

Guide Specification

Element Stone is a quartz-based, fabricated stone which can be used for attractive and functional countertops, shower and tub surrounds, interior wall cladding, and other interior applications. Compared to natural stone surfacing, Element Stone offers many attractive advantages including greater strength, wear resistance, ease of handling, and a unique aesthetic character. Edit this Guide Specification according to project requirements. Samples, product literature, and design assistance are available by contacting Element Surfaces at 855-(QZ~~N~~WOOD)796-9663 or by visiting www.elementsurfaces.net. Since fabrication and installation of Element is similar to that of natural stone, publications such as the Marble Institute of America's **Dimensional Stone Design Manual** can also be consulted.

SECTION 06 61 19 – QUARTZ SURFACING FABRICATIONS
SECTION 12 36 61 – QUARTZ SURFACING COUNTERTOPS

PART 1 – GENERAL

1.0 Related Documents

Drawings and general provisions of the contract, including general and supplementary conditions and Division 1 Specification Sections, apply to this section.

1.01 Summary

- A. Section Includes: [Quartz surfacing] [Engineered stone] [Stone] for
1. Countertops
 2. Interior [wainscots] [and] [wall cladding]
 3. [Shower] [and] [bath] enclosures
 4. Window Sills
 5. Vanity Tops
 6. Table Tops
 7. Bar tops
 8. Seating
 9. Cold Cafeteria Surfaces
 10. Interior Steps
 11. Hot Cafeteria Surfaces
 12. Reception Areas
 13. Nurses' Stations
 14. [_____]

15. Other interior applications as shown on drawings

B. Related Sections

1. Division 1 – Administrative, Procedural and Temporary Work Requirement
2. Division 1 – “LEED Requirements” for Additional LEED Requirements
3. Division 5 – Section Metal Fabrication for Blocking
4. Division 6 – Section Rough Carpentry for Blocking
5. Division 7 – Section Joint Sealers
6. Division 9 – Section Solid Surface Wall Cladding
7. Division 9 – Section Quartz Surface Wall Cladding
8. Division 10 – Quartz Surface Toilet Partitions
9. Division 15 – Plumbing Fixtures
10. Division 16 – Wiring Devices

Templates showing cutouts required for installation of items installed on or penetrating through quartz surfacing shall be provided under Sections where items are specified.

[Indicate if [sink] [and] [lavatory] cutouts are for top mount or under cabinet installation.]

C. Alternates: Refer to Division 1 Section “Alternates” for description of work in this section affected by alternates.

1.02 References

A. ASTM International

1. ASTM C97 – Absorption and Bulk Specific Gravity of Dimensional Stone
2. ASTM C99 – Modulus of Rupture of Dimensional Stone
3. ASTM C170 – Compressive Strength of Dimensional Stone
4. ASTM C217 – Weather Resistance of Slate
5. ASTM C482 – Bond Strength of Ceramic Tile to Portland Cement
6. ASTM C484 – Thermal Shock Resistance of Glazed Ceramic Tile
7. ASTM C501 – Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser
8. ASTM C531 – Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
9. ASTM C880 – Flexural Strength of Dimensional Stone
10. ASTM C1026 – Resistance of Ceramic Tile to Freeze-Thaw Cycling
11. ASTM C1028 – Static Coefficient of Friction of Ceramic Tile and Other like Surfaces by the Horizontal Dynamometer Pull-Meter Method
12. ASTM C1243 – Relative Resistance to Deep Abrasive Wear of Unglazed Ceramic Tile by Rotating Disc
13. ASTM D256 – Izod Pendulum Impact Resistance of Plastics
14. ASTM D2047 – Static Coefficient of Friction of Polish-Coated Floor Surfaces by the James Machine
15. ASTM E84 – Surface Burning Characteristics of Building Materials

- B. American National Standards Institute (ANSI)
 - 1. ANSI Z124.6 – Stain Resistance
 - 2. ANSI/N 42.14 – Radiation
- C. National Electrical Manufacturers Association (NEMA)
 - 1. NEMA LD3-3.5 – Boiling Water Resistance
 - 2. NEMA LD 3-3.6 – High Temperature Resistance
- D. European Standards (EN)
 - 1. EN 14617-1 – Determination of Apparent Density and Water Absorption
 - 2. EN 14617-4 – Determination of Abrasion Resistance
 - 3. EN 14617-5 – Determination of Freeze/Thaw Resistance
 - 4. EN 14617-9 – Determination of Impact Resistance
 - 5. EN 14617-12 – Determination of Dimensional Stability
 - 6. EN 14617-13 – Determination of Electrical Resistivity
 - 7. EN 14617-15 – Determination of Compressive Strength
- E. Others
 - 1. NSF – ANSI/NSF Standard 51
 - 2. GREENGUARD

1.03 Submittals

- A. Product Data
 - 1. Quartz Surfacing: Submit manufacturer's product data, [sample warranty form,] and fabrication and installation instructions.
 - 2. Accessories: Submit manufacturer's product data and installation instructions.
- B. Shop Drawings: Identify color[s] and finish[es], and show the following:
 - 1. Field-verified dimensions
 - 2. Quartz surfacing dimensions
 - 3. Locations and dimensions of cutouts
 - 4. Required locations of support and blocking members
 - 5. Edge profiles
 - 6. Installation details and methods
- C. Samples
 - 1. Cut sample and seam together for representation of seaming techniques.
 - 2. Indicate full range of color and pattern variation.
 - 3. [Samples for Color Selection: Submit [two] [_____] sets of manufacturer's standard colors and finishes.]
 - 4. Samples for Color Approval: Submit [two] [_____] samples, 2 x 4 inches, (50 x 1000mm) of [each] color and finish selected.

5. Stone Adhesive: Submit [two] [_____] samples of an adhesive joint for [each] color quartz surfacing selected. Show color match of adhesive.
- D. Fabricator Qualifications: Submit evidence of fabricator's qualifications.
- E. Closeout Submittals: Submit completed warranty form.
- F. LEED Submittals: Provide LEED submittals as required.
- G. Product Certificates: For each type of product, provide product certificates signed by product manufacturer.
- H. Maintenance Data
 1. Submit manufacturer's care and maintenance data.
 2. Include in project closeout documents.

1.04 Quality Assurance

- A. Applicable Standards
 1. Standards of the following, as referenced herein:
 - a. American National Standards Institute (ANSI)
 - b. American Society for Testing and Materials (ASTM)
 - c. National Electrical Manufacturers Association (NEMA)
 - d. NSF International
 2. Fire Test response characteristics
 - a. Provide with the following Class A (Class 1) surface burning characteristics as evidenced by testing identical products against ASTM E84 (UL 723) or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - b. Flame Spread Index: 25 or less
 - c. Smoke Developed Index: 450 or less
- B. Allowable Tolerances
 1. Variation in component size $\pm 1/8"$ (3mm) over a ten (10) foot length
 2. Location of openings: $\pm 1/8"$ (3mm) from indicated location
 3. Maximum $1/8"$ (3mm) clearance between quartz surfaces and each wall

1.05 Delivery, Storage, and Handling

- A. Packaging, Shipping, Handling, and Unloading
 1. Observe manufacturer's recommendations and handle accordingly in order to prevent breakage or damage.
 2. Brace parts if necessary.
 3. Transport in the near-vertical position with finished face turned toward finished face.
 4. Do not allow finished surfaces to rub during shipping or handling.

- B. Storage and Protection
 - 1. Store in racks in near-vertical position.
 - 2. Prevent warpage and breakage.
 - 3. Store inside away from direct exposure to sun.
 - 4. Store between 25°F and 130°F (-4 °C and 54°C).
 - 5. Store with finished face turned toward finished face.

1.06 Warranty

- A. Commercial: Provide manufacturer's 10 year Limited Commercial Warranty against product defects when fabricated and installed by a Element Stone qualified fabricator.
- B. Residential: Provide manufacturer's Limited Lifetime Residential Warranty against product defects when fabricated and installed by an Element Stone qualified fabricator.

PART 2 – PRODUCT

2.01 Manufacturers

- A. Acceptable Manufacturer: Provide Element Stone distributed by Element Surfaces;
www.elementsurfaces.net
- B. Substitutions:

2.02 Quartz Surfacing

- A. Composition: 90% + percent crushed quartz aggregate combined with resins and pigments and fabricated into slabs using a vacuum vibro-compaction process.

Due to its superior flexural strength compared to natural stone, Element can be fabricated in larger sized pieces. This may reduce the number of joints in an installation, which is more economical and may produce a better-looking end result. It may also allow the use of thinner material, producing additional economies and weight reductions.

Thickness: 3/4" (2 cm) is the minimum recommended for countertops; use 1-1/4" (3 cm) material when greater strength or thicker edges are required.

- B. Dimensions
 - 1. Thickness: Nominal [3/4 inch (20 mm)] [1-1/4 inches (30 mm)] [As shown on drawings.]
 - 2. Size: Slabs shall be not less than [127x64 inches] to minimize the number of joints used in installation.

C. Identification: Material shall be labeled with slab information and imprinted with a manufacturer’s identifying mark on the back.

D. Manufacturer’s Performance Data

PRODUCT TEST	TYPICAL RESULT	REFERENCE
Slab Size	63”x 120” or 63” x 126”	
Thickness & Weight	2cm-498/538lbs 3cm-800/839lbs	
Gloss	47% minimum	
Mohs Scale of Hardness	6-7	
Density	2.4g/cm ³	ASTM C-97
Water Absorption	<0.03%	ASTM C-97
Abrasion Resistance	208	ASTM C-501
Flexural Strength	>5,300 psi	ASTM D-790
Impact Resistance	0.35 ft-lb/inch	ASTM D-256
Compressive Strength	24,000-27,500	ASTM C-170
Freeze-Thaw Resistance	No effect – 15 cycles	ASTM C-1026
Coefficient of Friction	Dry- 0.84/Wet- 0.6	ASTM C-1028
Stain Resistance	Pass	ANSI Z 124.6
Chemical Resistance	Pass	ANSI Z 124.6
Cigarette Test	Pass	ANSI Z 124.6
Surface Burning	Class A	ASTM E-84
Fungal/Bacteria Resistance	No Growth	ASTM G-21
Hi Temperature Resistance	Pass	NEMA LD3-3.6

E. Color and Finish

Polished: Element Stone - 24 stocked colors.

Custom Colors / Finishes: Available on orders of 4,500 sq. ft. or more. Extended lead times are required.

Edit the following according to color selection method and coordinate with submittals.

1. Provide color[s] and [finish [es] selected by [architect] [_____] from manufacturer's stocked standards. [Allow for selection of up to [two] [four] [_____] colors.]
2. Provide custom color and finish to match [sample in [architect's] [_____] office.] [_____.]
3. Provide [Element Stone] [_____, Color No. _____] with [polished] finish.
4. Finish
 - a. Polished surface shall have gloss greater than or equal to 35% at 50°.

F. Exposed Edges [and Corners]

1. Countertops
 - a. Edges: [Square] [Bullnose] [Beveled] [Waterfall] [_____] profile, [single] [double] layer thick
 - b. Outside Corners: [Square] [[3/4 inch (20 mm)] [_____ inch [es] (_____ mm)] radius]
2. [Backsplash] [and] [Wall Cladding]
 - a. Edges: [Square] [_____]
 - b. Outside Corners: [Square butt joints] [_____]

2.03 Accessories

A. Mounting Adhesives

1. Provide structural-grade silicone or epoxy adhesives as recommended by manufacturer for application and per conditions of use.
2. Acceptable Silicone Manufacturers
 - a. Dow Corning®
 - b. GE Sealants and Adhesives
 - c. [_____]
3. Acceptable Epoxy Manufacturers
 - a. Akemi North America
 - b. Bonstone Materials Corporation
 - c. Tenax U.S.A.
 - d. [_____]
4. Provide spacers, if required, of type recommended by adhesive manufacturer.

B. Stone Adhesive

1. Provide epoxy or polyester adhesive of type recommend by manufacturer for application and conditions of use.
2. Acceptable Manufacturers
 - a. Akemi North America
 - b. Bonstone Materials Corporation
 - c. Tenax U.S.A.
 - d. [_____]

3. Color: Adhesive that will be visible in finished work should be tinted to match quartz surfacing.

In most interior cladding applications, Element Stone can be installed with structural adhesive. Where required, however, Element Stone can also be set in grout or installed with ties, clips, or other types of hardware recommended for thin stone veneers. Edit below and coordinate Section as required.

C. [Fasteners] [Grout] [Hardware]: [_____]

D. Joint Sealants

1. Clear silicone sealant as recommended by manufacturer for application and per conditions of use.
 2. Provide anti-bacterial type in [[toilet] [and] [bath] rooms,] [food preparation areas,] [and] [_____].
 3. Acceptable Manufacturers:
 - a. Dow Corning®
 - b. GE Sealants and Adhesives
 - c. [_____]
- E. Solvent: Product recommended by adhesive manufacturer to clean surface of quartz surfacing to assure adhesion of adhesives [and sealants].
- F. Cleaning Agents: Non-abrasive, low pH cleansers.

2.04 Fabrication

- A. Fabricator: Firm shall have five years' experience fabricating architectural stone and shall have water-cooled cutting tools. [Firm shall be authorized in writing by manufacturer.]
- B. Shop Assembly: Observe proper safety procedures and comply with manufacturer's instructions.
- C. Layout: Layout joints [as shown on drawings.] [to minimize joints and to avoid L-shaped pieces of quartz surfacing.]
- D. Inspect Material
1. Inspect material for defects prior to fabrication.
 2. Color Match
 - a. Materials used throughout the project shall be from the same batch and bear labels with the same batch numbers.
 - b. Visually inspect materials to be used for adjacent pieces to ensure acceptable color match.
 - c. Inspect in lighting conditions similar to those existing at the jobsite.
 3. Variation in distribution of aggregates in quartz surfacing that is within manufacturer's tolerances is not a defect.
- E. Tools: Cut and polish with water-cooled power tools.

F. Cutouts

As with any type of stone, smaller radii increase potential for crack propagation at inside corners; in no case should radius less than 3/8 inch be used.

1. Cutouts shall have [3/8 inches (10 mm)] [____ inches (____ mm)] minimum inside corner radius. Inside corners shall be reinforced in an acceptable manner to prevent cracking.
2. Polish edges where they will be exposed in finished work.

The following is recommended in areas subject to heavy usage or where additional strength is justified:

3. [If the remaining material outside a cutout is less than [three inches (76 mm)] [____] inches (____ mm)] wide, reinforce area by laminating it with a strip of quartz surfacing.]

G. Laminations: Laminate layers of quartz surfacing as required to create built-up [edges,] [trim,] [and other areas requiring additional thickness].

PART 3 – EXECUTION

3.01 Acceptable Installer

Installer: Firm shall have five years' experience installing architectural stone.

3.02 Examination

A. Site Verification

1. Verify dimensions by field measurements prior to fabrication.
2. Verify that substrates supporting quartz surfaces are plumb, level, and flat to within 1/16 inch in ten feet (1.6 mm in 3000 mm), and that necessary supports and blocking are in place.
3. [Base Cabinets: Cabinet units shall be securely fixed to adjoining units and back wall.]

B. Materials Review

1. Inspect finished surfaces for damage.
2. Do not install until damaged materials have been repaired or replaced in an acceptable manner.

3.03 Preparation

A. General

1. Protect finished surfaces against scratches.
2. Apply masking where necessary.
3. Guard against grit, dust, and other potentially abrasive dirt or residue.

Retain the following if quartz surfacing is to be installed on existing countertops or walls.

B. Remodeling

1. Where necessary, remove existing [countertops] [and] [materials to be demolished] in accordance with [Section 02 42 00 – Removal and Salvage of Construction Materials] [_____].
2. Verify that remaining construction is of sufficient strength and tolerances to support quartz surfacing, and make necessary repairs.
3. [Disconnect utilities as specified in other sections.]

3.04 Installation

A. General

1. Install materials in accordance to manufacturer's recommendations.
2. Lift and place carefully to avoid breakage.

B. Preliminary Installation and Adjustment

1. Position materials to verify correct sizing and preparation.
2. Make necessary adjustments.
3. If cutting, grinding, or polishing is required at the jobsite, use water-cooled tools.
4. Protect jobsite and surfaces against dust and water.
5. Perform work away from installation site, if possible.
6. Gypsum drywall back walls [which are not [fire] [or] [acoustically] [rated] may be routed up to half the thickness of the drywall to allow the countertop to fit.
7. Allow gaps for expansion of not less than 1/16 inch (1.5 mm) per five feet when installed between walls or other fixed conditions.
8. [Drainage: [Adjacent to sinks] [and] [where drainage is required], shim countertops slightly to ensure positive drainage.]

C. Permanent Installation

1. After verifying fit:
 - a. Remove quartz surfacing from position.
 - b. Clean substrates of dust and contamination.
 - c. Clean quartz surfacing back side and joints with solvent.
2. Apply sufficient quantity of mounting adhesive in accordance with adhesive manufacturer's recommendations to provide permanent, secure installation.
3. Spacing of mounting adhesive shall not exceed:
 - a. Horizontal surfaces: [_____] inches ([_____] mm) on center
 - b. Vertical surfaces: [_____] inches ([_____] mm) on center; provide temporary shims until adhesive cures
4. [Fasteners] [Grout] [Hardware]: [_____]

5. Install surfacing plumb, level, and square and flat to within 1/16 inch in ten feet (1.6mm in 3000 mm).

D. Joints

1. Joints between adjacent pieces of quartz surfacing
 - a. Joints shall be flush, tight fitting, level, and neat.
 - b. Securely join with stone adhesive.
 - c. Fill joints level with quartz surfacing.
 - d. Clamp or brace quartz surfacing in position until adhesive sets.
2. Joints [between backsplashes and countertops] [and] [around [tub] [and] [shower] enclosures]: Seal joints with silicone sealant.

3.05 Repair

Repair or replace damaged materials in a satisfactory manner.

3.06 Cleaning

Remove masking and excess adhesives and sealants. Clean exposed surfaces.

3.07 Protection

Protect surfacing from damage by other Sections.

Use below if drawings do not adequately specify scope of work or locations of Element Stone products.
The following are examples only.

3.08 Schedules

A. Toilet Rooms: Rooms 102 and 103

1. Countertops
 - a. Element Stone, Color EQ10, Whitehaven
 - b. 1 1/4" thick
 - c. Waterfall front edge
2. Wainscot
 - a. Element Stone, Color EQ109, Cobblestone
 - b. 1 1/4" thick
 - c. Square top edge and butt joint corner

B. Lobby: Room 101

1. Reception Desk
 - a. Countertops
 - i. Element Stone, Color EQ105, Torano, polished finish
 - ii. 1 1/4" thick
 - iii. Bull nosed exposed edges

- b. Vertical Cladding
 - i. Element Stone, Color EQ106, Ranier, polished finish
 - ii. 1 1/4" thick
 - iii. Quirk joints
- 2. Wall Behind Desk:
 - a. Element Stone, Color EQ104 Sterling
 - b. 1 1/4" thick
 - c. See drawings for edge trim and sandblasted graphics

END OF SECTION

© 2017, Element Surfaces. Qualified design and construction professionals may copy this document for the purpose of creating construction specifications or purchase orders for materials manufactured by Element Surfaces.