

Part 1 General

1.1 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CAN/CSA-A165 Series-14, CSA Standards on Concrete Masonry Units (Consists of A165.1, A165.2 and A165.3).
 - .2 CAN/CSA-A179-14, Mortar and Grout for Unit Masonry.
 - .3 CAN/CSA-A371-14, Masonry Construction for Buildings.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-installation meetings: comply with Section 01 31 19 - Project Meetings. Conduct pre-installation meeting one week prior to commencing work of this Section and on-site installations to:
 - .1 Verify project requirements, including mock-up requirements.
 - .2 Verify substrate conditions.
 - .3 Co-ordinate products, installation methods and techniques.
 - .4 Sequence work of related sections.
 - .5 Co-ordinate with other building subtrades.
 - .6 Review manufacturer's installation instructions.
 - .7 Review masonry cutting operations, methods and tools and determine worker safety and protection from dust during cutting operations.
 - .8 Review warranty requirements.
- .2 Sequencing: sequence with other work in accordance with Section 01 32 16.19 - Construction Progress Schedules - Bar (GANNT) Chart. Comply with manufacturer's written recommendations for sequencing construction operations.
- .3 Scheduling: schedule with other work in accordance with Section 01 32 16.19 - Construction Progress Schedules - Bar (GANNT) Chart.

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 masonry and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit copies of WHMIS MSDS in accordance with Section 01 35 29.06- Health and Safety Requirements.
- .3 Shop Drawings:
 - .1 Provide drawings stamped and signed by professional engineer registered or licensed in the Province of Saskatchewan, Canada.

- .2 Provide shop drawings detailing temporary bracing required, designed to resist wind pressure and lateral forces during installation.
- .4 Samples:
 - .1 Provide samples as follows:
 - .1 2 of each type of brick masonry unit specified, including special shapes, supplemented with specific requirements in Section.
 - .2 2 cured , coloured samples of mortar , illustrating mortar colour and colour range, supplemented with specific requirements in Section 04 05 13- Masonry Mortar and Grout.
 - .3 Samples: used for testing and when accepted become standard for material used.
 - .5 Certificates: submit manufacturer's product certificates certifying materials comply with specified requirements.
 - .6 Test and Evaluation Reports:
 - .1 Submit certified test reports in accordance with Section 01 29 83- Payment Procedures for Testing Laboratory Services.
 - .2 Test reports to certify compliance of masonry units and mortar ingredients with specified performance characteristics and physical properties.
 - .3 Submit data for masonry units, in addition to requirements set out in referenced CSA and ASTM Standards, indicating initial rates of absorption.
 - .7 Installer Instructions: provide manufacturer's installation instructions, including storage, handling, safety and cleaning.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit manufacturer's instructions for care, cleaning and maintenance of prefaced masonry units for incorporation into manual specified in Section 01 78 00- Closeout Submittals.

1.5 EXTRA MATERIALS

- .1 Submit manufacturer's instructions in accordance with Section 01 78 00 - Closeout Submittals covering maintenance requirements and parts catalogue, with cuts and identifying numbers.

1.6 QUALITY ASSURANCE

- .1 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, pointing, coursing, mortar and quality of work.
 - .3 Mock-up used:
 - .1 To judge quality of work, substrate preparation, operation of equipment and material application.

- .2 For testing to determine compliance with performance requirements. Perform following tests.
 - .1 For clay units, in addition to requirements set out in referenced CSA and ASTM Standards include data indicating initial rate of absorption.
- .4 Construct mock-up where directed by Departmental Representative.
- .5 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with work.
- .6 When accepted by Departmental Representative, mock-up to demonstrate minimum standard for this work. Mock-up may remain as part of finished work.
- .7 Start work only upon receipt of written approval of mock-up by Departmental Representative.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials off ground and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect material packages from nicks, scratches, and blemishes.
 - .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.
 - .5 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse by manufacturer and return of padding, pallets, packaging materials and crates in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.8 SITE CONDITIONS

- .1 Ambient Conditions: assemble and erect components when temperatures are above 4 degrees C.
- .2 Weather Requirements: to CAN/CSA-A371.
- .3 Cold weather requirements:
 - .1 To CAN/CSA-A371 with following requirements.
 - .1 Maintain temperature of mortar between 5 degrees C and 50 degrees C until batch is used or becomes stable.
 - .2 Maintain ambient temperature of masonry work and it's constituent materials between 5 degrees C and 50 degrees C and protect site from windchill.
 - .3 Maintain temperature of masonry above 0 degrees C for minimum of 28 days, after mortar is installed.

- .4 Preheat unheated wall sections in enclosure for minimum 72 hours above 10 degrees C, before applying mortar.
- .2 Hot weather requirements:
 - .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 Spray mortar surface at intervals and keep moist for maximum of 3 days after installation.

Part 2 Products

2.1 MATERIALS

- .1 Masonry materials are specified elsewhere in related Sections:
 - .1 Section 04 05 13 - Masonry Mortaring and Grouting.
 - .2 Section 04 05 19 - Masonry Anchorage and Reinforcing.
 - .3 Section 04 05 23 - Masonry Accessories.
 - .4 Section 04 21 13 - Brick Masonry.

Part 3 Execution

3.1 INSTALLERS

- .1 Experienced and qualified masons to carry out erection, assembly and installation of masonry work.

3.2 EXAMINATION

- .1 Examine conditions, substrates and work to receive work of this Section.
 - .1 Co-ordinate with Section 01 71 00- Examination and Preparation.
- .2 Examine openings to receive masonry units. Verify opening size, location, and that opening is square and plumb, and ready to receive work of this Section.
 - .1 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .2 Proceed with installation after unacceptable conditions have been remedied and after receipt of written approval from Departmental Representative.
- .3 Verification of Conditions:
 - .1 Verify that:
 - .1 Substrate conditions which have been previously installed under other sections or contracts, are acceptable for product installation in accordance with manufacturer's instructions prior to installation of brick.

- .2 Site conditions are acceptable and are ready to receive work.
- .3 Built-in items are in proper location, and ready for roughing into masonry work.
- .2 Commencing installation means acceptance of existing substrates.

3.3 PREPARATION

- .1 Surface Preparation: prepare surface in accordance with manufacturer's written recommendations and co-ordinate with Section 01 71 00- Examination and Preparation.
- .2 Establish and protect lines, levels, and coursing.
- .3 Protect adjacent materials from damage and disfiguration.

3.4 INSTALLATION

- .1 Do masonry work in accordance with CAN/CSA-A371 except where specified otherwise.
- .2 Build masonry plumb, level and true to line, with vertical joints in alignment, respecting construction tolerances permitted by CAN/CSA-A371.
- .3 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

3.5 CONSTRUCTION

- .1 Exposed masonry:
 - .1 Remove chipped, cracked, and otherwise damaged units, in accordance with CAN/CSA-A165, 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.
- .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 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 Wetting of bricks:
 - .1 Except in cold weather, wet bricks having initial rate of absorption exceeding 1 g/minute/1000 mm²: wet to uniform degree of saturation, 3 to 24 hours before laying, and do not lay until surface dry.

- .2 Wet tops of walls built of bricks qualifying for wetting, when recommencing work on such walls.
- .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. Center over opening width.
- .8 Control joints:
 - .1 Construct continuous control joints as indicated.
- .9 Movement joints:
 - .1 Build-in continuous movement joints as indicated.
- .10 Interface with other work:
 - .1 Cut openings in existing work as indicated.
 - .2 Openings in walls: reviewed by Departmental Representative.
 - .3 Make good existing work. Use materials to match existing.

3.6 SITE TOLERANCES

- .1 Tolerances in notes to CAN/CSA-A371 apply.

3.7 SITE QUALITY CONTROL

- .1 Site Tests, Inspection:
 - .1 Perform site inspection and testing in accordance with Section 01 45 00- Quality Control.
 - .2 Notify inspection agency minimum of 24 hours in advance of requirement for tests.

3.8 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Waste Management: separate waste materials for 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.

3.9 PROTECTION

- .1 Temporary Bracing:
 - .1 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

- .2 Bracing approved by Departmental Representative.
 - .3 Brace masonry walls as necessary to resist wind pressure and lateral forces during construction.
- .2 Moisture Protection:
- .1 Keep masonry dry using waterproof, non-staining 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 recommended in SITE CONDITIONS article.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CAN/CSA-A179-14, Mortar and Grout for Unit Masonry.
 - .2 CAN/CSA-A371-14, Masonry Construction for Buildings.
 - .3 CAN/CSA-A3000-13, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for masonry mortar and grout and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit copies of WHMIS MSDS in accordance with Section 01 35 29.06- Health and Safety Requirements. Indicate VOC's of mortar. Expressed as grams per litre (g/L).
- .3 Samples:
 - .1 Samples: submit unit samples in accordance with Section 04 05 00- Common Work Results for Masonry, supplemented as follows:
 - .1 Submit two 20 mm x 100 mm size samples of each colour of mortar.
- .4 Manufacturers' Instructions: submit manufacturer's installation instructions.

1.3 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports including sand gradation tests in accordance with CAN/CSA-A179 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.
- .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.

1.4 DELIVERY, STORAGE AND HANDLING

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

- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect masonry mortar and grout packages from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, packaging materials and padding in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.5 SITE CONDITIONS

- .1 Ambient Conditions: maintain materials and surrounding air temperature to:
 - .1 Minimum 10 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.
- .2 Weather Requirements: CAN/CSA-A371.

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, gray, Type GU - General use hydraulic cement (Type 10)]
- .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.

2.2 MORTAR MIXES

- .1 Mortar for exterior masonry above grade:
 - .1 Non-Load Bearing: Type N based on proportion specifications.

2.3 MORTAR MIXING

- .1 Use pre-blended, pre-coloured mortar prepackaged under controlled factory conditions. Ingredients batching limitations to within 1% accuracy.
- .2 Mix mortar ingredients in accordance with CAN/CSA-A179 in quantities needed for immediate use.
- .3 Maintain sand uniformly damp immediately before mixing process.

- .4 Using anti-freeze compounds including calcium chloride or chloride based compounds is prohibited.
- .5 Adding air entraining admixture to mortar mix is prohibited.
- .6 Use a batch type mixer in accordance with CAN/CSA-A179.
- .7 Re-temper mortar only within two hours of mixing, when water is lost by evaporation.
- .8 Use mortar within 2 hours after mixing at temperatures of 32 degrees C, or 2-1/2 hours at temperatures under 10 degrees C.

2.4 MIX TESTS

- .1 Testing Mortar Mix:
 - .1 Test mortar to requirements of Section 01 45 00- Quality Control, and in accordance with CAN/CSA-A179, for mortar based on property specification. Test during construction for:
 - .1 Compressive strength.
 - .2 Consistency.
 - .3 Mortar aggregate ratio.
 - .4 Sand/cement ratio.
 - .5 Water content and water/cement ratio.
 - .6 Air content.
 - .7 Splitting tensile strength.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for 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 CONSTRUCTION

- .1 Do masonry mortar and grout work in accordance with CAN/CSA-A179 except where specified otherwise.

3.3 MIXING

- .1 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 pre-approved by Departmental Representative.

- .2 Clean mixing boards and mechanical mixing machine between batches.
- .3 Mortar: weaker than units it is binding.
- .4 Contractor to appoint one individual to mix mortar, for duration of project. In event that this individual is changed, mortar mixing must cease until new individual is trained, and mortar mix is tested.

3.4 MORTAR PLACEMENT

- .1 Install mortar to requirements of CAN/CSA-A179.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Remove droppings and splashes using clean sponge and water.
- .3 Clean masonry with low pressure clean water and soft natural bristle brush.
- .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.
- .5 Waste Management: separate waste materials for 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.

3.6 PROTECTION

- .1 Cover completed and partially completed work not enclosed or sheltered with waterproof covering at end of each work day. Anchor securely in position.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

- .1 Canadian Standards Association (CSA)
 - .1 CSA A23.1/A23.2-14 (R2015), Concrete Materials and Methods of Concrete Construction/Test Methods and Standard Practices for Concrete.
 - .2 CAN/CSA-A370-14, Connectors for Masonry.
 - .3 CAN/CSA-A371-14, Masonry Construction for Buildings.
 - .4 CSA S304-14(R2015), Design of Masonry Structures.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

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

1.3 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.

1.4 SITE MEASUREMENTS

- .1 Make site measurements necessary for proper fit of members.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect anchorage and reinforcing materials from nicks, scratches, and blemishes.

- .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, packaging materials and padding in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

- .1 Connectors: to CAN/CSA-A370 and CSA S304.1.
- .2 Ties: stainless steel slotted stud ties, complete with polyethylene insulation supports, size to suit application in accordance with manufacturer's recommendations.

2.2 FABRICATION

- .1 Fabricate connectors in accordance with CAN/CSA-A370.
- .2 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 connectors, showing physical and chemical analysis, minimum 5 weeks prior to commencing reinforcement work.
- .2 Upon request inform Departmental Representative of proposed source of supplied material.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for anchorage and reinforcing materials 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 remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 PREPARATION

- .1 Direct and coordinate placement of metal anchors for masonry supplied to other Sections.

3.3 INSTALLATION

- .1 Supply and install masonry connectors in accordance with CAN/CSA-A370, CAN/CSA-A371, CSA A23.1/A23.2 and CSA S304.1 unless indicated otherwise.

- .2 Prior to placing mortar, obtain Departmental Representative's approval of placement of connectors.

3.4 FIELD BENDING

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

3.5 FIELD QUALITY CONTROL

- .1 Site inspections in accordance with Section 04 05 00- Common Work Results for Masonry.
- .2 Obtain Departmental Representative approval of placement of reinforcement and connectors, prior to placing mortar.

3.6 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .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 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.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

- .1 CSA Group
 - .1 CAN/CSA-A371-14, Masonry Construction for Buildings.
- .2 South Coast Air Quality Management District (SCAQMD)
 - .1 SCAQMD Rule 1168-05, Adhesive and Sealant Applications.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for masonry accessories and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Indicate on drawings:
 - .1 Flashing, installation details, sizes, spacing, location and quantities of fasteners.
- .4 Samples:
 - .1 Submit 2 samples of masonry accessories as follows:
 - .1 Materials: samples, illustrating colour and colour range. Include:
 - .1 Movement joint filler.
 - .2 Lap adhesive.
 - .3 Mechanical fasteners.
 - .2 Moisture control material samples, illustrating colour and colour range, size, and shape. Include:
 - .1 Weep hole vents.
 - .2 Mortar diverters.
 - .3 Flashing material samples, illustrating colour and colour range, size, shape, and profile. Include as specified:
 - .1 Sheet metal flashings.
 - .2 Composite flashings.
 - .3 Plastic and rubber flashings.

1.3 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.
- .3 Manufacturer's Instructions: submit manufacturer's instructions as follows:
 - .1 Submit installation instructions for diverters, flashings, fillers, adhesives, weeps and screens.

1.4 SITE MEASUREMENTS

- .1 Make site measurements necessary to ensure proper fit of members.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00- Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect masonry accessories from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, padding, packaging materials and crates in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 MATERIALS

- .1 Movement joint filler: purpose-made elastomer.
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
 - .2 Material type: expanded polyethylene.
- .2 Lap adhesive: recommended by masonry flashing manufacturer. Use low VOC products in compliance with SCAQMD Rule 1168.
- .3 Weep hole vents: purpose-made PVC.
- .4 Mechanical fasteners: recommended by flashing manufacturer to suit project requirements.

2.2 MOISTURE CONTROL

- .1 Weep Hole Vents: PVC.
 - .1 Colour: brown.
- .2 Mortar diverters: shaped and sized to suit cavity spaces.

2.3 FLASHINGS

- .1 Sheet metal: as specified in Section 07 62 00.
- .2 Plastic and Rubber Flashings:
 - .1 Polyethylene Flashings:
 - .1 Reinforced: two 0.75 mm thick polyethylene films bonded each side of asphalt treated creped kraft paper, reinforced with 12.7 x 12.7 mm fiberglass scrim.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrate previously installed under other Sections or Contracts are acceptable for masonry accessories 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 remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 INSTALLATION: MATERIALS

- .1 Install continuous movement joint fillers in movement joints at locations indicated on drawings.
- .2 Lap adhesive: apply adhesive to flashing lap joints.
- .3 Mechanical fasteners: install fasteners to suit application and in accordance with manufacturer's written installation instructions.

3.3 INSTALLATION: MOISTURE CONTROL

- .1 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.
- .2 Mortar diverters: install purpose made diverters in cavities where indicated and as directed, size and shape to suit purpose and function.

3.4 INSTALLATION: FLASHINGS

- .1 Build in flashings in masonry in accordance with CAN/CSA-A371.
 - .1 Install flashings under exterior masonry bearing on foundation walls, slabs, shelf angles, and steel angles over openings, and at base of cavity wall and where cavity interrupted by horizontal members or supports and as shown on drawings. Install flashings under weep hole courses and as indicated.
 - .2 In cavity walls and veneered walls, carry flashings from front edge of exterior masonry, under outer wythe, then up backing minimum 150 mm, and as follows:

- .1 For gypsum board and glass fibre faced sheathing backing, bond to wall using manufacturer's recommended adhesive.
- .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 Install vertical flashing where outer veneer returns at window or door jambs, to prevent contact of veneer with inner wall.

3.5 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .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 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.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

- .1 Brick Industry Association (BIA)
 - .1 Technical Note No. 20-2006, Cleaning Brick Work.
- .2 CSA Group
 - .1 CAN/CSA-A82-06(R2011), Fired Masonry Brick Made From Clay or Shale.
 - .2 CAN/CSA-A371-04(R2009) , Masonry Construction for Buildings.
- .3 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
 - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for brick masonry and include product characteristics, performance criteria, physical size, finish and limitations.

1.3 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports including sand gradation tests in accordance with CAN/CSA-A179 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.
- .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.
 - .1 Construct mock-up panel of exterior brick construction 1200 x 1800 mm.

1.4 DELIVERY, STORAGE AND HANDLING

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

- .2 Store and protect brick masonry from nicks, scratches, and blemishes.
- .3 Replace defective or damaged materials with new.
- .4 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, padding, crates and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.5 SITE CONDITIONS

- .1 Ambient Conditions: assemble and erect components only when temperature is above 4 degrees C.

Part 2 Products

2.1 MANUFACTURED UNITS

- .1 Face brick:
 - .1 Fired clay brick: to CAN/CSA-A82.
 - .1 Type: X.
 - .2 Grade: EG.
 - .3 Size: to match existing
 - .4 Colour and texture: to match existing.
 - .5 Solid/hollow.
 - .2 Reinforcement:
 - .1 Reinforcement in accordance with Section 04 05 19- Masonry Anchorage and Reinforcing .
 - .3 Connectors:
 - .1 Connectors in accordance with Section 04 05 19- Masonry Anchorage and Reinforcing.
 - .4 Flashings:
 - .1 Flashing: in accordance with Section 04 05 23- Masonry Accessories.
 - .5 Mortar Mixes:
 - .1 Mortar and mortar mixes in accordance with Section 04 05 13- Masonry Mortar and Grouting.
 - .6 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 brick masonry units and in accordance with manufacturer's written recommendations and instructions.

Part 3 Execution

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for brick masonry installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of the Departmental Representative.
 - .2 Inform the 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 the Departmental Representative.

3.2 PREPARATION

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

3.3 INSTALLATION

- .1 Construction to conform to CAN/CSA-A371.
- .2 Bond: to match existing.
- .3 Coursing height: 200 mm for three/two bricks and three/two joints.
- .4 Jointing: concave where exposed or where paint or similar thin finish coating is specified.
 - .1 Mixing and blending: mix units within each pallet and with other pallets to ensure uniform blend of colour and texture.
 - .2 Clean unglazed clay masonry as work progresses.
 - .3 Reinforcement:
 - .1 Install reinforcing in accordance with Section 04 05 19- Masonry Anchorage and Reinforcing.
 - .4 Connectors:
 - .1 Install connectors in accordance with Section 04 05 19- Masonry Anchorage and Reinforcing.
 - .5 Flashings:
 - .1 Install flashings in accordance with Section 04 05 23- Masonry Accessories.
 - .6 Mortar Placement:
 - .1 Place mortar in accordance with Section 04 05 13- Masonry Mortar and Grouting.
 - .7 Repair/Restoration:
 - .1 Upon completion of masonry, fill holes and cracks, remove loose mortar and repair defective work.
 - .8 Tolerances:
 - .1 To CAN/CSA-A371 unless noted below.

3.4 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 74 11- Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.
- .3 Clean unglazed clay masonry: 10 m² area of wall designated by the Departmental Representative and leave for one week. If no harmful effects appear and after mortar has set and cured, protect windows, sills, doors, trim and other work, and clean brick masonry as follows.
 - .1 Remove large particles with wood paddles without damaging surface. Saturate masonry with clean water and flush off loose mortar and dirt.
 - .2 Scrub with solution of 25 ml trisodium phosphate and 25 ml household detergent dissolved in 1 L of clean water using stiff fibre brushes, then clean off immediately with clean water using hose. Alternatively, use proprietary compound recommended by brick masonry manufacturer in accordance with manufacturer's directions.
 - .3 Repeat cleaning process as often as necessary to remove mortar and other stains.
 - .4 Use acid solution treatment for difficult to clean masonry as described in Technical Note No.20 by the Brick Industry Association.
- .4 Clean concrete brick masonry as work progresses.
 - .1 Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with small piece of brick and finally by brushing.
- .5 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11- Cleaning.
- .6 Waste Management: separate waste materials for 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.

3.5 PROTECTION

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

END OF SECTION