

PRODUCT QUALITY INSPECTION

INTRODUCTION

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

OVERVIEW

Visual inspection for defects or colour 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 product.

DuPont will replace any Corian® Solid Surface material not conforming to product specifications when delivered. However, DuPont will not pay for labour 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

ITEMS TO LOOK FOR	SPECIFICATION
broken	-
cracks	-
sheet/sheet colour match	A.1
colour 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
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 Colour Match

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

The composition of Corian® Solid Surface produces slight colour 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 colour match. It is up to the fabricator to insure acceptable colour match between sheets.

Colour match can be checked in three ways:

1. By conducting a trial colour 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 Colour 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 colour match is achieved.

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 nine numeric digits, #####. On the back of the sheet the label is CC #A##AA SEQ NO #####, where CC is the colour code. Illuminations series sheets are not labeled on the back of the sheet, only on the edge, where only the colour 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 Korean 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 colour match.

Turkey

The Turkish label has a single code in a 10 digit alphanumeric format TR#####. The back of the sheet has the colour code followed by #A##AA and the sequence number consisting of ten numeric digits #####. Please make sure the sheets have same batch number which is digit 5,6 and 7 of the sequence number. Last 3 numbers are sheet number.

China

China pallet label consists of 1 part. The product identification code is a ten digit alphanumeric code of the format AA#A#####. The sequence nr consists of 4 numeric digits ####. On the back side of the sheet the label is GW ##### SEQNo. #### where GW is the colour code.

Follow the Trial colour match step as explained above.

Use 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 colour 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 colour match may still be possible. Complete a trial colour 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 colour match where product identification codes are missing. Always do a trial colour match.

When completing a trial colour 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 colour 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. Colour Inconsistency Within Sheet

Inspect the surface of solid colours for any colour 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. The 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 *DuPont™ Corian® Solid Surface Product Fabrication Bulletin – Veined Aesthetics* (K-26828) for guidance.

Colours with metallic aesthetics have reflective particles. In the solid and particulate colours of this series, the appearance of the material changes when viewed from different angles or under different lighting. These colours have special design and fabrication considerations. Please refer to the *DuPont™ Corian® Solid Surface Product Fabrication Bulletin – Metallic Aesthetics* (K-25703) for guidance.

A.3. Particle Pattern Irregularity

Check for pattern irregularities in particulate colour 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 colours 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 colours. Also since some colours have different size and colour 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 seaming 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 labour on defective material.

A.4. Length and Width

TABLE A-2. LENGTH & WIDTH VARIATION

THICKNESS	NOMINAL LENGTH	TYPICAL LENGTH	LENGTH VARIATION
1/4" (6 mm)	98" (2490 mm)	98.375" (2499 mm)	98" – 98.875" (2490–2512 mm)
1/2" (12 mm)	144" (3658 mm)	144.375" (3667 mm)	144" – 144.875" (3658–3680 mm)
3/4" (19 mm)	144" (3658 mm)	144.375" (3667 mm)	144" – 144.875" (3658–3680 mm)

NOMINAL WIDTH	TYPICAL WIDTH	WIDTH VARIATION
30" (760 mm)	30" (760 mm)	29.86" – 30.06" (758.5 – 763.6 mm)
36.6" (930 mm)	36.62" (930 mm)	36.55" – 36.67" (928.5 – 931.5 mm)
51.25" (1300 mm)	51.18" (1300 mm)	51.12" – 51.31" (1298.5 – 1303.3 mm)

A.5. Sheet Thickness

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

TABLE A-3. SOLID COLOURS

NOMINAL THICKNESS	TYPICAL THICKNESS	MAX. VARIATION
1/6" (4 mm)	0.15" (4 mm)	+/- 0.028" (0.7mm)
1/4" (6 mm)	0.250" (6.4 mm)	+/- 0.031" (0.8 mm)
1/2" (12 mm)	0.472" (12 mm)	+/- 0.031" (0.8 mm)
3/4" (19 mm)	0.750" (19 mm)	+/- 0.031" (0.8 mm)

TABLE A-4. PARTICULATE, VEINED AND METALLIC COLOURS

NOMINAL THICKNESS	TYPICAL THICKNESS	MAX. VARIATION
1/4" (6 mm)	0.235" (6.0 mm)	+/- 0.031" (0.8 mm)
1/2" (12 mm)	0.472" (12 mm)	+/- 0.031" (0.8 mm)
3/4" (19 mm)	0.735" (18.7 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. 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.

TABLE A-5. LENGTH & WIDTH WARP

THICKNESS	LENGTH	MAX. WARP VARIATION
1/4" (6 mm) 1/2" (12 mm)	All	0.034" – 30" 0.864 mm – 760 mm
19 mm (3/4")	All	0.062" – 30" 1.57mm – 760 mm

THICKNESS	WIDTH	MAX. WARP VARIATION
1/4" (6 mm) 1/2" (12 mm)	30" (760 mm)	0.034" (0.86 mm)
1/4" (6 mm) 1/2" (12 mm)	36.6" (930 mm)	0.041" (1.05 mm)
1/4" (6 mm) 1/2" (12 mm)	51.25" (1300 mm)	0.058" (1.47 mm)
3/4" (19 mm)	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 colour 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 coloured particles that are visible against the background, smaller in diameter than the following are permitted:

TABLE A-6

ITEM	FRACTIONS	DECIMAL (INCHES)	MILLIMETERS
Solid Colours	1/32"	0.031"	0.8 mm
Particulate Colours	5/64"	0.078"	2.0 mm

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/yd² (min/m²) might resolve the problem.

Corian® Solid Surface sheet is sold as a one-sided product. Irregularities in backside pattern or colour 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. INSPECTION OF SINKS AND BASINS

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

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

TABLE B-1

ITEMS TO LOOK FOR	SPECIFICATION
broken	-
cracks	-
incorrect labeling	-
colour irregularity	B.1
overflow hardware kit	B.2
overflow accessories	B.3
bowl flange	B.4
black spots/white spots	B.5
physical non-uniformities	B.5
face-side pinholes/voids	B.5
bowl opening dimensions	B.6
drain holes	B.7
bad milling of top flange	B.8
bad milling of overflow	B.8

B.1. Colour Irregularity

Check for colour patches, flow lines or whitened areas. Sheets and shapes of same colour may not colour match.

B.2. Overflow Hardware Kit

For overflow hardware glued to the Corian® bowl, check if the fitting is loose or broken. For overflow hardware detached from the Corian® bowl, check if the fitting is broken or missing from the package.

B.3. Overflow accessories

All basins supplied with overflow hole should include an overflow arrangement (i.e. Glue-on or Screw-on overflow, cut to size elbow overflow, waste connector and sealing washer). All kitchen sinks supplied with overflow hole should include an overflow arrangement (i.e. Glue-on or Screw-on overflow and cut to size elbow overflow).

B.4. Bowl Flange

Bowl flange thickness shall be greater than 9/32" (7.1 mm). Flange width shall be uniform within 3/32" (2.4 mm). Flange top surface shall be flat within 1/32" (0.8 mm) measured topside-down using a taper gauge.

B.5. Exposed surfaces

Exposed surfaces shall be free of:

- objectionable scratches
- ridges
- ripples
- pits
- craters
- voids in seam lines
- air holes
- sink marks when viewed from two feet away (60cm)
- white spots (includes impact or bruises marks)
- depressions
- other physical non-uniformities.

Foreign matter and dirt particles:

- No particle shall be bigger than 1/64 in² (0.4 mm²).
- Groups of three or more particles within a 12" (305 mm) diameter circle shall have no particle larger than 1/85 in² (0.3 mm²). If there are only two particles within a 12" (305 mm) diameter circle, they shall be judged separately.
- Groups of 10 or more particles shall have no particles larger than 1/256 in² (0.1 mm²).
- No raised particle shall be accepted.
- No more than 1 white spot within any 3" (76 mm) diameter circle shall be accepted.
- No more than 7 white spots in each sink or basin shall be accepted.

B.6. Bowl opening dimensions

All bowl opening dimensions shall be within -1/26"/+1/13" (-1/+2 mm) of stated size.

B.7. Drain holes

All basin drain hole diameters shall be 1 8/10" (46mm tolerance +0.08" -0.12" or +2/-3 mm). All sink drain hole diameters shall be 3 1/2" (90mm tolerance +0.12" -0.08" or +3/-2 mm).

B.8. 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 1/85" (0.3 mm).

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 DuPont™ 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

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)
Curing Time of Joint Adhesive & homogeneous mixing

Shelf life: 24 months after production date, when stored horizontally in a cool (in an area of constant temperature in the range of 12 ° to 16° C) and dark area – tolerance none, check expiry date. If only a month and year are listed it expires the last day of that month.

Leaking component A and B: leak tight, tolerance none, visual inspection of packaging for leaks.

Curing Time of Joint Adhesive: Complete 45 minutes after mixing at 20 °C (tolerance +/- 10 minutes depending on temperature and humidity). Check hardness with impression of thumbnail.

Homogeneous mixing: no different in colour/hardness in different parts of the bead. Colour: visual inspection of test bead, hardness, impression of thumbnail.

D. CORIAN® SHOWER TRAYS AND BATH TUBS INSPECTION

The table below lists the different items you should look for when you make a visual inspection of the Corian® shower trays and bath tubs.

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

TABLE D-1

ITEMS TO LOOK FOR	SPECIFICATION
broken	–
cracks	–
incorrect labeling	–
colour irregularity	D.1
overflow hardware kit	D.2
Drain cover & drain accessories	D.3
Installation instructions	D.4
black spots/white spots	D.5
physical non-uniformities	D.5
face-side pinholes/voids	D.5
dimensions	D.6
Drain & overflow holes	D.7
bad milling of top flange	D.8
bad milling of overflow	D.8

D.1. Colour Irregularity

Check for colour patches, flow lines or whitened areas. Sheets and Smart shower trays of same colour may not colour match.

D.2. Overflow Hardware Kit

All bath tubs include an overflow (i.e. either integrated or separate as part of the drain accessory).

For embedded overflow hardware integrated into the Corian® bath tub, check if the fitting is broken. For overflow hardware detached from the Corian® bath tub, check if the fitting is broken or missing from the package.

D.3. Drain cover & drain accessories

Shower trays include a drain cover, check if the drain cover is broken or missing.

Bath tubs have a drain cover included in the drain accessory, check if broken or pieces missing.

D.4. Installation instructions

Check if installation instructions are included, and follow the guidelines for installation.

D.5. Exposed surfaces

Exposed surfaces shall be free of:

- objectionable scratches
- ridges
- ripples
- pits
- craters
- voids in seam lines
- sink marks when viewed from two feet away (60cm)
- white spots (includes impact or bruises marks)
- depressions
- other physical non-uniformities.

Air bubbles, Foreign Matter and Dirt Particles:

- No particle shall be bigger than 1/64 in² (0.4 mm²).
- Groups of three or more particles within a 12" (305 mm) diameter circle shall have no particle larger than 1/85 in² (0.3 mm²). If there are only two particles or air bubbles within a 12" (305 mm) diameter circle, they shall be judged separately.
- Groups of 10 or more particles or air bubbles shall have no particles larger than 1/256 in² (0.1 mm²).
- No raised particle shall be accepted.
- No more than 1 white spot within any 3" (76 mm) diameter circle shall be accepted.
- No more than 7 white spots in each shower tray or bath tub shall be accepted.

D.6. Dimensions

All shower trays dimensions shall be within $\pm 1/5"$ (± 5 mm) of stated size. All bath tubs dimensions shall be within $\pm 5/16"$ (± 8 mm) of stated size.

D.7. Drain holes

All bath tub drain hole diameters shall be 2 1/20" (52 mm – tolerance $+3/-2$ mm). All shower tray drain hole diameters shall be 3 9/16" (90.5 mm – tolerance ± 2.5 mm).

D.8. 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 1/85" (0.3 mm).

E. REFERENCED DOCUMENTS

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

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

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

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