

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 04 05 00 – Common work results for masonry
- .2 Masonry connectors and reinforcing – Engineer’s drawings and specifications
- .3 Section 04 05 19.01 – Masonry anchoring and reinforcing
- .4 Section 04 05 23 – Masonry accessories
- .5 Section 04 22 00 – Concrete masonry unit

1.2 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CAN/CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
 - .2 CAN/CSA A179-04, Mortar and Grout for Unit Masonry.
 - .3 CAN/CSA A371-04, Masonry Construction for Buildings.
 - .4 CAN/CSA A3000-08, Cementitious Materials Compendium;
- .2 ASTM International
 - .1 ASTM C207-06, Standard Specification for Hydrated Lime for Masonry Purposes.
 - .2 ASTM C979-05, Standard Specification for Pigments for Integrally colored Concrete.

1.3 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.

1.4 QUALITY ASSURANCE

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
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1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver, store and handles masonry mortar and grout materials in accordance with Section 01 61 00 - Common Product Requirements, supplemented as follows:
 - .1 Deliver pre-packaged, 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
 - .1 Remove for reuse and return of pallets and packaging materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.6 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.

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 or Type 10 gray colour.
 - .2 Masonry Cement: to CAN/CSA-A3002 and CAN/CSA A179.
 - .3 Mortar Cement: to CAN/CSA-A3002 and CAN/CSA A179.
 - .4 Packaged Dry Combined Materials for mortar: to CAN/CSA A179, using gray colour cement.
- .3 Aggregate: supplied by one supplier.
 - .1 Fine Aggregate: to CAN/CSA A179, natural sand.
 - .2 Course Aggregate: to CAN/CSA A179.
- .4 Water: clean and potable, to CAN/CSA A179.
- .5 Lime:
 - .1 Hydrated Lime: to CAN/CSA A179, Type S.

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 must be approved prior to use. Use in accordance with the specific manufacturer's recommendations.
- .2 Powder: inorganic mineral oxide pigment.
- .3 Colour to match adjoining brick

2.3 ADMIXTURES

- .1 Usage of admixture not specified aforementioned is prohibited.

2.4 MORTAR MIXES

- .1 Mortar for exterior masonry above grade:
 - .1 Not used.
- .2 Mortar for interior masonry:
 - .1 Loadbearing and non-loadbearing: Unless otherwise specified by structure, based on type S mortar.
- .3 Parging mortar: type N to CAN/CSA A179, as per paragraph 2.4.1.1.
- .4 Following applies regardless of mortar types and uses specified above:
 - .1 Mortar for grouted reinforced masonry: type based on CSA 179 specifications, Factory mixed.

2.5 MORTAR MIXING

- .1 Use pre-blended, pre-coloured mortar prepackaged under controlled factory conditions.
 - .1 For batch mixer: For water first, the mortar mixes in a clean mixer. After mixing, scrape interior of mixer and restart it for one minute.
- .2 Mix mortar ingredients in accordance with CAN/CSA A179 in quantities needed for immediate use.
- .3 Use mortar within 1-1/2 hour after mixing at temperatures of 25 degrees C and above, or 2-1/2 hours at temperatures under 25 degrees C (CAN/CSA A371).

2.6 GROUT MIXES

- .1 Bond Beams: grout mix 10 to 12.5 MPa strength at 28 days; 200-250 mm slump; premixed in accordance with CAN/CSA A179 grout.
 - .2 Lintels: grout mix 10 to 12.5 MPa strength at 28 days; 200-250 mm slump; accordance with CAN/CSA A179 grout.
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- .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 grout ingredients in quantities needed for immediate use in accordance with CAN/CSA A179 grout.
- .2 Use grout within 1- ½ jour after mixing (CAN/CSA 371).
- .3 Do not use calcium chloride or chloride based admixtures.

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 block 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 total 10 mm thick, where indicated.

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.
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- .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 premix 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 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 recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

3.9 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.

END OF SECTION
