

ITEM 560.2022 11 - GRANITE MASONRY (BY VOLUME)

DESCRIPTION

This work shall consist of furnishing and installing GRANITE MASONRY (BY VOLUME) in accordance with the contract documents and as directed by the Engineer.

MATERIALS

Granite: Granite shall be of type finish and color as indicated on the plans and approved by the Engineer. Each stone type shall be obtained from a single quarry with resources to provide materials of consistent appearance and physical properties, and the capacity to cut, finish and supply granite without delaying the work. Granite shall be of uniform color and tone. Sizes shall be as specified or as shown on the drawings.

Mortar: Type M (ASTM C-270) as specified in subsection masonry mortar 705-21.

Mortar Coloring: Color shall be approved by the Engineer and be a color chosen from one of the following mortar color products meeting the requirements of ASTM C979:

Tru Tone Mortar Colors
As manufactured by
Davis Colors
3700 East Olympic Blvd.
Los Angeles, CA 90023
Phone: 800.356.4848

Sonobrite
As manufactured by
Sonneborn B.P. Div.,
Rexnord Chemical Products, Inc.
2270 NW. 23rd Street
Miami, FL 33142
Phone: 305.634.5546

Lambco Colors
As manufactured by
Lambert Corporation
20 North Coburn Avenue
Orlando FL. 32805
Phone: 407.841.2940

or approved equal as determined by the Engineer.

Portland Cement: Type II as specified in Subsection 705-21. Cement shall be gray unless otherwise indicated in the plans.

Hydrated Lime: ASTM C207, Type SA as specified in Subsection 712-04.

Water: As specified in Subsection 712-01

Mortar Sand: As specified in Subsection 703-03

Grout: Use Fine grout as per ASTM C 476-07. Fine sand used in the grout shall meet all requirements of Subsection 703-04. Grout **shall only be used in specific areas** of granite masonry as indicated on the plans.

Stainless Steel Pins: Dimensions as indicated on the plans and as specified in Subsection 709-13
Stainless Steel Bar reinforcement.

CONSTRUCTION DETAILS

All provisions of Section 560 pertaining to Dimension Stone Construction Details apply along with the following additional requirements:

ITEM 560.2022 11 - GRANITE MASONRY (BY VOLUME)

STONE FABRICATION:

Contractor shall arrange a visit to the quarry to inspect the stone to be used for this job prior to the commencement of any quarrying or fabrication. The cost of this visit shall be borne by the Contractor and shall be included in the bid price for this item.

Beds and Joints: Pieces shall be bedded and jointed as shown in the approved shop drawings, and bed and joint surfaces shall be cut as follows: Bed and joint surfaces shall be sawn through the full thickness of the granite piece. Bed and joint surfaces shall be within +/- 3% of the 90-degrees to the face of the piece.

Radial Profiles: Shall be constant throughout their length, in strict conformity with details shown on approved shop drawings.

Where called for, granite shall be core drilled to the specified dimensions to receive stainless steel pins and paid for under this item.

SHIPPING AND HANDLING:

Granite material must be delivered to the site in an undamaged condition. All granite and related materials must be stored to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breakage, chipping or other causes. Granite shall be stored on wood skids or pallets at least 100mm off the ground, and covered with a non-staining waterproof membrane. Skids and granite must be placed and stacked to distribute weight evenly and to prevent breakage or cracking of granite and allow air circulation around stones. Contractor shall place polyethylene or other suitable plastic film as approved by the Engineer between any wood and finished surfaces and use polyethylene as an overall protective covering. Lifting holes must be plugged to prevent the accumulation of water. Salt shall not be used for melting ice formed in holes or on pieces, or for any purpose that could lead to contact with stone elements.

Pinch or wreaking bars shall not be used. Granite shall be lifted with wide belt-type slings where possible. Wire rope or ropes containing tar or other substances that may cause staining shall not be used. Wood rollers with cushions at the end of the wood slides must be used to move stone.

INSTALLATION:

The Contractor is responsible for ensuring that all sub grades, bases and surfaces to receive granite masonry are clean, level and adequately prepared. The Contractor shall verify finished elevations and field dimensions taken at the job site affecting the work. Where called for, sub base material and granite component shall be core drilled to receive steel pins. Field dimensions, which are at variance with the drawings or specifications, shall be brought to the attention of the Engineer.

Surfaces of granite that have become dirty or stained are to be cleaned, removing all soil, stains and foreign materials, prior to setting. Granite is to be cleaned by thoroughly scrubbing stones with fiber rushes followed by a thorough drenching with clean water. Ferrous or other metallic brushes shall not be used. Only mild cleaning compounds that contain no caustic materials or abrasives are to be used.

ITEM 560.2022 11 - GRANITE MASONRY (BY VOLUME)

Patched, chipped, cracked, broken or otherwise defective pieces shall not be set, and the Engineer shall be notified of any damaged stone.

Contractor shall install mortar and attach granite components as shown on the plans or as directed by the Engineer. Stainless steel pins are to be used to secure granite components where indicated on the plan.

CONSTRUCTION TOLERANCES:

Variation in Plane between Adjacent Stones must not exceed 1mm.

POINTING JOINTS:

No pointing shall take place until all stone has been set and approved by the Engineer. All pointing shall be done with the approved pointing mortar mix. To reduce suction of moisture and control rate of stiffening, stone and bedding mortar shall be dampened before beginning to fill the joint. Free water or excessive dampness in the joint shall be avoided. Mortar must be forced into joints with sufficient pressure to insure joint is well packed, and a tool narrower than the joint width shall be used to pack mortar solidly into the back of joint. When the joint is more than 19mm (3/4") in depth, new mortar shall be placed in several layers. Each preceding layer shall be thumbprint hard before allowing another layer to be placed. Excess mortar must be struck off and mortar droppings must be removed from adjacent surfaces. When the final layer of mortar is thumbprint hard, the joint shall be tooled to a concave finish, to the satisfaction of the Engineer.

PROTECTION:

The top of the granite masonry must be covered with non-staining waterproof sheeting at end of day's work. Partially completed portions shall also be covered when work is not in progress. Contractor must prevent staining of stone from mortar, or other sources.

ADJUSTING AND CLEANING:

Contractor is required to remove and replace granite if broken, chipped, stained, or otherwise damaged. The Contractor may repair stone if Engineer approves the methods and results. Granite masonry with defective joints and joints not matching approved samples and mockups shall be removed and replaced in a manner that results in granite matching approved samples and mockups, complying with other requirements and showing no evidence of replacement.

Final Cleaning: The granite shall be thoroughly cleaned after completion of the setting and other work. The granite shall be gone over and any mortar splashes or smears and any other encrusted matter carefully removed from the surface. The cleaning shall be done with non-ionic detergent and clean water applied vigorously with natural fiber bristle brushes. After cleaning, stone must be drenched with fresh water to remove all residue materials.

SUBMITTALS

Contractor shall submit two (2) cured mortar cakes, one lightly acid etched to replicate accelerated aging and the other untouched, labeled with the formula and pigment used, to be reviewed for color, texture and pattern. Stone samples of each type and finish shall be not less

ITEM 560.2022 11 - GRANITE MASONRY (BY VOLUME)

than 300mm x 300mm x 25 mm thick, and show complete range of color variation for each type. Samples of granite with color variations shall be submitted with proportion of variation expected for use on the Project.

Submit shop drawings for each granite element indicating location and size of each fabricated item to the Engineer for approval. All shop drawings shall include detailed dimensioned plans, sections and elevations, large-scale details, profiles, methods of attachment, carved patterns and other components necessary to complete the work.

METHOD OF MEASUREMENT

This work will be measured as the number of cubic meters of GRANITE MASONRY satisfactorily furnished and installed.

BASIS OF PAYMENT

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work.