

# CORIAN® SOLID SURFACE PRODUCT QUALITY INSPECTION

## Introduction

This fabrication bulletin discusses the product quality inspection of Corian® Solid Surface and accessories.

## Overview

Visual inspection for defects or color match is essential when working with Corian® Solid Surface products and is standard good trade practice.

The following simplified product specifications are given to you as a reference tool.

The continuous improvement programs of our manufacturing processes and controls will result in upgrades in our product specifications and narrowing of our tolerances.

### HELPFUL HINTS:

*Do not work with product that will greatly increase the amount of fabrication required due to defective material.*

*Call your Authorized Distributor of Corian® Solid Surface products for assistance whenever you are unsure of raw material quality. Be prepared to give the manufacturer's product identification code and at least one sequence number from the suspect sheet.*

*DuPont will replace any Corian® solid surface material not conforming to product specifications when delivered. However, DuPont will not pay for labor costs for any fabrication done on defective material.*

## A. Corian® Sheet Inspection

The table below lists the different items you should look for when you make a visual inspection of Corian® Solid Surface sheets.

TABLE A-1

Corian® Sheet Inspection – Items to Look For	Specification
broken	–
cracks	–
sheet/sheet color match	A.1
color inconsistency within sheet	A.2
particles pattern irregularity	A.3
length/width/square	A.4
thickness	A.5
tapered edge	A.6
length warp	A.7
width warp: smiles/frowns	A.8
black spots/white spots	A.9
face-side pinholes/voids/ripples	A.10
underside pinholes/voids/ripples	A.11
edge cracks/chips	A.12

### A.1. CORIAN® SHEET COLOR MATCH

An essential element to sheet inspection is checking for color match.

The composition of Corian® Solid Surface produces slight color variations between production cycles due to the innate and complex blending of natural minerals and man-made acrylic. This characteristic is inherent in the product, hence the strict guidelines set forth below.

DuPont does not guarantee color match. It is up to the fabricator to insure acceptable color match between sheets.

Back lit applications are more sensitive to color match and should be checked with back lighting as the color difference may not be seen until back lit. White translucent colors may appear slightly warm or cool due to natural variation of raw ingredients. For larger projects where larger number of sheets will be installed in the same viewable area it is recommended to request sheets from a single production batch to minimize variation due to raw ingredient natural variation. This may require a longer lead time.

Color match can be enhanced in three ways:

1. By conducting a trial color match.
2. By using sheets from the same pallet.
3. By checking that the product identification code printed on the underside or edge of all sheets is within a specified range. The marking varies by country of origin.

Steps to completion:

### A. Trial Color Match

1. Cut a representative strip from the intended sheets to be seamed.
2. Seam these pieces together. Use cyanoacrylate glue for fast and simple adhesion.
3. Polish to intended finish.
4. Visually inspect the seam to ensure that exact color match is achieved.
5. For translucent products that will be used with back lighting, inspect for color match with back lighting similar to what will be used in the application.

### B. Same Pallet.

Take all sheets for the job from the same pallet. Verify that the sheets are sequential.

### C. Numbers on Sheets

Corian® Solid Surface is manufactured in several locations. The sheet labeling varies by country of origin.

#### United States

The United States label has two parts. The product identification code is a six digit alphanumeric code of the format #A##AA. The sequence number consists of seven numeric digits, #####. On the back of the sheet the label is CC #A##AA SEQ NO #####, where CC is the color code. Illuminations series sheets are not labeled on the back of the sheet, only on the edge, where only the color code and sequence number are provided. Check that the digits of the sequence number are within ±50 numbers of each other.

#### Japan

The Japan label has two parts. The product identification code is a six digit alphanumeric code of the format #####A. The sequence number consists of five numeric digits, #####. Check that the digits of the sequence number are within ±50 numbers of each other.

#### Korea

The Korea label is on the side and the back of the sheet, with a slightly different format for each location. The Korea edge label has a single code in two parts separated by a hyphen. The code is an alphanumeric code of the format #A##A##-##. The last two numbers of the alphanumeric portion before the dash (in red) should be identical for optimum color match. Check that the last two digits of the alphanumeric portion preceding the hyphen are the same.

The back label has the same initial #A##A## format, followed by SEQ.NO.##.

#### China

The China pallet label consists of 1 part. The product identification code is a ten-digit alphanumeric code of the format A#####A. The first nine characters are the batch ID, while the final letter in red is the pallet ID.

The sheet sequence number on the back of 6- and 12-mm sheet is in the format CC ##### SEQ NO ###. CC is the two-digit color code.

The ten-digit sequence (in red) should be the same for optimum color match. The three- digit sequence after SEQ NO is the individual sheet ID.

The sheet sequence number on the side of 12-mm sheet (6-mm sheet has no side label) is a thirteen-digit numeric code. The color name on the side of the sheet is full text. The first ten digits identify the batch, while the last three identify the sheet number.

For solid colors, sheets to be seamed together should be from same batch. For particulate colors, sheets should be from the same pallet.

Using the appropriate criteria for the country of origin, confirm that all sheets to be seamed together meet the criteria provided.

In the case where the ink-jet number or label is missing from a sheet within a complete pallet, it is likely that the sheet will still be from the same batch as the others in the pallet. Complete a trial color match inspection before commencing a job using this sheet.

When the ink-jet number or label is present but does not fit within the specified range, a color match may still be possible. Complete a trial color match before beginning a job using this sheet.

#### HELPFUL HINTS:

*Either leave the product identification codes on the sheets or record them for each job.*

*Never assume sheets will color match where product identification codes are missing. Always do a trial color match.*

*When completing a trial color match, complete final visual inspection in lighting conditions similar to that found on the job.*

*Never inspect in bright light such as direct sunlight.*

*If color match is found to be unsatisfactory after fabrication, yet the product codes are as per guidelines, contact your Authorized Distributor of Corian® Solid Surface products immediately.*

#### A.2. COLOR INCONSISTENCY WITHIN SHEET

Inspect the surface of solid colors for any color inconsistency. If blotches are apparent and cannot be worked out of the sheet, call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

Check for pattern irregularities in veined pattern sheets. If any obvious irregular distribution of veined pattern is visible to the eye, isolate the sheet for inspection by your Authorized Distributor of Corian® Solid Surface products.

Veined patterns are typically randomly distributed. Irregularities may include heavy bunching of veined pattern in any “lane” of the sheet. Veining is random and does not repeat. The veining will vary from sheet to sheet. Special design and fabrication considerations may apply. Please refer to the *Corian® Solid Surface Product Fabrication Bulletin – Veined Aesthetics* (K-26828) for guidance.

Colors with metallic and mica aesthetics have reflective particles. In the solid and particulate colors of this series, the appearance of the material changes when viewed from different angles or under different lighting.

These colors have special design and fabrication considerations. Please refer to the *Corian® Solid Surface Product Fabrication Bulletin – Metallic Aesthetics* (K-25703) and *Corian® Solid Surface Product Fabrication Bulletin – Mica Aesthetics* (K-27484) for guidance. *Corian® Solid Surface Product Fabrication Bulletin – Directional Aesthetics* (K-26833) contains a list of veined, metallic and mica aesthetics by color name.

**A.3. PARTICLE PATTERN IRREGULARITY**

Check for pattern irregularities in particulate color sheets. It is especially important to check the areas near the edges of the sheet.

If any obvious irregular distribution of particles is visible to the eye, isolate the sheet for inspection by your Authorized Distributor of Corian® Solid Surface products.

DuPont has engineered the particulate colors of Corian® Solid Surface to have random particle distribution throughout the sheet, including the thickness. Part of random distribution is that sometimes particles will congregate in one area or will be segregated in another. There is no way to predict this phenomenon, and DuPont feels it is one of the many beauties of Corian® Solid Surface. Since it is an end toward which DuPont strives, random particle distribution is considered neither a product nor a manufacturing defect.

Because of the acrylic resin used to make Corian® Solid Surface, particles slightly under the surface can be seen. Depending on how deep into the sheet particles may be, particles may appear to be different shades or to be different colors. Also since some colors have different size and color particles, some particles are more visible than others. These features are more examples of the beauty of Corian® Solid Surface and are not defects.

When making long seams for islands or peninsulas, the best pattern match might be obtained by butting edges from the same side of the pallet on consecutive sheets. If pattern match is off, try rotating one of the sheets 180°.

**Inspect sheets and shape products carefully before using. DuPont replacement policy does not allow for labor on defective material.**

**A.4. LENGTH AND WIDTH**

Reference length and nominal length of Corian® sheets are the same. The real length of the sheet can vary between +1/2" (+13 mm) and -1/4" (-6 mm). The width can vary by ± 1/16" (1.5 mm).

**TABLE A-2: LENGTH AND WIDTH VARIATION**

Nominal Thickness	Nominal Length	Typical Length	Length Range
6 mm (1/4")	98" (2490 mm)	98.375" (2499 mm)	98-98.875" (2490-2512 mm)
12 mm (1/2")	144" (3658 mm)	144.375" (3667 mm)	144-144.875" (3658-3680 mm)
19 mm (3/4")	144" (3658 mm)	144.375" (3667 mm)	144-144.875" (3658-3680 mm)

Nominal Width	Typical Width	Width Range
30" (760 mm)	30" (760 mm)	29.86-30.06" (758.5- 763.6 mm)
36.6" (930 mm)	36.6" (930 mm)	36.55-36.67" (928.5-931.5 mm)
48" (1219 mm)	48" (1219 mm)	47.87-48.11" (1216-1222 mm)
54" 1372 mm)	54" 1372 mm)	53.90-54.13" (1369-1375 mm)
60" (1524 mm)	60" (1524 mm)	59.88-60.12" (1521-1527 mm)

**A.5. CORIAN® SHEET THICKNESS**

Reference and nominal thickness of Corian® sheets do vary depending on the color family.

**TABLE A-3: SOLID COLOR THICKNESS VARIATION**

Nominal Thickness	Minimum-Maximum	Maximum within-sheet variation
6 mm (1/4")	0.220-0.276" (5.6-7.0 mm)	0.031" (0.8 mm)
12 mm (1/2")	0.447-0.496" (11.4-12.6 mm)	0.031" (0.8 mm)
19 mm (3/4")	0.716-0.780" (18.2-19.8 mm)	0.047" (1.2 mm)

**TABLE A-4: PARTICULATE, VEINED, AND METALLIC COLORS THICKNESS VARIATION**

Nominal Thickness	Minimum-Maximum	Maximum within-sheet variation
6 mm (1/4")	0.208-0.264" (5.3-6.7 mm)	0.031" (0.8 mm)
12 mm (1/2")	0.447-0.496" (11.4-12.6 mm)	0.031" (0.8 mm)

**A.6. TAPERED EDGE**

Where edge taper greater than 3/64" (1.2 mm) exists and this taper cannot be merged into edging or other elements of the surface, call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

Figure A-1



**A.7. LENGTH WARP**

Where warp is greater than the values in Table A-5 call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

**A.8. WIDTH WARP: "SMILES" AND "FROWNS"**

Where a sheet deflects on the edges to the shape of a smile or alternatively a frown (i.e., up or down), greater than the values in Table A-5 call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

Warp is measured over 36" (914 mm) or the width of the sheet if under 36" (914 mm).

**TABLE A-5: WARP VARIATION**

Nominal Thickness	Sheet Width	Max Warp
6 mm (1/4") 12 mm (1/2")	30" (760 mm)	0.034" (0.86 mm)
6 mm (1/4") 12 mm (1/2")	36.6" (930 mm)	0.041" (1.05 mm)
12 mm (1/2")	48" (1219 mm)	0.10" (2.5 mm)
12 mm (1/2")	54" (1372 mm)	0.10" (2.5 mm)
12 mm (1/2")	60" (1524 mm)	0.10" (2.5 mm)
19 mm (3/4")	30" (760 mm)	0.062" (1.57 mm)

**A.9. FACE-SIDE BLACK AND/OR WHITE SPOTS**

Where large groups of spots occur that clearly detract from the appearance of the solid color sheet, call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

Allowable Surface Defects: Contaminants i.e., black, white or colored particles that are visible against the background, smaller in diameter than the following are permitted. For colors with reflective pigments use the tolerance in Table A-6 for solid colours where the sheet has only reflective pigments within a plain colored sheet and the tolerance for particulate colours where the sheet has both particulates and reflective pigments. Measure using transparent Tappi size estimation charts for accuracy.

**TABLE A-6**

Item	mm <sup>2</sup>
Solid Colors	0.5
Particulate Colors	3.1

**A.10. FACE-SIDE PINHOLES, VOIDS AND/OR RIPPLES**

When minor scratches, pinholes, voids, ripples, bumps, etc., occur in the face side of the sheet, orbital sanding with 120-grit sandpaper for about 3 min./yd<sup>2</sup> (min./m<sup>2</sup>) might resolve the problem.

Corian® Solid Surface sheet is sold as a one-sided product. Irregularities in backside pattern or color are not manufacturing defects.

**A.11. UNDERSIDE PINHOLES, VOIDS AND/OR RIPPLES**

Pinholes and depressions less than 1/8" (3 mm) deep and 1/4" (6 mm) in diameter are considered as acceptable. The same applies for ripples and bumps less than 1/16" (1.5 mm) deep.

Where more serious irregularities occur, call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

**A.12. EDGE CRACKS AND/OR CHIPS**

Corner chips of 3/16" (5 mm) wide/deep from the nominal length and edge chips or nicks less than 3/16" (5 mm) wide/ deep represent the allowance limit.

Where more important surface defects occur, call your Authorized Distributor of Corian® Solid Surface products for inspection and product replacement where required.

**B. Sink And Lavatory Shape Inspection**

The table below lists the different items you should look for when you make a visual inspection of the Corian® sinks and lavatories.

**TABLE B-1**

Corian® Sink and Lavatory Inspection-Items to Look For	Specification
broken	-
cracks	-
incorrect labeling	-
color irregularity	B.1
bowl flange	B.2
black spots/white spots	B.3
physical non-uniformities	B.3
face-side pinholes/voids	B.3
bowl opening dimensions	B.4
drain holes	B.5
bad milling of top flange	B.6
bad milling of overflow	B.6
color match to sheet of same color	B.7
color match for multiple lavatory installation in same countertop	B.8

**B.1. COLOR IRREGULARITY**

Check for color patches, flow lines or whitened areas.

**B.2. BOWL FLANGE**

Bowl flange thickness shall be greater than 11 mm, maximum + 4 mm (7/16" maximum + 5/32"). Flange width shall be uniform within ±3 mm (1/8"). Flange top surface shall be flat within ≤ 1.2 mm (3/64") measured topside- down using a taper gauge. Metric measurements are official, inches are approximate.

**B.3. EXPOSED SURFACES**

Exposed surfaces shall be free of:

- objectionable scratches
- ridges
- ripples
- pits
- craters
- air holes
- sink marks when viewed from two feet away
- white spots (includes impact or bruises marks)
- depressions
- other physical non-uniformities.

Foreign Matter and Dirt Particles:

- No particle shall be  $\geq 0.4 \text{ mm}^2$ .
- No more than two  $\geq 0.3 \text{ mm}^2 < 0.4 \text{ mm}^2$  particles within a 300-mm diameter circle. If there are only two particles within a 300-mm diameter circle, they shall be judged separately.
- No more than ten particles  $> 0.1 \text{ mm}^2$  to  $< 0.3 \text{ mm}^2$  within a 100-mm diameter circle.
- No raised particle shall be accepted.

**B.4. BOWL DIMENSIONS**

All bowl dimensions shall be within  $\pm 3 \text{ mm}$  ( $1/8"$ ) of stated size. Metric measurements are official, inches are approximate.

**B.5. DRAIN HOLES**

All lavatory and sink drain hole nominal diameters shall be as listed on product drawings.

**B.6. BAD MILLING OF TOP FLANGE OR OVERFLOW**

Check for chips on or around the top flange or overflow outlet. Edge nicks should not be deeper or wider than  $1/8"$  (0.3 mm).

**B.7. COLOR MATCH TO SHEET OF SAME COLOR**

Colors are color and translucency matched. They can be seamed to sheet colors with the same color name for a continuous appearance. Exact color match is not guaranteed as the products are made by different processes and some variation might occur within the allowed specification limits. Check sheet and shape color match before using adhesive to attach sink to countertop. If the sheet and sink/lavatory differ significantly in color, check with your distributor to see if product from a different batch is available.

**B.8. COLOR MATCH FOR MULTIPLE LAVATORY  
INSTALLATION IN SAME COUNTERTOP**

When there are multiple lavatories in the same countertop, check that the Manufacturing Number is the same to ensure color match. This is of the format US1##A##AA (the entire code should match) or MX#####%% (the 5-digit ##### should match).

**C. Accessories Inspection**

Table C-1 lists the different items you should check before using any Corian® Solid Surface accessory. More information on adhesives is available in *Corian® Solid Surface Fabrication/Installation Fundamentals – Adhesives* (K-25290).

Call your Authorized Distributor of Corian® Solid Surface products for assistance whenever you are unsure of raw material quality.

**TABLE C-1**

Corian® Accessories Inspection – Items to Look For
incorrect labeling
Corian® Joint Adhesive—shelf life
Corian® Joint Adhesive—component A (10) leaking (large tube)
Corian® Joint Adhesive—component B (1) leaking (small tube)

**E. Referenced Documents**

*Corian® Solid Surface Product Fabrication Bulletin – Veined Aesthetics* (K-26828)

*Corian® Solid Surface Product Fabrication Bulletin – Metallic Aesthetics* (K-25703)

*Corian® Solid Surface Product Fabrication Bulletin – Mica Aesthetics* (K-27484)

*Corian® Solid Surface Product Fabrication Bulletin – Directional Aesthetics* (K-26833)

*Corian® Solid Surface Fabrication/Installation Fundamentals– Adhesives* (K-25290)

# CORIAN® SOLID SURFACE PRODUCT QUALITY INSPECTION

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