer: with experience in manufacturing components similar to or exceeding requirements of project.
 - .2 Installer: experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
 - .3 Masons: company or person specializing in masonry installations with masonry work similar to this project.
 - .1 Masons employed on this project must demonstrate
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ability to reproduce mock-up standards.

1.5 JOB MOCK-UPS.

- .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
- .2 Construct mock-up panel of exterior masonry wall construction 1200 x 1800 mm showing masonry colours and textures, use of reinforcement, ties, through-wall flashing, weep holes, jointing, coursing, mortar and workmanship.
- .3 Mock-up will be used to judge workmanship, substrate preparation, operation of equipment and material application.
- .4 Construct mock-up where directed.
- .5 Provide written notice of mock-up completion and allow 48 hrs after completion of mock-up for Departmental Representative review. Commence work only upon receipt of approval of mock-up by Departmental Representative.
- .6 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.

1.6 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store, handle and protect materials in accordance with Section 01 61 00 - Common Product Requirements
- .2 Deliver materials to job site in dry condition.
- .3 Keep materials dry until use except where wetting of bricks is specified
- .4 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.7 SITE CONDITIONS

- .1 Cold weather requirements:
 - .1 In accordance with CSA-A371 and as outlined below.
 - .1 Maintain temperature of mortar between 5°C and 50°C until batch is used or becomes stable.
 - .2 Maintain ambient temperature of masonry work and its constituent materials between 5°C and 50°C and protect site from exposure to wind.
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- .2 Hot weather requirements:
 - .1 In accordance with CSA-A371 and as outlined below.
 - .1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.
 - .2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashings or other permanent construction.
- .3 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.
- .4 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Masonry materials are specified in related Sections indicated in 1.1.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 PREPARATION

- .1 Provide temporary bracing and support of masonry work during and after erection until permanent lateral support is in place.
 - .2 Bracing approved by Departmental Representative.
 - .3 Protect adjacent materials from damage and disfiguration.
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3.3 INSTALLATION

- .1 Do masonry work in accordance with CSA-A371, except where specified otherwise.
- .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.

3.4 CONSTRUCTION

- .1 Exposed masonry:
 - .1 Remove chipped, cracked, and otherwise damaged units, in accordance with SA A-165, Clause 82.1, in exposed masonry and replace with undamaged units.
 - .2 Jointing:
 - .1 Allow joints to set just enough to remove excess water, then tool with round jointer to provide smooth, joints true to line, compressed, uniformly concave joints where concave joints are indicated.
 - .2 Allow joints to set just enough to remove excess water. Then rake joints uniformly to 6 mm depth and compress with square tool to provide smooth, compressed, raked joints to uniform depth where center-score and split-face concrete blocks are indicated. Horizontal and vertical joints shall be raked.
 - .3 Strike flush joints concealed in walls and joints in walls to receive plaster, tile, insulation, or other applied material except paint or similar thin finish coating.
 - .3 Cutting:
 - .1 Cut out for electrical switches, outlet boxes, and other recessed or built-in objects.
 - .2 Make cuts straight, clean, and free from uneven edges.
 - .4 Building-In:
 - .1 Build in items required to be built into masonry.
 - .2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
 - .3 Brace door jambs to maintain plumb. Fill spaces between jambs and masonry with mortar.
 - .5 Support of loads:
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- .1 Use 25 MPa concrete to Section 03 30 00 - Cast-in-Place Concrete, where concrete fill is used.
- .2 Use grout to CSA A179, where grout is used in lieu of solid units.
- .3 Install building paper below voids to be filled with grout; keep paper 25 mm back from faces of units.

- .6 Provision for movement:
 - .1 Leave 3 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.

- .7 Loose steel lintels:
 - .1 Install loose steel lintels. Centre over opening width.

- .8 Control joints:
 - .1 Construct continuous control joints where indicated or detailed.

- .9 Expansion joints:
 - .1 Build-in continuous expansion joints where indicated or detailed.

3.5 SITE TOLERANCES

- .1 Tolerances to CSA-A371.

3.6 FIELD QUALITY CONTROL

- .1 Inspection and testing will be carried out by Testing Laboratory designated by Departmental Representative.
- .2 All cost of testing and retesting as a result of deficient work will be paid for by contractor.
- .3 Provide Certificate of Field Quality Inspection and testing to Departmental Representative for inclusion in Commissioning Manual.

3.7 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Upon completion of installation, remove surplus materials,

rubbish, tools and equipment barriers.

3.8 PROTECTION

.1 Temporary Bracing and Supports:

- .1 Provide temporary bracing and supports of masonry work during and after erection until permanent lateral support is in place.
- .2 Provide confirmation to Departmental Representative that temporary bracing and support has been designed by professional engineer.
- .3 Brace masonry walls as necessary to resist wind pressure and lateral forces during construction.

.2 Moisture Protection:

- .1 Keep masonry dry using waterproof, nonstaining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until completed and protected by flashing or other permanent construction.
- .2 Cover completed and partially completed work not enclosed or sheltered with waterproof covering at end of each work day. Anchor securely in position.
- .3 Air Temperature Protection: protect completed masonry as per Part 1 article Site Conditions.

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .3 Section 04 05 00 - Common Work Results for Masonry.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CAN/CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA A179, Mortar and Grout for Unit Masonry.
 - .3 CAN/CSA A371, Masonry Construction for Buildings.
 - .4 CAN/CSA-A3000, Cementitious Materials Compendium; CAN/CSA-A3002, Masonry and Mortar Cement.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet including product characteristics, performance criteria, and limitations.
 - .2 Submit copy of WHMIS MSDS Material Safety Data Sheets. Indicate VOC's mortar, grout, parging, colour additives and admixtures, expressed as grams per litre (g/L).
- .2 Samples:
 - .1 Submit two samples of mortar showing actual product colour when set.
- .3 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

- .1 Submit test reports showing compliance with specified performance characteristics and physical properties.
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1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handles masonry mortar and grout materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:
- .2 Deliver prepackaged, dry-blended mortar mix to project site in labelled plastic-lined bags each bearing name and address of manufacturer, production codes or batch numbers, and color or formula numbers.
- .3 Maintain mortar, grout and packaged materials clean, dry, and protected against dampness, freezing, traffic and contamination by foreign materials.

1.6 SITE CONDITIONS

- .1 Ambient Conditions: maintain materials and surrounding air temperature to:
 - .1 Minimum 5 degrees C prior to, during, and 48 hours after completion of masonry work.
 - .2 Maximum 32 degrees C prior to, during, and 48 hours after completion of masonry work.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Use same brands of materials and source of aggregate for entire project.
 - .2 Cement:
 - .1 Portland Cement: to CAN/CSA-A3000.
 - .2 Masonry Cement: to CAN/CSA-A3002 and CAN/CSA A179.
 - .3 Mortar Cement: to CAN/CSA-A3002 and CAN/CSA A179.
 - .4 Packaged Dry Combined Materials for mortar: to CAN/CSA A179, using gray color cement.
 - .3 Aggregate: supplied by one supplier.
 - .1 Fine Aggregate: to CAN/CSA A179, natural sand.
 - .2 Course Aggregate: to CAN/CSA A179.
 - .4 Water: clean and potable
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- .5 Water-repellent admixture: specially blended emulsion additive to produce water penetration-resistance and efflorescence-control masonry mortar meeting ASTM E514 for resistance to moisture migration and wind-driven rain.

2.2 COLOR ADDITIVES

- .1 Use coloring admixture not exceeding 10% of cement content by mass, or integrally colored masonry cement, to produce colored mortar to match approved sample. Admixtures to be approved prior to use. Use in accordance with the specific manufacturer's recommendations. Mortar color sample as selected from manufacturer's standard color range.
- .2 White mortar: use white masonry cement to produce mortar type specified.

2.3 MORTAR MIXES

- .1 Mortar for exterior masonry above grade:
 - .1 Loadbearing: Type S based on proportion specifications.
 - .2 Non-Loadbearing: Type S based on proportion specifications.
 - .2 Mortar for interior masonry:
 - .1 Loadbearing: Type S based on proportion specifications.
 - .2 Non-Loadbearing: Type S based on proportion specifications.
 - .3 Mortar for Parapet walls, chimneys, unprotected walls: Type S based on proportion specifications.
 - .4 Pointing Mortar: CAN/CSA A179, Type S using property specification with maximum 2 percent ammonium stearate or calcium stearate per cement weight.
 - .5 Stain Resistant Pointing Mortar: one part Portland cement, 1/8 part hydrated lime, and two parts graded (80 mesh) aggregate, proportioned by volume. Add aluminum tristearate, calcium stearate, or ammonium stearate to 2 percent of Portland cement by weight.
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.6 Following applies regardless of mortar types and uses specified above:

.1 Mortar for grouted reinforced masonry: Type S based on proportion specifications.

2.4 MORTAR MIXING

.1 Add mortar color in accordance with manufacturer's instructions. Provide uniformity of mix and coloration.

.2 Add water repellent and efflorescence-control mortar admixture in accordance with manufacturer's written instructions.

.3 Use a batch type mixer in accordance with CAN/CSA A179.

.4 Pointing mortar: prehydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour no more than 2 hours then remix with sufficient water to produce mortar of proper consistency for pointing.

.5 Re-temper mortar only within two hours of mixing, when water is lost by evaporation.

.6 Use mortar within 2 hours after mixing at temperatures of 32 °C, or 2-1/2 hours at temperatures under 5°C.

2.5 CONCRETE MIX FOR GROUTING BLOCK WALLS/BOND BEAMS/LINTELS

.1 Minimum compressive strength of 20 MPa at 28 days.

.2 Nominal size of course aggregated: 10 mm to 12 mm.

.3 Cement: Type GU

2.6 GROUT MIXING

.1 Mix grout ingredients in quantities needed for immediate use in accordance with CAN/CSA A179.

.2 Add admixtures in accordance with manufacturer's instructions; mix uniformly.

.3 Do not use calcium chloride or chloride based admixtures.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product catalogue 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.

3.3 MIXING

- .1 All pointing mortar can be mixed using a regular paddle mixer. Only electric motor mixers are permissible. Mixers run on hydrocarbons are not permitted, due to fumes. Mixing by hand must be pre-approved by the Departmental Representative
- .2 Clean all mixing boards and mechanical mixing machine between batches.
- .3 Mortar must be weaker than the units it is binding.
- .4 Contractor to appoint one individual to mix mortar, for duration of project. In the event that this individual must be changed, mortar mixing must cease until the new individual is trained, and mortar mix is tested.

3.4 MORTAR PLACEMENT

- .1 Install mortar to manufacturer's instructions.
 - .2 Install mortar to requirements of CAN/CSA A179.
 - .3 Remove excess mortar from grout spaces.
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3.5 GROUT PLACEMENT

- .1 Install grout in accordance with manufacturer's instructions.
- .2 Install grout in accordance with CAN/CSA A179.
- .3 Work grout into masonry cores and cavities to eliminate voids.
- .4 Do not install grout in lifts greater than 400 mm, without consolidating grout by rodding.
- .5 Do not displace reinforcement while placing grout.

3.6 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.
- .2 Remove droppings and splashings using clean sponge and water.
- .3 Clean masonry with low pressure clean water and soft natural bristle brush.

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .3 Section 04 05 00 - Common Work Results for Masonry.
- .4 Section 04 05 12 - Masonry Mortar and Grout.
- .5 Section 04 05 23 - Masonry Accessories.
- .6 Section 04 22 00 - Concrete Unit Masonry.

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International).
 - .1 CSA-A23.1/A23.2, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CSA-A370, Connectors for Masonry.
 - .3 CSA-A371, Masonry Construction for Buildings.
 - .4 CAN/CSA G30.18, Billet-Steel Bars for Concrete Reinforcement.
 - .5 CSA-S304.1, Masonry Design for Buildings.
 - .6 CSA A179, Mortar and Grout For Unit Masonry.
 - .7 CSA W186, Welding of Reinforcing Bars in Reinforced Concrete Construction.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets. Indicate VOCs for epoxy coatings and galvanized protective coatings and touch-up products illustrating products to be incorporated into project for specified products.
 - .2 Shop Drawings:
 - .1 Shop drawings consist of bar bending details, lists and placing drawings. Provide shop drawings detailing bar bending details, anchorage details, lists and placing drawings.
 - .2 On placing drawings, indicate sizes, spacing, location and
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quantities of reinforcement and connectors.

.3 Indicate on shop drawings, bar bending details, lists, quantities of reinforcement, sizes, spacings, locations of reinforcement and mechanical splices if approved by Departmental Representative, with identifying code marks to permit correct placement without reference to structural drawings. Indicate sizes, spacings and locations of chairs, spacers and hangers. Prepare reinforcement drawings in accordance with Reinforcing Steel Manual of Standard Practice - by Reinforcing Steel Institute of Canada. ANSI/ACI 315 and ACI 315R, Manual of Engineering and Placing Drawings for Reinforced Concrete Structure.

.3 Manufacturer's Instructions:

.1 Submit manufacturer's installation instructions.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Bar reinforcement: to CSA-A371, and CAN/CSA G30.18, Grade 400.

.2 Wire reinforcement: to CSA-A371, and CSA G30.14, wire ladder type, galvanized.

.3 Ties:

.1 For metal stud or wood stud and masonry construction: to CSA-A370 and CSA-S304, 1.6 mm thick side mounting, stainless steel flat plate, c/w 5.8 mm \emptyset holes for veneer tire wire attachment, 4.76 mm \emptyset veneer ties with polyethylene insulation supports. Total length of flat plate to suit stud width, sheathing, air space and insulation.

.2 For concrete block and masonry construction: to CSA-A370 and CSA-S304, 1.6 mm thick stainless steel connector plate, c/w 5.8 mm \emptyset holes for veneer tire wire attachment, 4.76 mm \emptyset veneer ties with polyethylene insulation supports. Total length of connector plate to suit block width, air space and insulation. Tie shall be designed to be embedded in the masonry back-up.

.4 Corrosion protection for wire reinforcement: to CSA-S304, galvanized to CSA-S304 and CSA-A370.

2.2 FABRICATION

- .1 Fabricate reinforcing in accordance with CSA-A23.1/A23.2.
- .2 Fabricate connectors in accordance with CSA-A370.
- .3 Obtain Departmental Representative's approval for locations of reinforcement splices other than shown on placing drawings.
- .4 Upon approval of Departmental Representative, weld reinforcement in accordance with CSA W186.
- .5 Ship reinforcement and connectors, clearly identified in accordance with drawings.

2.3 SOURCE QUALITY CONTROL

- .1 Upon request, provide Departmental Representative with certified copy of mill test report of reinforcement steel and connectors, showing physical and chemical analysis, minimum 5 weeks prior to commencing reinforcement work.
- .2 Upon request inform Departmental Representative of proposed source of material to be supplied.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 GENERAL

- .1 Supply and install masonry connectors and reinforcement in accordance with CSA-A370, CSA-A371, CSA-A23.1/A23.2, and CSA-S304.1, unless indicated otherwise.
 - .2 Prior to placing concrete, grout, obtain Departmental Representative's approval of placement of reinforcement and connectors.
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- .3 Supply and install additional reinforcement to masonry as indicated.
 - .1 Exterior cavity wall consisting of a wythe of split-face block with concrete block back-up.
 - .1 Space connectors and install in accordance with manufacturer's written instructions but not greater than 400 mm vertically or 800 mm horizontally.

3.3 BONDING AND TYING

- .1 Bond walls of two or more wythes using metal connectors in accordance with CSA- S304, CSA-A371, and as indicated.
- .2 Tie masonry veneer to backing in accordance with NBC, CSA-S304.1, CSA-A371, and as indicated.

3.4 REINFORCED WALLS, LINTELS AND BOND BEAMS

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

3.5 GROUTING

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

3.6 ANCHORS

- .1 Supply and install metal anchors as indicated.

3.7 LATERAL SUPPORT AND ANCHORAGE

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

3.8 MOVEMENT JOINTS

- .1 Reinforcement will not be continuous across movement joints unless otherwise indicated.

3.9 FIELD BENDING

- .1 Do not field bend reinforcement and connectors except where indicated or authorized by Departmental Representative.
- .2 When field bending is authorized, bend without heat, applying a slow and steady pressure
- .3 Replace bars and connectors which develop cracks or splits.

3.10 FIELD TOUCH-UP

- .1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcement steel and connectors with compatible finish to provide continuous coating.

3.11 CLEANING

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

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .3 Section 04 05 00 - Common Work Results for Masonry.
- .4 Section 04 05 19 - Masonry Anchorage and Reinforcing.

1.2 REFERENCES

- .1 American Society for Testing and Materials, (ASTM).
 - .1 ASTM D2240, Standard Test Method for Rubber Property - Durometer Hardness.
- .2 Canadian Standards Association (CSA)
 - .1 CSA-A371, Masonry Construction for Buildings.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data including product characteristics, performance criteria, and limitations.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data. Indicate VOC's for joint fillers and lap adhesives.
- .2 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle masonry accessories in accordance with, Section 01 61 00 - Common Product Requirements supplemented as follows:
 - .1 Keep fillers and adhesives dry, protected against dampness, and freezing.
 - .2 Store packaged materials off ground and in accordance with manufacturer's written instructions.
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PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Control joint filler: purpose-made elastomer 70 durometer hardness to ASTM D2240 of size and shape indicated.
- .2 Lap adhesive: recommended by masonry flashing manufacturer.
- .3 Weep hole vents: purpose-made PVC.
- .4 Cavity Wall Flashing:
 - .1 Self adhering SBS rubberized asphalt compound integrally laminated to cross- laminated polyethylene film, minimum thickness 1.0 mm.
 - .2 Primer: as per manufacturer's recommendation.
- .5 Trash mortar diverters: shaped and sized to suit cavity spaces.

PART 3 - EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 INSTALLATION

- .1 Install continuous control joint fillers in control joints at locations indicated on drawings.
 - .2 Lap adhesive: apply adhesive to flashing lap joints.
 - .3 Install weep hole vents in vertical joints immediately over flashings, in exterior wythes of cavity wall and masonry veneer wall construction, at maximum horizontal spacing of 600 mm on centre.
 - .4 Trash mortar diverters: install purpose made diverters in cavities where indicated and as directed, size and shape to suit purpose and function.
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3.3 CONSTRUCTION

- .1 Build in flashings in masonry in accordance with CSA-A371 as follows:
 - .1 Install flashings under exterior masonry bearing on foundation walls, slabs, shelf angles, and steel angles over openings. Install flashings under weep hole courses and as indicated.
 - .2 In cavity walls and veneered walls, carry flashings from front edge of masonry, under outer wythe, then up backing not less than 300 mm, and as follows:
 - .1 For masonry backing embed flashing 25 mm in joint.
 - .3 Lap joints 150 mm and seal with adhesive.
- .2 Form flashing (end dams) at lintels, sills and wall ends to prevent water from travelling horizontally past flashing ends.

3.4 CLEANING

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

PART 1 - GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 04 05 00 - Common Work Results for Masonry.
- .3 Section 04 05 12 - Masonry Mortar and Grout.
- .4 Section 04 05 19 - Masonry Anchorage and Reinforcing.
- .5 Section 04 05 23 - Masonry Accessories.

1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC).
- .2 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN/ULC-S101, Standard Methods of Fire Endurance Tests of Building Construction and Materials.

1.3 SUBMITTALS

- .3 Product Data
 - .1 Submit manufacturer's printed product Literature, specifications and data sheet illustrating products to be incorporated into project for specified products.
- .4 Samples
 - .1 Two of each type of concrete masonry unit specified.
- .5 Manufacturer's Instructions
 - .1 Submit manufacturer's installation instructions.

1.4 QUALITY ASSURANCE

- .1 Mock-up
 - .1 Construct mock-up in accordance with Section 01 45 00 - Quality Control.
 - .2 Construct mock-up 10 m 2 minimum of brick unit masonry in area designated by Departmental Representative before proceeding with brick unit masonry work.
 - .3 Allow 24 hours for inspection of mock-up by Departmental
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Representative before proceeding with Concrete Unit Masonry Work.

- .2 Test reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .3 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .4 Pre-installation meeting: conduct pre-installation meeting to verify project requirements manufacturer's instructions and manufacturer's warranty requirements.

1.5 QUALIFICATIONS

- .1 Manufacturer: company specializing in manufacturing products of this section.
- .2 Installer: company specializing in performing work of this section approved by manufacturer.
- .3 Design structural installations under direct supervision of Professional Engineer experienced in structural design of concrete masonry installation and registered in the Province of Nova Scotia.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Split-face concrete block units (CMU 1): to CAN/CSA-A165 Series-04 (CSA-A165.1).
 - Decorative face treatment: split centre score:
 - .1 Classification: S/15/A/M.
 - .2 Concrete block units shall have a water repellent and efflorescence-control admixture meeting ASTM E514 inherent within the concrete block at the time of manufacture.
 - .3 Size: modular, as indicated on drawings.
 - .4 Special shapes: provide square units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special spaces as indicated.
 - .5 Colour: natural grey to the approval of Departmental Representative upon review of submitted colour samples.
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- .2 Split-face block units (CMU 2): to CAN/CSA-A165 Series -04 (CSA A165.1).
Decorative face treatment: split ashlar:
 - .1 Classification: S/15/A/M.
 - .2 Concrete block units shall have a water repellent and efflorescence-control admixture meeting ASTM E514 inherent within the concrete block at the time of manufacture.
 - .3 Size: modular, as indicated on drawings.
 - .4 Special shapes: provide square units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special shapes as indicated.
 - .5 Colour:
 - .1 2 - gray to the approval of Departmental Representative upon review of submitted colour samples.
 - .2 2A - buff or tan to the approval of Departmental Representative upon review of submitted colour samples.

 - .3 Split-face block units (CMU 3): to CAN/CSA-A165 Series -04 (CSA A165.1).
Decorative face treatment: split 6 rib fluted:
 - .1 Classification: S/20/A/M.
 - .2 Concrete block units shall have a water repellent and efflorescence-control admixture meeting ASTM E514 inherent within the concrete block at the time of manufacture.
 - .3 Size: 140 mm, as indicated on drawings.
 - .4 Special shapes: provide square units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special shapes as indicated.
 - .5 Colour: charcoal to the approval of Departmental Representative upon review of submitted colour samples.

 - .4 Standard concrete block units (CMU 4): to CAN/CSA-A165 Series -04 (CSA A165.1).
Decorative face treatment: smooth face:
 - .1 Classification: S/15/A/M.
 - .2 Concrete block units shall have a water repellent and efflorescence-control admixture meeting ASTM E514 inherent within the concrete block at the time of manufacture.
 - .3 Size: modular, as indicated on drawings.
 - .4 Special shapes: provide square units for exposed corners. Provide additional special shapes as indicated.
 - .5 Colour: to match CMU 1, CMU 2 and CMU 3.
 - .6 Use CMU 4 to provide a smooth block surface where mechanical and electrical service will be mounted on the exterior face of CMU1, CMU 2 and CMU 3.

 - .5 Standard concrete block units (CMU 5): to CAN/CSA-A165 Series -04 (CSA A165.1):
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- .1 Classification: H/20/A/M.
 - .2 Jamb openings beneath lintels: H/20/A/M.
 - .3 Non-loading bearing: H/20/B/M.
 - .4 Size: modular, as indicated on drawings.
 - .5 Special shapes: provide bull-nosed units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special shapes as indicated. Provide solid units where indicated.
 - .6 Colour: manufacturer's standard gray colour.
- .6 Acoustical concrete block units: to CAN3-A165 Series (CAN3-A165.1) purpose made with skewed and sloped surfaces edged by two (2) 90° linear profiles to provide the acoustical characteristics specified; complete with noise attenuating fillers meeting UK94HF-1.
- .1 Classification: H/15/C/M
 - .2 Size: modular
 - .3 Acoustical characteristics: decorative design as specified and/or detailed.
 - .4 Sound diffusion: irregular surfaces to "spray" the reflected sound energy.
 - .5 Flutter echo: not less than 75% skewed and sloped surfaces at not less than 0.3 to 1 ratio for non-parallel surfaces 23.
 - .6 Standing wave/resonate frequencies: absorption coefficient 1.2 at 1.25 Hz.
 - .7 Absorption/Helmholtz resonator: not less than of 90% at 100, 125 and 160 Hz frequency bandwidths.

2.2 ACCESSORIES

- .1 Reinforcement: to Section 04 05 19 - Masonry Anchorage and Reinforcing.
- .2 Connectors: to Section 04 05 19 - Masonry Anchorage and Reinforcing.
- .3 Flashing: to Section 04 05 23 - Masonry Accessories.
- .4 Mortar and mortar mixes: to Section 04 05 12 - Masonry Mortar and Grout.
- .5 Grout and grout mixes: to Section 04 05 12 - Masonry Mortar and Grout.

2.3 CLEANING COMPOUNDS

- .1 Compatible with substrate and acceptable to masonry manufacturer
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for use on products.

- .2 Cleaning compounds compatible with concrete unit masonry and in accordance with manufacturer's written recommendations and instructions.

2.4 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 2.0 mm.
 - .2 No parallel edge length, width or height dimension for individual unit to differ by more than 2.0 mm.
 - .3 Out of square tolerance not to exceed 2.0 mm.

PART 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: concave where exposed or where paint or other finish coating is specified
 - .4 Flush for units to receive ceramic tile or other decorative finishes.
 - .2 Split face concrete block units:
 - .1 Bond: running
 - .2 Coursing height: 200 mm for one block and one joint.
 - .3 Jointing: provide raked joints to uniform 6 mm depth.
 - .3 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.
 - .4 Acoustical Concrete Unit Masonry:
 - .1 Bond: running.
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- .2 Coursing height: 200 mm for one block and one joint.
- .3 Jointing: concave where exposed or where paint or finish coating is specified.

3.2 CONSTRUCTION

- .1 Cull out masonry units, in accordance with CAN/CSA A165 and approved range of color samples, with chips, cracks, broken corners, excessive color 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 Fit masonry closely against electrical and plumbing outlets so collars, plates and covers overlap and conceal cuts.
- .5 Install movement joints and keep free of mortar where indicated.
- .6 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.
- .7 Solid Units: apply mortar over entire vertical and horizontal surfaces. Avoid bridging of airspace between brick veneer and backup wall with mortar.
- .8 Ensure compacted head joints. Use full or face-shell joint as indicated.
- .9 Tamp units firmly into place.
- .10 Do not adjust masonry units after mortar has set. Where resetting of masonry is required, remove, clean and reset units in new mortar.
- .11 Tool exposed joints concave; strike concealed joints flush.
- .12 After mortar has achieved initial set up, tool joints.
- .13 Do not interrupt bond below or above openings.

3.3 CLEANING

- .1 Standard block: Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with
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small piece of block and finally by brushing.

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

3.4 PROTECTION

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

3.5 SCHEDULE

- .1 See drawings for location of use of concrete masonry unit types.