DuPont Surfaces

WEATHERABILITY AND EXTERIOR USE OF DUPONT™ CORIAN® SOLID SURFACE

TECHNICAL BULLETIN

AAMA 2604, Voluntary Specification, Performance Requirements and Test Procedures for High Performing Organic Coatings on Aluminum Extrusions and Panels

ANSI/ICPA SS-1, Performance Standard for Solid Surface Materials

ASTM B117, Standard Practice for Operating Salt Spray (Fog) Apparatus

ASTM C666/C666M, Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing

ASTM C756, Standard Test Method for Cleanability of Surface Finishes

ASTM D1308, Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes

ASTM D2244, Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

ASTM D2247, Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity

ASTM D2248, Standard Practice for Detergent Resistance of Organic Finishes

ASTM D570, Standard Test Method for Water Absorption of Plastics

ASTM G7, Standard Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials

ASTM G21, Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi

ASTM G85, Standard Practice for Modified Salt Spray (Fog) Testing

ASTM G155, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials

This bulletin provides an overview of potential performance considerations when deciding if DuPont™ Corian® is appropriate for an exterior application. Corian® color recommendations are based on testing performed at the DuPont Weathering Station in Hialeah, Florida.

Color stability is often a primary concern when evaluating a material for exterior use, however, there are other performance factors that should also be considered. Many colors of Corian® exhibit good color stability. All colors of Corian® have low moisture absorption and resistance to stains, environmental pollutants, detergents, and humidity as well as freeze-thaw conditions. Design flexibility, ease of fabrication, seamless appearance, thermoformability and durability make Corian® a versatile material. Corian® can be easily sanded and/or cleaned to restore its original appearance. Even graffiti can be removed through standard pressure washing with baking soda-based cleaning agents. All of these performance factors combined make Corian® an excellent choice for exterior applications.

Individual Corian® colors change differently and often exhibit whitening which can be renewed with cleaning and/or sanding. This change is more evident in saturated, chromatic and dark colors and least evident in whites, lights and many of the earth tones. Ultimately, it is up to the end user to determine if these characteristics are acceptable for the desired application. Corian® has been tested according to industry standards that are used in part to help determine a product's suitability for exterior use.

DUPONT®

The miracles of science™

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DuPont™ Corian® Color Suggestions for Exterior Applications

Testing at the DuPont Weathering Station in Hialeah, Florida was performed in accordance with ASTM G7. Panels of Corian® were exposed facing south at 45° from the horizontal for a two year period. In some cases, preliminary color assessments are made based on accelerated Weather-Ometer® testing performed in accordance with ASTM G155 and Florida exposure testing of comparable Corian® colors.

Accelerated Weather-Ometer® testing artificially accelerates and reproduces weathering effects that occur from exposure to direct sunlight and rain or dew using exposure to a xenon arc lamp and water. Color changes for both tests are instrumentally measured before and after the exposure period. Color change is calculated per ASTM D2244. All exposure testing is performed on nominal half-inch gauge product. Corian® colors are grouped into three performance categories. These categories are based on projected 10-year color change performance. Color changes are measured in ΔE^{*}_{ab} units. ΔE^{*}_{ab} (the total color difference) and its calculation are defined in ASTM D2244.

Corian® Color Suggestions for Exterior Applications

GROUP A		GROUP B		GROUP C	
Abalone	Festival	Acorn*	Mosaic*	Aruba	Moss
Adobe	Fossil	Aloe Vera*	Natural Gray	Aubergine	Oat*
Antarctica	Glacier Ice*	Anthracite	Nocturne	Black Quartz	Oceanic
Aurora	Glacier White	Aqua	Pearl Gray	Blueberry Ice*	Raffia
Aztec Gold*	Gobi*	Atlantis	Pewter*	Bronze Patina*	Rain Forest
Beach	Gray Fieldstone*	Azure	Pine*	Burnt Amber	Ruby
Beach Glass	Gray Pebble*	Bethany	Platinum	Canyon	Sage Graystone*
Beige Fieldstone	Green Tea*	Blue Crush*	Pompeii Red	Cinnabar*	Seagrass
Bisque	Lime Ice*	Blue Ridge	Prairie	Cocoa Brown	Serene Sage*
Blackberry Ice	Linen	Canyon Trail*	Raw Silk*	Earth*	Shale
Blue Pebble	Mint Ice*	Cargo	Rye*	Evergreen	Silt
Bone	Night Sky	Cobalt	Sagebrush*	Flint	Slate*
Burled Beach*	Oyster	Cottage Lane*	Sand*	Gravel	Sonora*
Butter Cream	Pepper Ivory	Fawn*	Sandstone	Hot	Stone Harbor*
Camel*	Primrose	Granola*	Sequoia	Lava Rock*	Stone Washed
Cameo White	Pyrenees	Graphic Blue	Silver Birch*	Malachite	Storm Blue*
Canvas*	Rain Cloud*	Kilimanjaro	Spruce	Mandarin	Suede*
Caribbean	Rice Paper*	Lilac	Terra	Maui	Sun
Chamois*	Riviera	Macadam	Tumbleweed*	Medea*	
Cirrus White*	Rosetta	Mardi Gras	Whisper*	Verde*	
Clam Shell	Sahara	Matterhorn	White Jasmine*	Mediterranean	
Concrete*	Savannah	Mojave	Willow*	Midnight	
Delta Sand	Seashell	Mont Blanc*	Winter Wheat*		
Desert Springs	Strawberry Ice*				
Doeskin*	Tarragon				
Dove*	Tranquil*				
Dusk	Tumbled Glass				
Eclipse	Vanilla				
Ecru*	Venaro White*				
Egyptian Copper*	Whitecap*				
Everest					

Terra Collection

The DuPont™ Corian® Terra Collection is third-party certified by Scientific Certification Systems (SCS) to contain pre-consumer recycled content. These surfaces contain material diverted from the waste stream in the manufacturing process, reducing the processing of virgin materials. The diverted waste has been verified by SCS to meet ISO 14021 criteria.

The Corian® Terra Collection contains 25 colors, all of which have been independently certified to contain a minimum of 6% pre-consumer recycled content. Seven of these colors are certified to contain a minimum of 13% pre-consumer recycled content and are indicated in bold typeface in the table below.

DuPont™ Corian® Terra Collection Color Suggestions for Exterior Applications

GROUP A	GROUP B	GROUP C
Blue Pebble	Atlantis	Aruba*
Canvas*	Granola*	Mediterranean
Dove*	Pine*	Midnight
Green Tea*	Platinum	Oat*
Rice Paper*	**Rye***	Raffia*
Tranquil*	**Silver Birch***	Ruby
	Whisper*	Serene Sage*
	White Jasmine*	Shale
	Willow*	Storm Blue*
		Suede*

**Preliminary color assessment based on accelerated Weather-Ometer® testing performed in accordance with ASTM G155 and Florida exposure testing of comparable Corian® colors.*

Group A — Color change of less than or equal to 5 ΔE^{*}_{ab} units in 10 years - good choices for exterior applications

Group B — Color change of 5 to 15 ΔE^{*}_{ab} units in 10 years – good choices if some color change is not objectionable

Group C — Color change of greater than 15 ΔE^{*}_{ab} units in 10 years – potential choices if greater color change is acceptable

The DuPont™ Corian® 10 Year Limited Warranty shall not apply for materials used in an outdoor application. Weather-Ometer® is a registered trademark of Atlas.

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