DIRESCO

DISCOVER THE BEAUTY OF NATURE
DISCOVER DIRESCO

GUIDE SPECIFICATION

LEADER IN BIO-UV TECHNOLOGY

GUIDE SPECIFICATION

Diresco is a quartz-composite engineered stone that is suitable for virtually any interior and exterior surfacing application. Diresco can be used for kitchen countertops, bathroom vanities, bar tops, wall cladding, shower and tub surrounds, and a variety of other indoor and exterior surfacing. Diresco BIO-UV quartz provides significant advantages over many natural stones including greater strength, stain resistance, scratch resistance, UV resistance and consistency of colors and textures.

Edit this Guide Specification according to project requirements. Samples, product literature, and design assistance are available by contacting Diresco at 949-229-0959 or by visiting www.DirescoUSA.com. Since fabrication and installation of Diresco are similar to that of natural stone, publications such as the Marble Institute of America's Dimension 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.

1.1 Summary

A. Section includes quartz surfacing (engineered stone) for:

1. Countertops
2. Vanity Tops
3. Tabletops
4. Bar tops
5. Windowsills
6. Wainscoting and Wall Cladding
7. Shower and bath enclosures
8. Shower Dams and pans
9. Reception areas
10. Cold Food Service Surfaces
11. Interior Stairtreds
12. Hot Food Service Surfaces
13. Back Splashes and Endsplashes
14. [_____]
15. Other interior applications as depicted in drawings.

B. Related Sections

1. Division 1 Administrative, procedural and temporary work requirements.
2. Division 5 Section Metal Fabrication for blocking
3. Division 6 Section Rough Carpentry for blocking
4. Division 6 Section Solid Surface Fabrications
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 Section Quartz Surface Toilet Partitions
9. Division 15 Section Plumbing Fixtures
10. Division 16 Section Wiring Devices

1.2 References

A. ASTM International

1. ASTM C97 – Absorption and Bulk Specific Gravity of Dimension Stone
2. ASTM C99 – Modulus of Rupture of Dimension Stone
3. ASTM C170 – Compressive Strength of Dimension 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 Dimension 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 D2047 – Static Coefficient of Friction of Polish-Coated Floor Surfaces the by James Machine

B. American National Standards Institute (ANSI)

1. ANSI Z124.6 – Stain Resistance

C. 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

D. ISO (International Organization for Standardization)

1. ISO 9001 – Quality Assurance Customer Expectations / Customer Satisfaction
2. ISO 14001 – Environmental Management Systems

E. Others

1. NSF – ANSI/NSF Standard 51
2. Greenguard – Greenguard Gold
3. Kosher

1.3 Submittals

A. Product Data

1. Quartz Surfacing; Submit manufacturer's product data.
2. Accessories; Submit manufacturer's product data and installation instructions.

B. Drawings

1. Field verified dimensions
2. Locations and dimensions of cutouts
3. Locations of required support and seams
4. Edge profiles.
5. Additional installation details and methods.
6. Quartz surfacing dimensions

C. Samples

1. Submit two sets of manufacturer's color samples for color selection.
2. Submit two (4.75"x4.75") of each color and/or finish selected for color/finish approval.
3. Adhesive: Submit two samples of an adhesive joint for each color of quartz surfacing selected. Show color match of adhesive.

D. Fabricator Qualifications

1. Work of this section shall be performed by a fabricator and/or installer approved by the manufacturer.

E. Maintenance Data

1. Submit manufacturer's care and maintenance

1.4 Quality Assurance

A. Applicable Standards

1. Intertek
2. NSF International
3. International Organization for Standardization (ISO)

1.5 Delivery, Storage and Handling

A. Delivery and Handling

1. Observe manufacturer's recommendations and handle accordingly in order to prevent damage or breakage.
2. Brace parts as necessary.
3. Transport in a near vertical position with finished face positioned towards finished face.
4. Do not allow finished faces to rub during transportation or handling.

B. Storage and Protection

1. Store in racks in near vertical position.
2. Prevent warping and breakage.
3. Store indoors and away from direct sun exposure.
4. Store between 25°F and 130°F.
5. Store with finished face towards finished face.

1.6 Warranty

A. Commercial: Provide manufacturer's Commercial 10 year Limited Warranty. Warranty against manufacturer defects when fabricated and installed by a manufacturer certified fabricator/installer.

B. Residential: Provide manufacturer's Residential 10 year Limited Warranty. Warranty against manufacturer defects when fabricated and installed by a manufacturer certified fabricator/installer.

Part 2 – Products

2.0 Manufacurer

A. Acceptable Manufacturer: Diresco BIO-UV Quartz Surfacing www.DirescoUSA.com

B. Qualifications: Manufacturer shall be ISO 9001:2008 and ISO 14001 certified, and incorporate BIO-UV Resin in manufacturing process.

C. Substitutions: None accepted

2.1 Materials

A. Quartz Surfacing

1. Material must be homogenous in nature containing approx. 93% crushed quartz combined with high quality BIO-UV resin and pigments to form slabs using Bretonstone® technology.

B. Dimensions

1. Slabs shall be 127" x 63", guaranteed usable surface area of 125" x 61".

C. Thickness

1. 1.2 cm
2. 2 cm
3. 3 cm

D. Material Identification

1. All slabs shall be identifiable by manufacturer's markings on the back side of the slab, all slabs shall include slab number, color, material finish, production batch, date, and quality grade.

E. Color and Finish

1. Polished: 29 stocked colors
2. Honed: 31 stocked colors
3. Anticato:10 stocked colors

F. Material Performance Characteristics

TEST PERFORMED	RESULTS					STANDARD
PRODUCT GROUP	**GR 1**	**GR 2**	**GR 3**	**GR 4**	**GR 5**	
Max. dimensions of aggregates (mm)	0.3	0.6	1.2	2.5	4.0	
PHYSICAL PROPERTIES						
Apparent Density (kg/liter or ton/m³)	2.3	2.4	2.4	2.4	2.4	EN-14617-1
Water Absorption (% in weight)	0.021	0.022	0.023	0.027	0.028	EN-14617-1
Flexural Modus (N/mm² or MPa)	32,500	32,500	32,500	32,500	32,500	DIN EN ISO 178
Dimensional Stability	Class A					EN-14617-12
Electrical Resistivity (Ω.m) **Surface Resistivity** **Volume Resistivity**	5.0....13.0 * 10^{12} 5.0....10.0 * 10^{12}					EN-14617-13
DURABILITY						
Compressive Strength (N/mm² or MPa)	247	239	215	212	209	EN-14617-15
Flexural Strength 20°C (N/mm² or MPa)	74	60	57	54	50	EN-14617-2
Impact Resistance (Joule)	9.0	7.0	5.5	3.0	3.0	EN-14617-9
Resistance to Deep Abrasion (mm)	30	29	28.5	27.5	27	EN-14617-4
Freeze – Thaw Resistance (KM_{f25})	0.99	0.99	0.99	0.98	0.98	EN-14617-5
Moh's Hardness	5-7					EN 101
THERMAL PROPERTIES						
Thermal Shock **Flexural Resistance (AR %)** **Loss in Weight** (∆m %)	0.0 0.0					EN-14617-6
Linear Thermal Expansion (m/m°K)	19.5 10^{-6}	19.0 10^{-6}	18.5 10^{-6}	18.0 10^{-6}	17.5 10^{-6}	EN-14617-11
Thermal Conductivity (W/m °K)	1.3					EN-12664
Heat Capacity (J / gr °K)	0.88					
Heath Deflection Temp. (°C)	120					
Wet Heat Resistance (80°C) **Polished Finish** **Velvet Finish**	Rating 4 Rating 4					EN 12721
Dry Heat Resistance **Polished Finish** **Velvet Finish**	Rating 3 Rating 5					EN 438-2, method 16

TEST PERFORMED	RESULTS					STANDARD
UV-RESISTANCE						
Weathering			√			ISO 4892-2,method A, cycle 1 color :ASTM E1347 gloss: ISO 2813 (60°)
SAFETY						
Fire Classification	Class A2 – s1, d0					EN-13501 – 1:2007 – TAB 1
Classes of Reaction to Fire for Floorings	Class $A2_{fl}$ – s1					EN-13501 – 1:2007 – TAB 2
STAIN & CHEMICAL RESISTANCE						
Chemical Resistance	Class C4					EN-14617-10

Ref: Group Classifications

GR 1- Pure White, Premium Cotton Beige, Supreme White, Venato Cotone, Venato Supremo

GR 2 - Premium Cobalt Grey, Premium Cuba Brown, Premium Dolphin Grey, Venato Cubano, Venato Delfino

GR 3 - Beach Black, Beach Dark Grey, Beach Medium Grey, Beach Taupe, Beach White, Belgian Blue, Belgian Buxy, Belgian Desert, Belgian Earth, Belgian Fog, Belgian Sand, Belgian Soil, Belgian Storm, Beton Light, Beton Dark, Divinity Black, Divinity Crema, Divinity Ivory, Divinity White

GR 4 -Beach Iceberg

GR 5 - Beach Crema

G. Exposed Edges (Corners)
1. Countertop edge detail: [_____]
2. Backsplash edge detail: [_____]
3. Other application edge detail(s): [_____]

2.2 Accessories

A. Mounting Adhesives
1. Provide structural grade silicone or epoxy adhesive.
2. Acceptable silicone manufacturers.
    a. As specified [_____].
3. Acceptable Epoxy manufacturers
    a. Tenax U.S.A
    b. Akemi North America
    c. Bonstone Material Corp.
    d. As specified [_____].

B. Quartz Surface Adhesive
1. Provide epoxy or polyester adhesive as recommended by manufacturer for application and conditions of use.
2. Acceptable manufacturers
    a. Tenax U.S.A.
    b. Akemi North America
    c. Bonstone Materials Corp.
    d. As specified [_____].

3. Color: Adhesives shall be tinted to match quartz surfacing for all visible finished work.

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

D. Joint Sealant

1. Clear silicone sealant as recommended by manufacturer for application and for conditions of use.
2. Provide anti-bacterial type in toilet, bath, food preparation areas, and [_____].

E. Solvent: Product as recommended by adhesive manufacturer to clean surface of quartz surfacing to assure adhesion.

F. Cleaning Agents: Non Abrasive, low pH cleanser.

2.3 Fabrication

A. Fabricator: Firm shall be certified by Diresco and have the ability to present written proof of such certification upon request.

B. Shop Assembly: Comply with Diresco instruction.

C. Layout: Layout surfaces (as shown in drawings) to minimize joints and avoid L-shaped pieces of quartz surfacing.

D. Inspection of Material

1. Inspect material for any defects prior to fabrication.
2. Visually inspect material to be used in adjacent pieces to ensure acceptable color match.
3. Material to be used in adjacent pieces shall be from the same batch.

E. Tools: Cutting and polishing shall be done using water-cooled power tools.

F. Cutouts

1. Cutouts shall have a minimum 3/8 inch (10mm) inside radius.
2. Exposed edges shall be polished to match surface finish or per drawings.

G. Laminations

1. Laminate layers of quartz surfacing as required to create buildup of edges.

Part 3 – Execution

3.0 Accebtable Installer

Installer: Firm shall have five years' experience installing architectural stone and shall certified by Diresco.

3.1 Examination

A. Site Verification

1. Verify dimensions by field measurements prior to fabrication and installation.
2. Verify that substrates supporting quartz surfaces are plumb, level, and flat to within 1/16 inch in 10 feet, and that all necessary supports and blocking are in place.
3. [Base Cabinets: Units shall be securely fixed to all adjoining units and back wall].

B. Material Inspection Review

1. Inspect material for possible damage.
2. Do not install any damaged material until the material has been repaired or replaced.

3.2 Preparation

A. General

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

3.3 Installation

A. General

1. Install materials in accordance with manufacturer's recommendations.

B. Preliminary Installation

1. Position materials to verify correct size and position.
2. Make any necessary adjustments.
3. Perform work away from installation area if possible
4. Use water-cooled tools if cutting, grinding or polishing material at job site.
5. Protect jobsite and surface from dust and water.
6. If possible, perform all work away from job site.
4. Allow gaps for expansion of not less than 1/8 inch when installing between walls or other fixed structures.

C. Permanent Installation:

1. After verification of fit:
    a. Remove surface from position.
    b. Clean substrates of dust or remains.
    c. Clean the back side of all quartz surfaces and joint surfaces with approved solvent.
2. Apply sufficient amount of mounting adhesive in accordance with manufacturer's recommendations to provide a permanent and secure installation.
3. [Fasteners] [Grout] [Hardware]: [_____].
4. Instal quartz surface plumb, level, square and flat within 1/16 inch in 10 feet.

D. Joints

1. Joints between adjacent pieces of quartz surfacing
    a. Joints shall be flush, tight fitting, level, and neat.
    b. Securely join with manufacturer's recommended stone adhesive.

c. Fill joints level to quartz surfacing.
d. Clamp or brace quartz surfacing pieces in position until adhesive sets.

2. Joints between quartz surfacing and [backsplash] [wall] [tub] [shower] [other]
   a. Seal joints with silicone sealant.

3.4 Repair

A. Repair or replace damaged material in a satisfactory manner.

3.5 Cleaning

A. Remove masking, excess adhesive and/or sealant. Clean all exposed surfaces.

3.6 Protection

A. Protect installed surfaces from damage by other trades.

3.7 Schedules

A. [Site and job specific].

END OF SECTION