
Partie 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 03 30 00 – Cast-in Place Concrete.
- .2 Section 04 03 41 – Historic – Repairing Stone.
- .3 Section 04 05 12 – Masonry Mortar and Grout.
- .4 Section 04 05 19 - Masonry Anchorage and Reinforcing.
- .5 Section 04 05 23 – Masonry Accessories.
- .6 Section 04 22 00 – Concrete Unit Masonry.
- .7 Section 04 43 26 – Dimension Stone Veneer Cladding.
- .8 Section 07 26 00 – Vapour Retarders.
- .9 Section 07 62 00 – Sheet Metal Flashing and Trim.
- .10 Section 07 92 00 – Joint Sealants.
- .11 Section 08 11 00 – Metal Doors and Frames.
- .12 Section 08 44 13 – Glazed Aluminum Curtain Walls.

1.2 REFERENCES

- .1 American Concrete Institute (ACI)
 - .1 ACI 530/530.1-11, Building Code Requirements and Specifications for Masonry Structures and Related Commentaries.
- .2 ASTM International
 - .1 ASTM A580/A580M-13a, Standard Specification for Stainless Steel Wire.
 - .2 ASTM C119-11, Standard Terminology Relating to Dimension Stone.
 - .3 ASTM C144-11, Standard Specification for Aggregate for Masonry Mortar.
 - .4 ASTM C207-06(2011), Standard Specification for Hydrated Lime for Masonry Purposes.
 - .5 ASTM C270-12a, Standard Specification for Mortar for Unit Masonry.
 - .6 ASTM C615/C615M-11, Standard Specification for Granite Dimension Stone.
 - .7 ASTM C880/C880M-09, Standard Test Method for Flexural Strength of Dimension Stone.
 - .8 ASTM C920-11, Standard Specification for Elastomeric Joint Sealants.
 - .9 ASTM C1242-12ae1, Standard Guide for Design, Selection, and Installation of Stone Anchors and Anchoring Systems.
- .3 CSA Group
 - .1 CAN/CSA-A370-F04(C2009), Connectors for Masonry.

- .2 CAN/CSA-A371-F04(C2009), Masonry Construction for Buildings.
- .3 CAN/CSA-A3000-F08, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
- .4 International Masonry Industry All-Weather Council (IMIAC)
 - .1 Recommended Practices and Guide Specifications for Cold Weather Masonry Construction.
- .5 South Coast Air Quality Management District (SCAQMD)
 - .1 SCAQMD Rule 1168-05, Adhesive and Sealant Applications.

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 and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in the province of Quebec, Canada.
 - .2 Indicate sizes and sections of granite, arrangements of joints and bonding, anchoring, dowelling, and cramping.
 - .3 Each section of granite indicated on shop drawings must bear corresponding number marked on its back or bed.
- .4 Samples:
 - .1 Submit sample for each finish product specified, 2 complete sets of colour chips representing manufacturer's full range of available colours, textures, and patterns.

1.4 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 Mock-ups:
 - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
 - .1 Construct mock-up panel of granite veneer construction 1200 x 1800 mm, showing colors and textures, use of reinforcement , ties, through wall flashing, weep holes, jointing, coursing, mortar and quality of work.
 - .2 Mock-up used:
 - .1 To judge quality of work, substrate preparation, operation of equipment and material application.

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 off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Store and protect granite veneer cladding from nicks, scratches, and blemishes.
 - .3 Replace defective or damaged materials with new.
- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Do not install at temperatures below 12 degrees C or above 38 degrees C.
 - .2 Maintain temperatures at or above 12 degrees C until cementitious materials have fully cured.
 - .3 When work is carried out in cold weather, refer to IMIAC's Recommended Practices and Specifications for Cold Weather Masonry Construction.
 - .4 Do not apply epoxy mortar and grouts at temperatures below 15 degrees C or above 25 degrees C.
- .2 Field Measurements:
 - .1 Make field measurements necessary to ensure proper fit of members.

1.7 ACCEPTABLE PRODUCTS AND MATERIALS

- .1 Where a particular brand name is stipulated, see Instructions to Bidders for procedure for requesting approval of substitute materials and products

Partie 2 Products

2.1 MATERIALS

- .1 Granite: to ASTM C615, Picasso (Polycor) colour, corresponding to the following criteria:
 - .1 Absorption by weight: 0.16%, to ASTM C97.
 - .2 Compressive strength: 160.5 Mpa, to ASTM C170.
 - .3 Density: 2,646kg/m³, to ASTM C97.

- .4 Modulus of rupture: 16.3Mpa, to ASTM C99.

2.2 FINISHES

- .1 Finish for base of walls (G1 on drawings): waterjet.
- .2 Finish for wall cladding in west wing (G2 on drawings): antique finish.

2.3 REINFORCEMENT AND ANCHORAGES

- .1 Anchors, Cramps, Dowels: 316 stainless steel.
- .2 Wall ties: to CAN/CSA-A370, 316 stainless steel triangular wire.
- .3 Fasteners: stainless steel.
- .4 Shop finish:
 - .1 Stainless steel: 316, to ASTM A508/A508M.

2.4 FLASHING

- .1 Flexible Flashing: air/vapour barrier sheet membrane, as specified under Section 07 26 00- Vapour Retarders and Section 07 27 00.02 – Air Barriers - Performance.
- .2 Flashing membrane: self-adhering SBS rubberized asphalt sheeting, laminated to yellow cross-laminated polyethylene 1 mm thick film.
- .3 Metal flashing: stainless steel sheet metal.

2.5 MORTAR AND ADHESIVE MATERIALS

- .1 Refer to Section 04 05 12 – Masonry Mortar and Grout.
- .2 Water: potable, clean and free of deleterious amounts of acids, alkalies or organic materials.
- .3 Portland cement mortar (dry or dry set) to ANSI A108.

2.6 ACCESSORIES

- .1 Spacers: non-staining resilient plastic, sized to joint thicknesses and lengths, not extending into portion of joint reserved for sealing compound to prevent spacers from adhering to compound.
- .2 Weep Hole Vents: moulded polyvinyl chloride grilles, insect proof.
- .3 Sealing compound and back-up materials: to Section 07 92 00 – Joint Sealants.

2.7 PREPARATION

- .1 Cut granite to shape and dimensions and full to square with bed faces and joints as indicated.
 - .1 Properly dress cladding faces.
 - .2 Cut granite for coping, cornices, entablatures, supports and lintels to fit beds.
- .2 Cut-in reglets for flashings where indicated.

- .3 Execute moulded work from full size details.
 - .1 Make exposed arrises in true alignment and ease slightly to prevent snipping.
- .4 Back-check granite coming in contact with structural members as indicated.
 - .1 Allow minimum of 10 mm locally and 25 mm clearance between back of stone and steel and concrete structural members.
 - .2 Shape beds of stone resting on structural work to fit supports.
- .5 Cut granite for anchors, cramps and dowels.
 - .1 Provide Lewis pin holes in pieces which cannot be manually handled.
 - .2 Do not cut holes in exposed surfaces.
- .6 Finish stone facing and joints as indicated and in accordance with product and Works samples and mock-ups.

2.8 TOLERANCES

- .1 Sizing tolerances must be as follows.
 - .1 Length: plus or minus 3.
 - .2 Height: plus or minus 3 mm.
 - .3 Deviation From Square: plus or minus 3 mm, with measurement taken using the longest edge as the base.

Partie 3 Execution

3.1 EXAMINATION

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

- .1 Cut granite to shape and dimensions and full to square with jointing as indicated.
- .2 Join and bed granite pieces as indicated. Make joints maximum 6 mm thick.
 - .1 Make bed joints free of large depressions.
- .3 Saw or roughly dress backs of granite pieces to approximately true plane. Maximum acceptable variation in thickness may not exceed 8 mm on pieces less than 75 mm thick or 8 mm on thicker pieces.

- .4 Clean sawn backs and beds of rust stains and iron particles.
- .5 Execute moulded work from full size details. Make exposed arrises in true alignment and ease slightly to prevent snipping.
- .6 Cut granite for anchors, cramps, dowels. Provide Lewis pin holes in pieces which can not be manually handled. Do not cut holes in exposed surfaces.
- .7 Back-check granite coming in contact with structural members as indicated. Shape beds of stone resting on structural work to fit supports.
- .8 Cut-in reglets for flashings where indicated.
- .9 Clean surfaces with water and stiff brush.

3.3 SITE TOLERANCES

- .1 Variation from Plumb: plus or minus 6 mm per 3 metres maximum.
- .2 Variation from Level: plus or minus 13 mm per 6 metres maximum.
- .3 Variation in Cross-Sectional Dimensions: plus 13 mm or minus 6 mm.

3.4 INSTALLATION

- .1 Construction in accordance with CAN/CSA-A371.
- .2 Clean granite removing dirt or foreign matter from edges and surfaces. Do not use wire brushes.
- .3 Set granite plumb and accurately in position with anchors securely placed, as indicated on shop drawings. Orient stone veining in direction indicated on shop drawings.
- .4 Set granite plumb and accurately in position with anchors securely placed, as indicated on shop drawings. Orient stone veining in direction indicated on shop drawings.
- .5 Attach anchors to back-up wall and to granite. Fill anchor holes and encase anchors in mortar.
- .6 Make joints uniform and 10 mm deep. Place non-staining resilient cushions at least one joint width back from face to maintain joint width. Keep edges and faces aligned to respect indicated tolerances.
- .7 Use plastic weep hole vents.
- .8 Prevent soiling, chipping or defacing granite. Remove mortar droppings and wash clean.
- .9 Pointing: remove dirt and loose mortar from joints by using pressure air stream.
 - .1 Wet joints for mortar pointing. Dry joints for sealant pointing.
 - .2 Point joints with pointing mortar in 2 stages. Rub smooth with plastic tool to slightly concave joint.
 - .3 Point joints at base of walls with sealant. Do work in accordance with Section 07 92 00 - Joint Sealants.

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 Clean stone as work progresses.
 - .1 Allow mortar droppings on stone to partially dry then remove by means of brushing with a stiff fibre brush.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
 - .1 At completion wash granite with stiff fibre brushes, soap powder and clean water. Hose down.
- .4 Repeat until stains and surplus materials are completely removed.
- .5 Refer to manufacturer of masonry components before resorting to alternative solutions or methods for stones that are hard to clean.
- .6 Waste Management: separate waste materials for reuse/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 SCHEDULES AND TABLES

- .1 Refer to drawings for identification of stones.

END OF SECTION