CORIAN® SOLID SURFACE ADHESIVES

Introduction

This fabrication bulletin addresses adhesives and procedures used while fabricating Corian® Solid Surface.

Overview

There are several adhesive applications in the fabrication of Corian® Solid Surface.

An inconspicuous "hard" seam between two sheets of Corian® Solid Surface – An essential part of converting flat sheet into an object made from Corian® Solid Surface, Corian® Joint Adhesive is the ONLY joint adhesive approved for making rigid bonds to Corian® Solid Surface products. Use this adhesive for inconspicuous seams between Corian® Solid Surface products.

A flexible bond between Corian® Solid Surface and Corian® Solid Surface or another material – A flexible bond that allows movement is required when bonding Corian® Solid Surface to other materials or when the design requires expansion. The flexibility of silicone adhesive allows movement due to thermal expansion or contraction. When bonding to substrates or support frames where the silicone will not be visible, 100% silicone adhesive is recommended. For visible expansion joints, either between Corian® products or to other materials, such as adjoining walls, various colors of silicone sealant are available.

A temporary bond to hold surfaces of Corian® Solid Surface in place while the main adhesive system cures – Temporary bonds, either for adhering clamping blocks or for temporary adhesion while the main adhesive cures, can be useful. Hot melt adhesive can be used for temporary bonds, but never for permanent bonding.

A. Safety

Please read the Safety Data Sheets (SDS) for these adhesives. The SDS documents include important safety information and may be found at msds.dupont.com.

B. Joint Adhesive

Color-coordinated Corian® Joint Adhesive is the only endorsed adhesive for creating an inconspicuous hard seam. It is produced in a range of specific colors to complement solid surface sheet and shape products. Some adhesive colors can be used with multiple colors of Corian® Solid Surface. Refer to suggested color information. Exact color match cannot be guaranteed. Technical Data can be found in *Corian® Joint Adhesive*, K-29803.

Corian® Joint Adhesive creates a rigid bond and should only be used to bond Corian® Solid Surface to Corian® Solid Surface. Bonding Corian® Solid Surface to any other material, including other brands of solid surface should be done with flexible silicone adhesive/sealant except where explicitly approved by DuPont. Bonding Corian® Solid Surface sinks or lavatories to Corian® Quartz surfacing is an approved application.

Corian® Joint Adhesive is provided in two sizes, 50 mL and 470 mL (bulk). All joint adhesive must be used by expiration date printed on the container.

Corian® Joint Adhesive long term storage of tubes can be done with the cartridge stored vertically or horizontally. Corian® Joint Adhesive may be used immediately.

Corian® Joint Adhesive is thixotropic and will have minimal flow after application. Place bead at center of thickness. Apply in continuous bead and do not overlap as that may entrain air.

The adhesive will begin to cure as soon as it is mixed within the mixer tip. If not using the adhesive within five minutes (higher temperature will shorten this time) remove the mixer tip and replace the plug, taking care to wipe the opening carefully so the components are not mixed.

The adhesive should always be used by its expiration date as shown on the label. This varies by adhesive.

CORIAN® JOINT ADHESIVE

Daaaaaaaa COLOR NAME
EXP UKMMYY-nn
xxxxxxx yyyyyy

Daaaaaaaa	product code
MMYY-nn	Expiration Month Year
xxxxxxx yyyyyy	batch number, cartridge number

Example label

D1553131 GLACIER WHITE

EXP UK0121-045

1930421 000856

Glacier White adhesive that expires last day of January 2021.

If needed, report the entire code to report quality issues.

HELPFUL HINTS:

Follow all instructions attached to the cartridge. Pay particular attention to the safety and first aid details

Do not use adhesive that is past the use by date.

Vehicles can reach excessive temperatures on hot sunny days. Make sure the adhesive stays cool while transporting it to the job site.

If adhesive is cold, allow to warm to room temperature before using.

When using a manual dispenser, simulate the constant pressure of an air powered dispenser. Changes in pressure from pressurizing the cartridge will affect mixing and set time.

Adhesive cures faster in warmer temperatures. When applying adhesive in a warm room, be sure to have adequate help to clamp the pieces together before the glue begins to harden.

Always use lint free white cloths or white paper towels when using adhesive. The adhesive may extract dyes or pigments from colored materials.

Usage instructions are also available in a graphical format in *Corian® Joint Adhesive Dispensing Instructions*, K-29970.

470 mL (bulk) Cartridge Preparation and Use

The following steps are essential to fully remove air and ensure the two components are properly mixed at the right ratios. Use only DuPont recommended mixer tips for proper cure.

- Corian® Joint Adhesive may be used immediately
- Place cartridge in dispenser. Remove retainer nut. Remove the gray chamber plug. Set plug aside for later use.
- Make sure the pressure regulator is shows 0 psig before attaching the air hose.
- Connect dispenser to air source and adjust pressure. **Start at 29 psig (2 bar) and adjust as needed. Do not extrude Corian® Joint Adhesive above 70 psig (4.8 bar) as this will result in poor cure.**

If the air line does not have a gauge, turn regulator knob on gun counterclockwise until it stops. Then turn knob about three full revolutions clockwise. Dispense a small test bead, then adjust as necessary.

- Hold end of cartridge over paper cup. The tip position is not important for Corian® Joint Adhesive. While pointing dispenser away from anyone, pull trigger to allow any air trapped inside cartridge to escape and to fill chambers with adhesive, ensuring the flow of each component is balanced. Release trigger. If using manual dispenser, squeeze handle slowly until air is gone and both chambers are full, then push tab on back of dispenser. **There may be more of one component, extrude until each component is coming out from each nozzle (adhesive components are then balanced).**
- Keeping cartridge upright, put mixer tip on cartridge and secure with retaining nut.

Mixer tip will only fit one way. Slip retainer nut over mixer tip, and lock it securely in place by giving quarter turn clockwise. Mixer tip fit is very snug. Be sure it is in proper position before using, or leaking around tip may occur.

- Keeping the dispenser angled upwards to aid air removal from the mixer tip, adjust pressure to desired setting and run out a 4" (102 mm) bead of adhesive onto a paper towel. By the end of the bead, the bead should be air free and uniform in color. If necessary, extrude additional adhesive until uniform appearance is achieved. **Do not start seaming until extruded adhesive is air free and uniform in appearance.**
- Depending on the temperature of the room, the dispenser can be set down for approximately 5 minutes before a tip change is needed. Since the adhesive will cure faster in warmer temperatures, a tip change may be needed in less than 5 minutes if you're working in a hot environment.

Do not place curing adhesive in trash. Allow adhesive to harden first.

- To remove cartridge from air dispenser, press red button on back of hand grip until piston is completely retracted. Press small black button on underside of dispenser housing to dislodge cartridge.
- To remove cartridge from manual dispenser, press lever behind handle and, retract the plunger manually. Press small black button on underside of dispenser housing to dislodge cartridge.
- To store unused portions, first remove cartridge from dispenser, remove retainer cap and discard mixer tip. Replace chamber plug in end of cartridge, screw on retainer nut to secure plug with slotted metal washer.

HELPFUL HINTS

If you have not used the entire cartridge and you wish to store for further use: remove the tip and retaining nut, wipe any residue with a white cloth or paper towel, seal the cartridge with the plug, replace the retaining nut and replace slotted washer.

The 470 mL (bulk) cartridge is equivalent to approximately 9 small tubes.

As the 470 mL (bulk) cartridge is normally used for large glue jobs, it is important that all preparation is complete before gluing commences.

The manual cartridge gun eliminates the need to use the air hose system, as it works by hand pressure only. For best operation, simulate the smooth continuous pressure of an air-operated dispenser.

50 mL Cartridges Preparation and Use

The following steps are essential to fully remove air and ensure the two components are properly mixed at the right ratios. Use only DuPont recommended mixer tips for proper cure.

- Corian® Joint Adhesive may be used immediately
- For all adhesives: Remove cap and save.
- Pointing cartridge up, place cartridge in dispenser and close the black latch. The cartridge only fits in one way.
- Hold end of cartridge over paper cup. The tip position is not important for Corian® Joint Adhesive. While pointing dispenser away from anyone, squeeze handle slowly to allow any air trapped inside cartridge to escape and to fill chambers with adhesive , ensuring the flow of each component is balanced. **There may be more of one component, extrude until each component is coming out from each nozzle (adhesive components are then balanced).**
- Install mixer top and twist to lock in place.

Mixer tip will only fit one way. Line up the raised point on mixer tip. The cap fits into the v-notch on cartridge. Spin the cap a quarter of a turn clockwise to lock tip into place.

- Keeping the dispenser angled upwards to aid air removal from the mixer tip, squeeze dispenser handle slowly and dispense a bead about 1/4" (6 mm) wide and the length of the tip onto a paper towel or scrap piece of paper, cardboard, etc. By the end of the bead, the bead should be air free and uniform in color. If necessary, extrude additional adhesive until uniform appearance is achieved. **Do not start seaming until extruded adhesive is air free and uniform in appearance.**

Do not place curing adhesive in trash. Allow adhesive to harden first then dispose of properly.

- Depending on the temperature of the room, the dispenser can be set down for approximately 5 minutes before a tip change is needed. Since the adhesive will cure faster in warmer temperatures, a tip change may be needed in less than 5 minutes if working in a hot environment. At higher temperatures storing the adhesive in an air-conditioned area until use will allow more working time.
- To remove cartridge from dispenser, press tab on back of dispenser and retract plunger and lift black latch.
- To store unused adhesive, remove tip, wiping any residue with a white cloth or paper towel and replace cap.

Corian® Joint Adhesive Storage

Adhesive should be stored in a well-ventilated room, in the dark. The recommended storage temperature range for Corian® Joint Adhesive is 41-73°F (5-23°C). Cartridges should be stored on their sides. Follow local regulations for flammable material storage. Use precautions during transport, as vehicles can rapidly reach elevated temperatures. Exposure to elevated temperatures will shorten shelf life. Do not store in freezer.

Storing cartridges with tip in place may cause blockage or even curing of the adhesive within a cartridge. Always remove the tip and replace the plug for storage.

Corian® Joint Adhesive Disposal

Storage, transportation, and disposal must be in accordance with applicable regulations. Do not flush to surface water or sanitary sewer system. Do not incinerate in closed containers.

C. Silicone Adhesives/Sealants

A flexible bond that allows movement is required when bonding Corian® Solid Surface to other materials or when the design requires expansion. The flexibility of silicone adhesive allows movement due to thermal expansion or contraction. When bonding to substrates or support frames where the silicone will not be visible, 100% silicone adhesive is recommended. If there is a concern that the silicone may"show through", such as with light colors of 1/4" (6 mm) Corian® sheets, then clear or translucent may be the best color choice. For visible expansion joints, either between Corian® surfaces or to other materials, such as adjoining walls, use a silicone adhesive/sealant in a color that complements the solid surface color.

Silicone adhesives require some bond thickness to allow movement. They are best applied as a bead that retains some thickness after clamping.

Silicone cures by reacting with water in the air and exposure to air is required to cure. Avoid applying in large dabs or enclosed "picture frames" as this will slow cure.

Cure is most rapid between 40-60% relative humidity (RH). Cure will be slower both at very high and very low humidity. While some bonding occurs quickly, full cure generally takes more than a week. If clamping or bracing is not practical, hot-melt adhesives may be used to hold the materials in place until the silicone cures.

D. Hot-Melt Adhesives

Hot-melt adhesives are useful for TEMPORARY bonds, either to hold material in place until the main adhesive cures or for bonding blocks for clamping. They should NEVER be used for permanent bonds. Use an adhesive that is recommended for plastics. An "open" or "set" time of one minute is desirable. The adhesives will cool quickly once they come in contact with Corian® Solid Surface.

CORIAN® SOLID SURFACE
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E. Referenced Documents

Corian® Joint Adhesive, K-29803

Corian® Joint Adhesive Dispensing Instructions, K-29970.

PLEASE VISIT OUR WEB SITE: WWW.CORIAN.COM OR CONTACT YOUR CORIAN® REPRESENTATIVE FOR MORE INFORMATION ABOUT CORIAN® SOLID SURFACE