

SECTION 123640 - STONE COUNTERTOPS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes stone countertops in Dwelling Units as selected by Owner's Interior Design Consultant.

1.3 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Each variety of stone. Include data on physical properties required by referenced ASTM standards.
 - 2. Stone accessories and other manufactured products.
- B. Shop Drawings: Include plans, sections, details, and attachments to other work.
- C. Samples for Verification:
 - 1. For each stone type indicated, in sets of Samples not less than 12 inches (300 mm) square. Include two or more Samples in each set and show the full range of variations in appearance characteristics expected in completed Work.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator.
- B. Sealant Compatibility Test Report: From sealant manufacturer, complying with requirements in Division 07 Section "Joint Sealants" and indicating that sealants will not stain or damage stone.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For stone countertops to include in maintenance manuals. Include Product Data for stone-care products used or recommended by Installer, and names, addresses, and telephone numbers of local sources for products.

1.6 QUALITY ASSURANCE

- A. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate stone countertops similar to that indicated for this Project and whose products have a record of successful in-service performance.
- B. Installer Qualifications: Fabricator of products.
- C. Source Limitations for Stone: Obtain each variety of stone from a single quarry with resources to provide materials of consistent quality in appearance and physical properties.
 - 1. Obtain each variety of stone from a single quarry, whether specified in this Section or in another Section of the Specifications.
 - 2. Make stone slabs available for Owner to examine for appearance characteristics.
 - a. Owner will select aesthetically acceptable slabs and will indicate aesthetically unacceptable portions of slabs.
 - b. Segregate slabs selected for use on Project and mark backs indicating approval.
 - c. Mark and photograph aesthetically unacceptable portions of slabs as directed by Architect.
- D. Mockup: Build mockup to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockup of typical countertop as shown on Drawings.
 - 2. Approved mockup may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Lift stone with wide-belt slings; do not use wire rope or ropes that might cause staining. Move stone, if required, using dollies with cushioned wood supports.
- B. Store stone on wood A-frames or pallets with nonstaining separators and nonstaining, waterproof covers. Ventilate under covers to prevent condensation.

1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify dimensions of construction to receive stone countertops by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 GRANITE

- A. Granite: Comply with ASTM C 615.

- B. Description: Uniform, medium-grained, stone without veining.
- C. Available Varieties and Sources: Subject to compliance with requirements, stone varieties that may be incorporated into the Work include, but are not limited to, the following:
- D. Variety and Source: Subject to compliance with requirements, provide the following:
 - 1. Stone products selected by Owner as Basis of Design.
- E. Cut stone from contiguous, matched slabs in which natural markings occur.
- F. Finish: Polished and Sealed.
- G. Match Owner's samples for color, finish, and other stone characteristics relating to aesthetic effects.

2.2 ADHESIVES, GROUT, SEALANTS, AND STONE ACCESSORIES

- A. General: Use only adhesives formulated for stone and ceramic tile and recommended by their manufacturer for the application indicated.
- B. Water-Cleanable Epoxy Adhesive: ANSI A118, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24) that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Bonsal, W. R. Company.
 - b. Bonstone Materials Corporation.
 - c. C-Cure.
 - d. Custom Building Products.
 - e. Laticrete International, Inc.
 - f. MAPEI Corp.
 - g. Summitville Tiles, Inc.
- C. Stone Adhesive: Two-part epoxy or polyester adhesive, formulated specifically for bonding stone to stone, with an initial set time of not more than two hours at 70 deg F (21 deg C), and with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24), and that complies with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
 - 1. Color: Clear
 - 2. Products: Subject to compliance with requirements, provide one of the following:

- a. Epoxy Adhesive: Akemi North America; Akepox.
 - b. Epoxy Adhesive: Axson North America, Inc., Wood & Stone Company; Akabond Epoxy.
 - c. Epoxy Adhesive: Bonstone Materials Corporation; Touchstone Ratio Pac Clear Gel Epoxy.
 - d. Epoxy Adhesive: Bonstone Materials Corporation; Touchstone Last Patch.
 - e. Polyester Adhesive: Akemi North America; Platinum Clear Polyester Adhesive.
 - f. Polyester Adhesive: Axson North America, Inc., Wood & Stone Company; Wood & Stone Polyester.
 - g. Polyester Adhesive: Bonstone Materials Corporation; Gripstone L-200KG.
- D. Sealant for Countertops: Manufacturer's standard sealant of characteristics indicated below that complies with applicable requirements in Division 07 Section "Joint Sealants" and will not stain the stone it is applied to.
- E. Stone Cleaner: Cleaner specifically formulated for stone types, finishes, and applications indicated, as recommended by stone producer and, if a sealer is specified, by sealer manufacturer. Do not use cleaning compounds containing acids, caustics, harsh fillers, or abrasives.
- F. Stone Sealer: Colorless, stain-resistant sealer that does not affect color or physical properties of stone surfaces, as recommended by stone producer for application indicated.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- a. Bostik Findley Inc.
 - b. Custom Building Products.
 - c. Hillyard, Inc.
 - d. HMK Stone Care System.
 - e. Miracle Sealants Company.
 - f. Stone Care International Inc.
 - g. Summitville Tiles, Inc.
 - h. Arizona Tile, Inc.

2.3 STONE FABRICATION, GENERAL

- A. Select stone for intended use to prevent fabricated units from containing cracks, seams, and starts that could impair structural integrity or function.
1. Repairs that are characteristic of the varieties specified are acceptable provided they do not impair structural integrity or function and are not aesthetically unpleasing, as judged by Architect.
- B. Grade and mark stone for final locations to produce assembled countertop units with an overall uniform appearance.

- C. Fabricate stone countertops in sizes and shapes required to comply with requirements indicated, including details on Drawings and Shop Drawings.
 - 1. For granite, comply with recommendations in NBGQA's "Specifications for Architectural Granite."
 - 2. Clean sawed backs of stones to remove rust stains and iron particles.
 - 3. Dress joints straight and at right angle to face, unless otherwise indicated.
 - 4. Cut and drill sinkages and holes in stone for anchors, supports, and attachments.
 - 5. Provide openings, reveals, and similar features as needed to accommodate adjacent work.
 - 6. Fabricate molded edges with machines having abrasive shaping wheels made to reverse contour of edge profile to produce uniform shape throughout entire length of edge and with precisely formed arris slightly eased to prevent snipping, and matched at joints between units. Form corners of molded edges as indicated with outside corners slightly eased, unless otherwise indicated.
 - 7. Finish exposed faces of stone to comply with requirements indicated for finish of each type of stone required and to match approved Samples and mockups. Provide matching finish on exposed edges of countertops, splashes, and cutouts.
- D. Carefully inspect finished stone units at fabrication plant for compliance with requirements for appearance, material, and fabrication. Replace defective units.

2.4 STONE COUNTERTOPS

- A. General: Comply with recommendations in MIA's "Dimension Stone - Design Manual."
- B. Nominal Thickness: Provide thickness indicated, but not less than 3/4 inch (20 mm). Gage backs to provide units of identical thickness.
- C. Edge Detail: 3/4-inch (20-mm) eased edge as accepted by Owner.
- D. Joints: Fabricate countertops without joints unless joint plan is approved by Owner.
- E. Joints: Fabricate countertops in sections for joining in field, with joints at locations indicated on accepted shop drawings and as follows:
 - 1. Bonded Joints: 1/32 inch (0.8 mm) or less in width.
 - 2. Sealant-Filled Joints: 1/16 inch (1.5 mm) in width.
- F. Cutouts and Holes:
 - 1. Counter-Mounted Fixtures: Prepare countertops in shop for field cutting openings for counter-mounted fixtures. Mark tops for cutouts and drill holes at corners of cutout locations. Make corner holes of largest radius practical.
 - 2. Fittings: Drill countertops in shop for plumbing fittings and similar items.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates indicated to receive stone countertops and conditions under which stone countertops will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of stone countertops.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Advise installers of other work about specific requirements for placement of inserts and similar items to be used by stone countertop Installer for anchoring stone countertops. Furnish installers of other work with Drawings or templates showing locations of these items.
- B. Clean dirty or stained stone surfaces by removing soil, stains, and foreign materials before setting. Clean stone by thoroughly scrubbing with fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives. Allow stone to dry before installing.

3.3 CONSTRUCTION TOLERANCES

- A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/16 inch in 48 inches (1.5 mm in 1200 mm).
- B. Variation from Level: Do not exceed 1/8 inch in 96 inches (3 mm in 2400 mm), 1/4 inch (6 mm) maximum.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/4 of nominal joint width.
- D. Variation in Plane at Joints (Lipping): Do not exceed 1/64-inch (0.4-mm) difference between planes of adjacent units.
- E. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64-inch (0.4-mm) difference between edges of adjacent units, where edge line continues across joint.

3.4 INSTALLATION OF COUNTERTOPS

- A. General: Install countertops over plywood subtops with full spread of water-cleanable epoxy adhesive.
- B. Do not cut stone in field, unless otherwise indicated. If stone countertops or splashes require additional fabrication not specified to be performed at Project site, return to fabrication shop for adjustment.

- C. Do necessary field cutting as stone is set. Use power saws with diamond blades to cut stone. Cut lines straight, true, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
- D. Set stone to comply with requirements indicated on accepted Shop Drawings. Shim and adjust stone to locations indicated, with uniform joints of widths indicated and with edges and faces aligned according to established relationships and indicated tolerances. Install anchors and other attachments indicated or necessary to secure stone countertops in place.
- E. Bond joints with stone adhesive and draw tight as countertops are set. Mask areas of countertops adjacent to joints to prevent adhesive smears.
- F. Space joints with 1/16-inch (1.5-mm) gap for filling with sealant. Use temporary shims to ensure uniform spacing.
 - 1. Clamp units to temporary bracing, supports, or each other to ensure that countertops are properly aligned and joints are of specified width.
- G. Complete cutouts not finished in shop. Mask areas of countertops adjacent to cutouts to prevent damage while cutting. Use power saws with diamond blades to cut stone. Make cutouts to accurately fit items to be installed, and at right angles to finished surfaces unless beveling is required for clearance. Ease edges slightly to prevent snipping.
- H. Install backsplash and end splash by adhering to wall with water-cleanable epoxy adhesive. Leave 1/16-inch (1.5-mm) gap between countertop and splash for filling with sealant. Use temporary shims to ensure uniform spacing.
- I. Apply sealant to joints and gaps specified for filling with sealant; comply with Division 07 Section "Joint Sealants." Remove temporary shims before applying sealant.

3.5 ADJUSTING AND CLEANING

- A. In-Progress Cleaning: Clean countertops as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.
- B. Remove and replace stone countertops of the following description:
 - 1. Broken, chipped, stained, or otherwise damaged stone. Stone may be repaired if methods and results are approved by Owner.
 - 2. Defective countertops.
 - 3. Defective joints, including misaligned joints.
 - 4. Interior stone countertops and joints not matching approved Samples and mockups.
 - 5. Interior stone countertops not complying with other requirements indicated.
- C. Replace in a manner that results in stone countertops matching approved Samples and mockups, complying with other requirements, and showing no evidence of replacement.
- D. Clean stone countertops not less than six days after completion of installation, using clean water and soft rags. Do not use wire brushes, acid-type cleaning agents, cleaning compounds with caustic or harsh fillers, or other materials or methods that could damage stone.

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PERMIT REVIEW SET

- E. Sealer Application: Apply stone sealer to comply with stone producer's and sealer manufacturer's written instructions.

END OF SECTION 123640