

PART 1 - GENERAL

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| <u>1.1 RELATED REQUIREMENTS</u> | .1
.2 | Masonry Mortar and Grout - Section 04 05 12.
Masonry Anchorage and Reinforcing - Section 04 05 19. |
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| <u>1.2 PRICE AND PAYMENT PROCEDURES</u> | .1 | Repair work will be paid for on a unit price basis according to pre-established unit prices. Measurement will be based on number of brick repaired. |
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| <u>1.3 REFERENCES</u> | .1 | Reference Standards:
.1 CSA International
.1 CAN/CSA-A82-14, Fired Masonry Brick Made From Clay or Shale.
.2 CAN/CSA-A179-14, Mortar and Grout for Unit Masonry.
.3 CSA-S304.1, Design for Masonry Structures.
.4 CAN/CSA-A370-14, Connectors for Masonry.
.5 CAN/CSA-A371-14, Masonry Construction for Buildings. |
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| <u>1.4 ADMINISTRATIVE REQUIREMENTS</u> | .1 | Pre-installation Meeting:
.1 Conduct pre-installation meeting to verify project requirements and procedures, manufacturer's installation instructions and manufacturer's warranty requirements. |
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| <u>1.5 ACTION AND INFORMATIONAL SUBMITTALS</u> | .1
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.3 | Provide submittals in accordance with Section 01 33 00.
Product Data:
.1 Provide manufacturer's printed product literature and data sheets for brick and materials and include product characteristics, performance criteria, physical size, finish and limitations.
Samples:
.1 Submit samples: |

1.6 QUALITY
ASSURANCE

- .1 Two of each type of masonry reinforcement and tie proposed for use as per Section 04 05 19.
 - .2 As required for testing purposes.
- .4 Certificates:
 - .1 Provide certificates signed by manufacturer certifying materials comply with specified performance characteristics, criteria and physical requirements.
- .5 Test Reports:
 - .1 Provide certified test reports showing compliance with specified performance characteristics and physical properties.

- .1 Mock-ups:
 - .1 Construct mock-up in accordance with Section 01 33 00 and 04 05 19.
 - .2 Construct mock-up of each type of masonry unit repair (Type 1(X), Type 2(Y), Type 3(Z)) showing brick removal, masonry pattern, cleaning of existing reinforcing, tie installation, jointing, coursing, mortar, joint finishing, sealants, cleaning and workmanship.
 - .3 Construct mock-up where directed by Departmental Representative.
 - .4 Notify Departmental Representative minimum of 48 hours prior to construction of the mock-up.
 - .5 Construct mock-up under supervision of Departmental Representative to demonstrate understanding of specified procedures, techniques and formulations is achieved before work commences.
 - .6 Work not to proceed prior to approval of mock-up. Allow 24 hours for inspection of mock-up by Departmental Representative. Accepted mock-up becomes standard for this Work.
 - .7 When mock-up accepted, proceed with repair work. Mock-up will remain as part of finished Work.

1.7 DELIVERY,
STORAGE AND
HANDLING

- .1 Replacement Brick:
 - .1 Replacement brick is to be supplied by Departmental Representative, and delivered by Contractor.
 - .2 Replacement brick is on pallets and is available for pick-up as required at 45 Sacre-Coeur in Gatineau, QC. Notify Departmental Representative 24 hours in advance to arrange Contractor pick-up of masonry. Pick up hours are between 9:00-15:00. Contractor to review

conditions and be responsible for pick-up and delivery.
.3 Provide weather protection and construction protection in accordance with CSA-S304.1.
.4 Provide weather protection to newly opened sections in assembly.
.5 Transport and keep bricks on wooden platforms.
.6 Ensure that sharp edges of bricks do not come into contact with hard objects.
.7 At request of Departmental Representative, turn over any remaining salvaged bricks to Owner at completion of contract.

1.8 AMBIENT
CONDITIONS

- .1 Maintain mortar materials and surrounding air to minimum 10 degrees C prior to and for minimum 72 hours after completion of brick repairs.
- .2 Maintain masonry temperature between 10 degrees C and 25 degrees C for duration of the Work in accordance with Section 04 05 12.
- .4 Cold weather requirements: meet CAN/CSA A371 recommended practices for cold weather masonry construction.

PART 2 - PRODUCTS

2.1 REPLACEMENT BRICK

- .1 Use hard, sound, and clean bricks provided by Departmental Representative, and only with Departmental Representative's approval. Inspect replacement bricks and use only bricks in good condition and without evidence of soluble salts

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| <u>2.2 MORTAR</u> | .1 | Mortar: in accordance with CAN/CSA A179, Section 04 05 12. |
| | .2 | Proportion Specification:
.1 In accordance with CAN/CSA A179 |
| | .3 | Property Specification:
.1 Bedding Mortar: Type S.
.1 Mortar compressive strength at 7 days: minimum 5MPa, maximum 15MPa.
.2 Mortar compressive strength at 28 days: minimum 10MPa, maximum 20MPa.
.3 Air entrainment: 8-12%.
.4 Flexural bond strength: minimum 0.5MPa. |

PART 3 - EXECUTION

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| <u>3.1 SITE
VERIFICATION OF
CONDITIONS</u> | .1 | Check for evidence of repairs, cracks, moisture, soluble salts contamination and other defects not noted on Contract Drawings, and report to Departmental Representative before starting Work. |
| | .2 | Stop work and report to Departmental Representative immediately evidence of hazardous materials. |

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| <u>3.2 PREPARATION</u> | .1 | Place safety devices and signs near work area as directed in accordance with Section 01 56 00 - Temporary Barriers and Enclosures, and the Project Drawings. |
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| <u>3.3 BRICK REMOVAL</u> | .1 | Verify locations and dimensions of areas of Work with Departmental Representative. |
| | .2 | Remove identified areas of brickwork as follows:
.1 Identify and Confirm broken bricks to be removed as shown on the project drawings.
.2 Allow for additional broken brick removals, as identified on site during review by Departmental Representative.
.3 Using a cover-meter, scan the masonry to identify locations of embedded reinforcing steel, masonry shear anchors, and other masonry accessories embedded in the brick panel.
.4 Do not damage existing reinforcing steel or |

masonry anchors embedded in the brick panel.

.5 Remove existing mortar and bricks to be replaced using a hammer drill at close interval.

.6 Remove only the bricks identified for replacement.

.7 Clean remaining masonry of all mortar residue to a clean, sound surface.

3.6 BRICK REPLACEMENT

- .1 Install masonry ties and connectors in accordance with the project drawings and as per CSA A370 and CSA A371 unless indicated otherwise. Prior to placing mortar, obtain approval of Departmental Representative of placement of ties and connectors.
- .2 Co-ordinate bond pattern, coursing height and joint width with existing brickwork surrounding replacement area.
- .3 Mix and blend brick units within each pallet and with other pallets to ensure uniform blend of colour and texture.
- .4 Clean and coat existing exposed reinforcing steel to Section 04 05 19.
- .5 Except in cold weather, pre-wet bricks having an initial rate of absorption exceeding 30 g/minute-194 cm² to uniform degree of saturation, 3 to 4 hours before laying. Do not lay until surface is dry or damp only, with no standing water.
- .6 Clean dust and brick fragments from slot. Before proceeding with Work, inspect cleaned surface with Departmental Representative.
- .7 Slot the back of the brick units to be replaced so that the slot will match the location of existing reinforcing bars.
- .8 Dampen slot's surfaces before applying mortar.
- .9 Apply mortar and lay bricks.
 - .1 Lay bricks on full beds of mortar.
 - .2 Ensure slotted back of brick unit is completely filled with mortar.
 - .3 Fill vertical joints buttered and placed full in face and back-up bricks, and at vertical joint between wythes.
 - .4 Lay bricks and tool joints in one operation.
- .10 Finish joints to match those of existing brickwork

surrounding area of replacement.

- .11 Keep new mortar damp for 3 days at a minimum temperature of 10 degrees C.
- .12 Clean finished brickwork as work progresses.
 - .1 Remove mortar splashings on exposed brickwork.
 - .2 Leave no mortar on face of bricks.
 - .3 Remove mortar staining before it sets.
 - .4 Clean masonry with clean water and soft bristle brush only.
- .13 Inspect finished brickwork with Departmental Representative.

3.7 CLEANING

- .1 Clean brick work surfaces after repairs have been completed and mortar has set.
- .2 Clean brick surfaces of adhesive or mortar residue resulting from work performed without damaging bricks or joints.

3.9 PROTECTION OF WORK

- .1 Cover completed and partially completed work not enclosed or sheltered at end of each work day.
 - .1 Membranes should extend to 0.5 m over surface area of work and be tightly installed to prevent finished work from drying out too rapidly.
- .2 Cover with waterproof tarps to prevent weather from eroding recently repointed material. Ensure that bottoms of tarps permit airflow to reach mortar in joints.
- .3 Anchor coverings securely in position.
- .4 Damp cure:
 - .1 Provide damp cure for mortars.
 - .1 Install and maintain wetted burlap protection during the curing process:
 - .1 Minimum 3 days.
 - .2 Wet mist burlap only - ensure no direct spray reaches surface of curing mortar.
 - .3 Shade areas of work from direct sunlight and maintain constant dampness of burlap.
- .5 Protect from drying winds. Pay particular attention at corners of structure.

- .6 Maintain ambient temperature of minimum 10 degrees C after repointing masonry for:
 - .1 Minimum 7 days in summer.
 - .2 Minimum 30 days in cold weather conditions using dry heated enclosures.
- .7 Protect adjacent finished work against damage which may be caused by on-going work.