

Part 1 General

1.1 References

- .1 Canadian Standards Association (CSA International)
 - .1 CSA-A165 Series-04(R2009), Standards on Concrete Masonry Units.
 - .2 CSA A179-04(R2009), Mortar and Grout for Unit Masonry.
 - .3 CSA-A371-04(R2009), 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.

1.2 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 - Construction Progress Schedules. Comply with manufacturer's written recommendations for sequencing construction operations.
- .3 Scheduling: schedule with other work in accordance with Section 01 32 16. Construction Progress Schedules.

1.3 Action Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, limitations and colours.
 - .2 Provide electronic copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 43 - Environmental Procedures.
- .3 Samples:
 - .1 Provide samples as follows:
 - .1 Two of each type of brick masonry unit specified.

- .2 Two cured, and coloured samples of mortar, illustrating mortar colour and colour range, supplemented with specific requirements in Section 04 05 12 - Masonry Mortar and Grout.
 - .3 Each type of masonry accessory and flashing specified, supplemented by specific requirements in Section 04 05 23 - Masonry Accessories.
 - .4 Samples: used for testing and when accepted become standard for material used.
- .4 Shop Drawings:
- .1 Provide drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
 - .2 Provide shop drawings detailing temporary bracing required, designed to resist wind pressure and lateral forces during installation.

1.4 Information Submittals

- .1 Certificates: provide manufacturer's product certificates certifying materials comply with specified requirements.
- .2 Test and Evaluation Reports:
 - .1 Provide certified test reports.
 - .2 Test reports to certify compliance of masonry units and mortar ingredients with specified performance characteristics and physical properties.
 - .3 Provide data for masonry units, in addition to requirements set out in referenced CSA and ASTM Standards, indicating initial rates of absorption.
- .3 Installer Instructions: provide manufacturer's installation instructions, including storage, handling, safety and cleaning.
- .4 Manufacturer's Reports: provide written reports prepared by manufacturer's on-site personnel to include:
 - .1 Verification of compliance of work with Contract.
 - .2 Site visit reports providing detailed review of installation of work, and installed work.

1.5 Closeout Submittals

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

1.6 Maintenance Material Submittals

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

1.7 Quality Assurance

- .1 Qualifications:
 - .1 Manufacturer: capable of providing field service representation during construction and approving application method.
 - .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 5 years documented experience with masonry work similar to this project.
 - .1 Masons employed on this project must demonstrate ability to reproduce mock-up standards.
- .2 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 showing masonry colours and textures, use of reinforcement, ties, through-wall flashing, weep holes, jointing, coursing, mortar and workmanship.
 - .3 Mock-up used:
 - .1 To judge workmanship, 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.
 - .3 To test colour.
 - .4 Construct mock-up where directed by Departmental Representative.
 - .5 Allow for inspection of mock-up by Departmental Representative before proceeding with work.
 - .6 When accepted by Departmental Representative, mock-up will demonstrate minimum standard for this work.
 - .7 Start work only upon receipt of written acceptance of mock-up by Departmental Representative.

1.8 Delivery, Storage, And Handling

- .1 Deliver materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .3 Storage and Handling Protection:
 - .1 Keep materials dry until use except where wetting of bricks is specified.
 - .2 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.
 - .3 Packaging Waste Management:
 - .1 Remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

1.9 Site Conditions

- .1 Ambient Conditions: assemble and erect components when temperatures are above 4 degrees C.
- .2 Weather Requirements: to CSA-A371.
- .3 Cold weather requirements:
 - .1 To 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 its 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 7 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 three days after installation.

Part 2 Products

2.1 Manufacturers

- .1 Ensure manufacturer has minimum 5 years experience in manufacturing components similar to or exceeding requirements of project.

2.2 Materials

- .1 Refer to 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 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.

3.3 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 and concrete block.
 - .2 Field 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.

3.4 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.

3.5 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, respecting construction tolerances permitted by CSA-A371.
- .3 Layout coursing and bond to achieve correct coursing heights, and continuity of bond above and below openings, with minimum of cutting.

3.6 Construction

- .1 Exposed masonry:
 - .1 Remove chipped, cracked, and otherwise damaged units, in accordance with CSA A-165, 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 of uniform depth where raked joints are indicated.
 - .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 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 Support of loads:
 - .1 Use 20 MPa concrete to Section 03 30 00 - Cast-in-Place Concrete, where concrete fill is used in lieu of solid units.
 - .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 concrete; keep paper 25 mm back from faces of units.
 - .7 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.
 - .8 Loose steel lintels:
 - .1 Install loose steel lintels. Centre over opening width.
 - .9 Control joints:
 - .1 Construct continuous control joints in approved locations.
 - .10 Movement joints:
 - .1 Build-in continuous movement joints as indicated.

3.7 Site Tolerances

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

3.8 Field Quality Control

- .1 Site Tests, Inspection:
 - .1 Perform field testing in accordance with Section 01 45 00 - Quality Control.
 - .2 Notify inspection agency minimum of 24 hours in advance of requirement for tests.
- .2 Manufacturer's Services:
 - .1 Have manufacturer of products supplied under this Section review work involved in handling, installation/application, and protection of its products, and submit written reports in acceptable format to verify compliance of work with Contract.
 - .2 Manufacturer's field services: provide manufacturer's field services, consisting of product use recommendations and periodic site visits for inspection of product installation, in accordance with manufacturer's instructions.
 - .3 Schedule site visits to review work as installation is about to begin.

- .4 Schedule site visits to review work at stages listed:
 - .1 After delivery and storage of products, and when preparatory work on which work of this Section depends is complete, but before installation begins.
 - .2 Twice during progress of work at 25% and 60% complete.
 - .3 Upon completion of work, after cleaning is carried out.
- .5 Obtain reports within three days of review and submit immediately to Departmental Representative.

3.9 Cleaning

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Progress Cleaning: in accordance with related masonry sections.
- .3 Final Cleaning:
 - .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
 - .2 Upon completion of installation and verification of performance of installation, remove surplus materials, rubbish, tools and equipment barriers.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .1 Divert unused or damaged masonry units from landfill as specified in Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.10 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, 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 recommended in 1.10 SITE CONDITIONS.

END OF SECTION

Part 1 General

1.1 References

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-A23.1/A23.2-09, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CAN/CSA A179-04(R2009), Mortar and Grout for Unit Masonry.
 - .3 CAN/CSA A371-04(R2009), Masonry Construction for Buildings.
 - .4 CAN/CSA-A3000-08, Cementitious Materials Compendium; CAN/CSA-A3002-08, Masonry and Mortar Cement.

1.2 Action And Informational Submittals

- .1 Product Data:
 - .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Provide manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.
 - .3 Provide electronic copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 43 - Environmental Procedures. Indicate VOC's mortar, grout, parging, colour additives and admixtures. Expressed as grams per litre (g/L).
- .2 Samples:
 - .1 Samples: provide unit samples in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:
 - .1 Provide two samples of coloured mortar.
 - .2 Provide confirmation of source or product data sheet, prior to mixing or preparation of mortars, to Departmental Representative of:
 - .1 Aggregate: course aggregate and sand.
 - .2 Cement.
 - .3 Lime.
 - .4 Colour pigment samples.
- .3 Manufacturer's Instructions:
 - .1 Provide manufacturer's installation instructions.

1.3 Quality Assurance

- .1 Test Reports: 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: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Provide two weeks notice of meeting date. Mock-ups:

1.4 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:
 - .1 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 colour or formula numbers.
 - .2 Maintain mortar, grout and packaged materials clean, dry, and protected against dampness, freezing, traffic and contamination by foreign materials.
- .2 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, paddling, and packaging materials 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 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.
- .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, Type GU - General use hydraulic cement (Type 10), HS - High-sulphate-resistant hydraulic cement (Type 50) colour to be determined.
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
 - .2 Masonry Cement: to CAN/CSA-A3002 and CAN/CSA A179, Type N, S.
 - .3 Mortar Cement: to CAN/CSA-A3002 and CAN/CSA A179, Type N, S, integral water repellents.
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
 - .4 Packaged Dry Combined Materials for mortar: to CAN/CSA A179, Type N, S, using cement, colour to be determined.
- .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.
- .5 Lime:
 - .1 Quick Lime: to CAN/CSA A179, Type N.
 - .2 Hydrated Lime: to CAN/CSA A179, Type S.
- .6 Bonding Agent: epoxy type.

-
- .7 Polymer Latex: organic polymer latex admixture of butadiene-styrene type non-emulsifiable bonding admixture.

2.2 Colour Additives

- .1 Use colouring admixture not exceeding 10% of cement content by mass, or integrally coloured masonry cement, to produce coloured mortar to match approved sample. Admixtures to be approved prior to use. Use in accordance with the specific manufacturer's recommendations.
- .2 White mortar: use white Portland cement, and lime to produce mortar type specified.
- .3 Powder: inorganic mineral oxide pigment; colour as selected.

2.3 Admixtures

- .1 Water Repellent Agents:
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
- .2 Air Entrainment Agents: acceptable percent added to mix 15.
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
- .3 Plasticizer Agents:
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
 - .2 Provide detailed product data in accordance with Section 01 33 00 – Submittal Procedures.
- .4 Accelerator Agents:
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
 - .2 Provide detailed product data in accordance with Section 01 33 00 – Submittal Procedures.
- .5 Extended life mortar: to CAN/CSA A179, factory and batch mixed, set controlling admixtures.
 - .1 Use low VOC products in compliance with SCAQMD Rule 1168.
 - .2 Provide detailed product data in accordance with Section 01 33 00 – Submittal Procedures.

2.4 Mortar

- .1 Mortar for exterior masonry above grade (load bearing/shear walls and non-load bearing): CSA A179; Type N, ½ part hydrated lime, 4 parts sand.
- .2 Mortar colour:
 - .1 Brick / coloured masonry units: colour to be selected from full range of manufacturer's available colours to match existing.

2.5 Mortar Mixing

- .1 Use pre-blended, pre-coloured mortar prepackaged under controlled factory conditions. Ingredients batching limitations to be 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 Add mortar colour and admixtures in accordance with manufacturer's instructions. Provide uniformity of mix and colouration.
 - .5 Do not use anti-freeze compounds including calcium chloride or chloride based compounds.
 - .6 Do not add air entraining admixture to mortar mix.
 - .7 Use a batch type mixer in accordance with CAN/CSA A179.
 - .8 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.
 - .9 Re-temper mortar only within two hours of mixing, when water is lost by evaporation.
 - .10 Use mortar within 2 hours after mixing at temperatures of 32 degrees C, or 2-1/2 hours at temperatures under 10 degrees C.

2.6 Grout Mixes

- .1 Bond Beams: grout mix 10 to 12.5 MPa strength at 28 days; 200-250 mm slump; mixed in accordance with CAN/CSA A179 fine grout.
- .2 Lintels: grout mix 10 to 12.5 MPa strength at 28 days; premixed type in accordance with CAN/CSA-A23.1.
- .3 Grout: Minimum compressive strength of 12.5 MPa at 28 days. Maximum aggregate size and grout slump: CAN/CSA A179.

2.7 Grout Mixing

- .1 Mix batched and delivered grout in accordance with CAN/CSA-A23.1 transit mixed.
- .2 Mix grout ingredients in quantities needed for immediate use in accordance with CAN/CSA A179.
- .3 Add admixtures in accordance with manufacturer's instructions; mix uniformly.
- .4 Do not use calcium chloride or chloride based admixtures.

2.8 Mix Tests

- .1 Testing Mortar Mix:
 - .1 Test mortar to requirements in accordance with CAN/CSA A179. Test prior to construction and 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.
 - .2 Testing Grout Mix:
 - .1 Test grout to requirements of Section 01 45 00 - Quality Control, and in accordance with CAN/CSA A179. Test prior to construction and during construction for:
 - .1 Compressive strength.
 - .2 Sand/cement ratio.
 - .3 Water content and water/cement ratio.
 - .4 Slump.

Part 3 Execution

3.1 Examination

- .1 Request inspection of spaces to be grouted.

3.2 Preparation

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

3.3 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.

3.4 Construction

- .1 Do masonry mortar and grout work in accordance with CAN/CSA A179 except where specified otherwise.
- .2 Apply parging in uniform coating not less than 10 mm thick.

3.5 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,
- .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.

3.6 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.

3.7 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.

3.8 Field Quality Control

- .1 Site Tests, Inspection: in accordance with Section 04 05 00 - Common Work Results for Masonry supplemented as follows:
 - .1 Test and evaluate mortar prior to construction and during construction in accordance with CAN/CSA A179.
 - .2 Test and evaluate grout prior to construction and during construction to CAN/CSA A179; test in conjunction with masonry unit sections specified.
- .2 Manufacturer's Field Services: in accordance with Section 04 05 00 - Common Work Results for Masonry.

3.9 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.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.10 Protection Of Completed Work

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

END OF SECTION

Part 1 General

1.1 References

- .1 ASTM International Inc.
 - .1 ASTM A36/A36M-08, Standard Specification for Carbon Structural Steel.
 - .2 ASTM A82/A82M-07, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
 - .3 ASTM A167-99(R2009), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - .4 ASTM A307-07, Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
 - .5 ASTM A580/A580M-08, Standard Specification for Stainless Steel Wire.
 - .6 ASTM A641/A641M-09, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
 - .7 ASTM-A666-03, Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- .2 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-A23.1/A23.2-09, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CAN/CSA A179-04R2009), Mortar and Grout for Unit Masonry.
 - .3 CAN/CSA A370-04(R2009), Connectors for Masonry.
 - .4 CAN/CSA A371-04(R2009), Masonry Construction for Buildings.
 - .5 CAN/CSA G30.18-09, Billet-Steel Bars for Concrete Reinforcement.
 - .6 CSA-S304.1-04(R2010), Design of Masonry Structures.
 - .7 CSA W186-M1990(R2007), Welding of Reinforcing Bars in Reinforced Concrete Construction.

1.2 Action And Informational Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheets illustrating products to be incorporated into project for specified products.
 - .2 Provide electronic copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 43 - Environmental Procedures.
- .3 Shop Drawings:
 - .1 Provide shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Provide drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
 - .2 Provide shop drawings detailing bar bending details, anchorage details lists and placing drawings
 - .3 On placing drawings, indicate sizes, spacing, location and quantities of reinforcement and connectors.

- .4 Samples:
 - .1 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
- .5 Manufacturer's Instructions:
 - .1 Provide manufacturer's installation instructions.

1.3 Quality Assurance

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section 04 05 00 - Common Work Results for Masonry.
- .4 Mock-ups:
 - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control and requirements of Section 04 05 00 - Common Work Results for Masonry supplemented as follows:
 - .1 Construct mock-ups panel of anchorage installation.
 - .2 anchorage material, connectors, reinforcement material, and workmanship.

1.4 Field Measurements

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

1.5 Delivery, Storage, And Handling

- .1 Deliver, store and handle masonry anchorage and reinforcing materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:
 - .1 Deliver reinforcement and connectors, identified in shop and placement drawings.
- .2 Packaging Waste Management:
 - .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

Part 2 Products

2.1 Materials

- .1 Bar reinforcement: Steel to CAN/CSA A371 and CAN/CSA G30.18, Grade 300.
- .2 Connectors: to CAN/CSA A370 and CSA-S304.1.
- .3 Corrosion protection: to CSA-S304.1, galvanized to CSA-S304.1 and CAN/CSA A370.
- .4 Fasteners: installed post-construction:
- .5 Ties: stainless steel type 304 to CAN/CSA A370

-
- .1 Adjustable Unit Ties: to CAN/CSA A370: proprietary type ties, type, style and size to suit application in accordance with manufacturer's recommendations.
 - .2 Joint Reinforcement Ties: to CAN/CSA A370:
 - .1 Single Wythe Joint Reinforcement: truss type:
 - .1 Steel wire, hot dip galvanized: to ASTM A641, Class 3 after fabrication.
 - .2 Cold drawn steel wire conforming to ASTM A82.
 - .3 Stainless steel conforming to ASTM A580, Type 304, 4.8 mm side rods with 48 mm cross ties.
 - .2 Multiple Wythe Joint Reinforcement: truss type: without moisture drip; non-adjustable:
 - .1 Steel wire, hot dip galvanized: to ASTM A641 Class 3 after fabrication.
 - .2 Cold drawn steel wire conforming to ASTM A82.
 - .3 Stainless steel conforming to ASTM A580 Type 304, 4.8 mm side rods with 4.8 mm cross rods.
 - .6 Anchors: to CAN/CSA A370:
 - .1 Conventional Anchors: type steel bolts with bent bar anchors, shape L, sized to suit application.
 - .2 Wedge Anchors: expansion anchors type wedge and bolt, sized to suit application.
 - .3 Sleeve Anchors: type sleeve and bolt, sized to suit application.
 - .4 Self-Contained Anchors: type double-glass/plastic vial system, with epoxy resin and hardener.
 - .5 Stone Anchors: series 300 stainless steel conforming to ASTM A666.
 - .6 Anchor Bolts: conventional (unpatented) anchors, steel, galvanized to CAN/CSA A370 Table 5.2 finish.
 - .7 Conventional Bolts:
 - .1 Bolts: to ASTM A36, bar stock shop threaded, bent bar anchors, L shaped.
 - .2 Plate anchors: steel to ASTM A36, weld square of circular steel plate perpendicular to axis of steel bar threaded on opposite end.
 - .3 Through bolt rods: to ASTM A307 threaded rod or threaded ASTM A36 bar stock.
 - .8 Adhesive Anchors: proprietary systems, pre-mixed, self-contained system with double glass vial system to contain epoxy, consisting of resin, hardener and aggregate.

2.2 Fabrication

- .1 Fabricate reinforcing in accordance with CAN/CSA-A23.1 and Reinforcing Steel Manual of Standard Practice by the Reinforcing Steel Institute of Canada.
- .2 Fabricate connectors in accordance with CAN/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 Comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

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 and reinforcement in accordance with CAN/CSA A370, CAN/CSA A371, CAN/CSA-A23.1 and CSA-S304.1 unless indicated otherwise.
- .2 Prior to placing mortar or grout, obtain Departmental Representative's approval of placement of reinforcement and connectors.
- .3 Supply and install additional reinforcement to masonry as indicated.

3.4 Bonding And Tying

- .1 Bond walls of two or more wythes using metal connectors in accordance with CSA-S304.1, CAN/CSA A371 and as indicated.
- .2 Tie masonry veneer to backing in accordance with NBC, CSA-S304.1, CAN/CSA A371 and as indicated.
- .3 Install unit, adjustable, single wythe and multiple wythe joint reinforcement where indicated and in accordance with manufacturer's instructions.
 - .1 Bond walls of two or more wythes using metal connectors in accordance with CAN/CSA A371 and as indicated.
 - .2 Install horizontal joint reinforcement 400 mm on centre.
 - .3 Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 400 mm each side of opening.
 - .4 Place joint reinforcement continuous in first and second joint below top of walls.
 - .5 Lap joint reinforcement ends minimum 150 mm.
 - .6 Connect stack bonded unit joint corners and intersections with strap anchors 400 mm on centre.

3.5 Reinforced Lintels And Bond Beams

- .1 Reinforce masonry beams, masonry lintels and bond beams as indicated.

.2 Place and grout reinforcement in accordance with CSA-S304.1, CAN/CSA A371, and CAN/CSA A179.

.3 Support and position reinforcing bars in accordance with CAN/CSA A371.

3.6 Grouting

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

3.7 Anchors

.1 Supply and install metal anchors in accordance with CAN/CSA A370 and CAN/CSA A371.

3.8 Lateral Support And Anchorage

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

3.9 Movement Joints

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

3.10 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.

3.11 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 and grout.

3.12 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.

3.13 Cleaning

.1 Clean in accordance with Section 01 74 11 - Cleaning.

.1 Remove surplus materials, excess materials, rubbish, tools and equipment.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

Part 1 General

1.1 References

- .1 ASTM International Inc.
 - .1 ASTM D2240-05(2010), Standard Test Method for Rubber Property - Durometer Hardness.
- .2 Canadian Standards Association (CSA International)
 - .1 CAN/CSA A371-04(R2009), Masonry Construction for Buildings.
 - .2 CAN/CSA-ISO 14021-00(R2204), Environmental Labels and Declarations - Self Declared Environmental Claims (Type II Environmental Labelling).
- .3 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
 - .1 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.

1.2 Action And Informational Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.
- .3 Shop Drawings:
 - .1 Provide shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .1 Provide drawings stamped and signed by professional engineer registered or licensed in Province of Saskatchewan, Canada.
 - .2 Shop drawings consist of flashing and installation details. Indicate sizes, spacing, location and quantities of fasteners.
- .4 Samples:
 - .1 Provide masonry accessory samples in accordance with Section 01 33 00 - Submittal Procedures, supplemented as follows:
 - .1 Materials: two, cured, and coloured samples, illustrating colour and colour range. Include:
 - .1 Movement joint filler.
 - .2 Lap adhesive.
 - .3 Mechanical fasteners.
 - .4 Reglets.
 - .2 Two 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.
- .5 Quality Assurance Submittals:
 - .1 Test reports: submit certified test reports in accordance with Section 04 05 00 - Common Work Results for Masonry.

-
- .2 Certificates: submit in accordance with Section 04 05 00 - Common Work Results for Masonry.
 - .3 Manufacturer's Instructions: submit in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:
 - .1 Submit installation instructions for fillers, adhesives, reglets, brick vents, weeps, vents, diverters, screens, and flashings upon request.
 - .6 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
 - .7 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
 - .8 Pre-installation Meetings: conduct pre-installation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section 04 05 00 - Common Work Results for Masonry.

1.3 Field Measurements

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

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.
- .2 Packaging Waste Management:
 - .1 Separate waste materials for reuse and recycling 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 durometer hardness to ASTM D2240 of size and shape indicated.
 - .1 Use low VOC products in compliance with the SCAQMD Rule 1168.
 - .2 Material type: closed cell neoprene.
- .2 Lap adhesive: recommended by masonry flashing manufacturer. Use low VOC products in compliance with the SCAQMD Rule 1168.
- .3 Mechanical fasteners: recommended by flashing manufacturer to suit project requirements.

2.2 Moisture Control

- .1 Weep Hole Vents: galvanized steel.
- .2 Grout Screens: 6 mm square monofilament screen is fabricated from high-strength, non-corrosive polypropylene polymers to isolate flow of grout in designated areas.

2.3 Flashings

- .1 Sheet metal: prefinished steel.
 - .1 Thickness: 0.91 mm (20 ga.)
 - .2 Finish: prefinished, colour to be determined by Departmental Representative.
 - .3 Locations: Windows, Head and Sill.
- .2 Sheet metal: Zinc coated steel sheet: commercial quality to ASTM A653/A653M:
 - .1 Thickness: 1.31mm (18 ga.)
 - .2 Finish: Z275 zinc coating.
 - .3 Locations: Break shapes at transitions as per details.

Part 3 Execution

3.1 Application

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

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.
- .4 Reglets: install reglets at locations indicated on drawings.

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 Grout screens: 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 is 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 not less than 150 mm, and as follows:

-
- .1 For masonry backing embed or bond flashing 25 mm in joint.
 - .2 For concrete backing, insert or bond flashing into reglets.
 - .3 For wood frame backing, staple flashing to walls behind water resistive paper, and lap joints.
 - .4 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 Clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

END OF SECTION

Part 1 General

1.1 References

- .1 ASTM International Inc.
 - .1 ASTM C73-05, Standard Specification for Calcium Silicate Brick (Sand-Lime Brick).
 - .2 ASTM C216-10, Standard Specification for, Facing Brick (Solid Masonry Units Made of Clay or Shale).
- .2 Brick Industry Association (BIA)
 - .1 Technical Note No. 20-2006, Cleaning Brick Work.
- .3 Canadian Standards Association (CSA International)
 - .1 CAN/CSA A82-06, Fired Masonry Brick Made From Clay or Shale.
 - .2 CAN/CSA-A165 Series-2004(R2009), CSA Standards on Concrete Masonry Units.
 - .3 CAN/CSA A371-04(R2009), Masonry Construction for Buildings.

1.2 Action And Informational Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Manufacturer's Instructions:
 - .1 Provide manufacturer's installation instructions in accordance with Section 04 05 00 - Common Work Results for Masonry.
- .4 Samples:
 - .1 Provide unit samples in accordance with Section 01 33 00 - Submittal Procedures.

1.3 Quality Assurance Submittals

- .1 Provide Certificates: in accordance with Section 04 05 00 - Common Work Results for Masonry.
- .2 Test and Evaluation Reports: submit certified test reports in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:
- .3 Pre-Installation Meetings: conduct pre-installation meeting in accordance with Section 04 05 00 - Common Work Results for Masonry to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements.
- .4 Delivery, Storage, and Handling:
 - .1 Deliver, store and handle brick unit masonry in accordance with Section 01 61 00 - Common Product Requirements.
- .5 Packaging Waste Management:

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.4 Site Conditions

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

Part 2 Products

Manufactured Units

- .1 Reclaim existing brick from demolition.
- .2 Where new brick required:
 - .1 Face brick:
 - .1 Fired clay brick: to CAN/CSA A82.
 - .1 Type: X.
 - .2 Grade: EG.
 - .3 Size: Modular 90x57x190 mm.
 - .4 Colour and texture: to match existing.
 - .5 Solid/hollow.
 - .3 Reinforcement:
 - .1 Reinforcement in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.
 - .4 Connectors:
 - .1 Connectors in accordance with Section 04 05 19 - Masonry Anchorage and Reinforcing.
 - .5 Flashings:
 - .1 Flashing: in accordance with Section 04 05 23 - Masonry Accessories.
 - .6 Mortar Mixes:
 - .1 Mortar and mortar mixes in accordance with Section 04 05 12 - Masonry Mortar and Grout.
 - .7 Grout Mixes:
 - .1 Grout and grout mixes in accordance with Section 04 05 12 - Masonry Mortar and Grout.
 - .8 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 Verify surfaces and conditions are ready to accept work of this Section.
- .2 Commencing installation means acceptance of existing substrates.

3.2 Preparation

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

3.3 Application

- .1 Manufacturer's Instructions: comply with manufacturer's written recommendations, including product technical bulletins, handling, storage and installation instructions, and datasheets.

3.4 Installation

- .1 Construction to conform to CAN/CSA A371.
- .2 Bond: to match existing.
- .3 Coursing height: to match existing.
- .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 12 - Masonry Mortar and Grout.
 - .7 Grout Placement:
 - .1 Place grout in accordance with Section 04 05 12 - Masonry Mortar and Grout.
 - .8 Repair/Restoration:
 - .1 Upon completion of masonry, fill holes and cracks, remove loose mortar and repair defective work.
 - .9 Field Quality Control:
 - .1 Site Tests, Inspection: in accordance with Section 04 05 00 - Common Work Results for Masonry.
 - .2 Manufacturer's Field Services: in accordance with Section 04 05 00 - Common Work Results for Masonry.

- .10 Tolerances:
 - .1 To CAN/CSA A371 unless noted below.

3.5 Cleaning

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Perform cleaning as soon as possible after installation to remove construction and accumulated environmental dirt.
- .3 Clean unglazed clay masonry: mock up panel specified in Section 04 05 00 - Common Work Results for Masonry as directed below 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 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.
- .6 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.6 Protection

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

END OF SECTION