

SEALANTS
33S SILICONE

PRODUCT NAME

CRL 33S Silicone
One-Component Silicone Elastomeric Sealant.

PRODUCT DESCRIPTION

CRL 33S Silicone is a one-component room temperature curing silicone elastomer. 33S Silicone is a proven construction sealant with various field applications in place that continue to perform and meet building needs.

CRL 33S Silicone complies with the following Federal Specifications:

- TT-S-001543A (COM-NBS) Class A, Federal Specification for Silicone Building Sealants
- TT-S-00230C (COM-NBS) Class A, Non-Sag Federal Specification for One-Component Sealants
- ASTM C920 Standard Specification for Elastomeric Joint Sealant as Type S, Grade NS, Class 25, Use NT, G, and A
- CAN/CGSB-19.13-M97

BASIC USES

CRL 33S Silicone is especially designed for joining and sealing a variety of structural materials (glass, aluminum, metal alloys, and many plastics). It will seal curtainwall joints, multi-pane windows, steel windows, aluminum windows, glass partitions and skylights. Indoor uses include sealing around bathtubs, showers and sanitary installations (clear, white, translucent white and tan colors contain an additive that makes the cured silicone resistant to mildew). CRL 33S Silicone in all colors meets the requirements of FDA regulation number 21CFR177.2600 for use in food-related applications such as walk-in freezers, refrigerated trucks, etc.

Certified by NSF to Standard 51-Plastic Materials and Components used in Food Equipment.

CRL 33S Silicone is a "UL Recognized Component".

LIMITATIONS

CRL 33S is not recommended for:

- Use as structural silicone, or insulating glass glazing.
- Concrete and stone expansion joints, horizontal decks, patios, driveway or terrace joints where abrasion or physical abuse is encountered.
- Sealing submerged joints, particularly where porous surfaces permit water infiltration to the bond surface.
- Interior or exterior structural sealing below the waterline in marine applications.
- Designs that will be painted after application of the sealant. Paint films bridge the sealant but do not adhere to the sealant.
- Tooling techniques using solvents or detergent soap solutions are not recommended.

- CRL 33S Silicone should not be applied in applications where appearance is critical without conducting a test to determine its compatibility and migration to the assembly surfaces.
- Totally confined spaces, because the sealant requires atmospheric moisture for cure
- Auto trim
- Appliance trim (i.e., adhesive trim)
- Black 33S (Cat. No. 33SBL) is recommended for glass-to-glass butt joints because butt joints sealed with clear sealant may contain small amounts of air that are trapped during the packaging and/or application of the sealant, as well as bubbles that can form during the curing of the silicone due to gas that is given off or movement of the glass before final cure. Appearance standards and subsequent repairs (e.g., limited to sight lines) should be established and agreed upon prior to sealant application, if clear is used.

SURFACE LIMITATIONS

CRL 33S Sealant should not be applied to the following surfaces:

- Not recommended for surfaces with special protective or cosmetic coatings without prior consultation of the manufacturer. Such surfaces include, but are not limited to, mirrors, reflective glass, surfaces coated with polyethylene or polypropylene where delamination is possible.
- Construction materials that may exude oils, resins, plasticizers or solvents. These include, but are not limited to, unfinished or impregnated woods, certain rubber or plastic gaskets and tapes, and failed non-silicone sealants or caulking compounds.
- Concrete, marble, limestone, lead or lead-coated surfaces, and copper are not acceptable substrates for CRL 33S Silicone.
- Unclean or wet surfaces.

TECHNICAL DATA

The physical properties of CRL 33S Silicone are shown in Table 1.

| TABLE 1 - PHYSICAL PROPERTIES | |
|--|--------------------------------|
| Property/Test Methods | Value |
| Shore A (Hardness) ASTM C-661 | 21 |
| Ultimate Tensile Strength, ASTM D-412 | 232 psi |
| Lap Shear ASTM D-1002 | 190 psi |
| Tear Strength | .25 ppi |
| Elongation at Ultimate Break, ASTM D-412 | 512% |
| Elasticity Modulus at 100% psi, ASTM D-412 | .80 psi |
| Consistency | Non-Flowing |
| Specific Gravity | 0.96 |
| Tooling Time | Varies with Temperature/RH |
| Tack Free Time ASTM C-679 | 13 Minutes |
| (Movement Capability), ASTM C-719 Modified | 25% |
| VOC | .9 g/L (0.14%) |
| Flow; Sag or Slump, ASTM C-639 | Nil |
| UV Resistance, ASTM C-793 | No Change After 1 Year |
| Service Temperature | -90°F (-68°C) to 400°F (204°C) |

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PRINCIPLES OF JOINT DESIGN

Figure 1 illustrates why a thin bead of silicone sealant will accommodate more movement than a thick bead. Obviously, the thin bead is the most desirable.

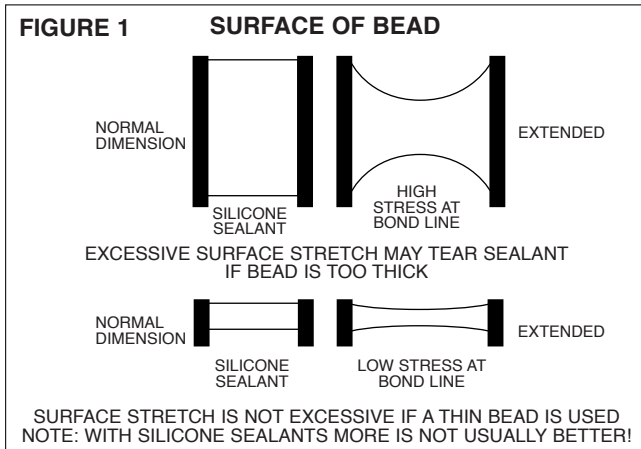
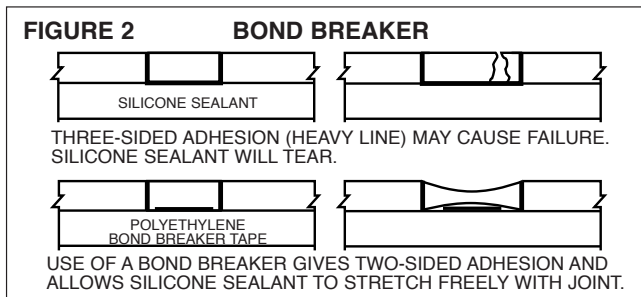


Figure 2 illustrates why silicone sealants need bond breaker tape to prevent undesirable three-sided adhesion.



JOINT DIMENSIONS

Joint width should be four times anticipated movement, but at least 1/4" wide. Maximum joint movement should not exceed 25% applicable to both horizontal and vertical joints. CRL 33S generally follows standard ASTM Specifications (2 to 1, width to depth ratio), when used at widths of 1/4" or more.

INSTALLATION

CLEANING

CRL 33S Silicone requires standard cleaning procedures prior to sealant application. Clean all joints and glazing area by removal of foreign matter and contaminants such as oil, dust, grease, frost, water, surface dirt, old sealants or glazing compounds, as well as any protective coatings. Porous substrates should be cleaned where necessary by grinding, saw cutting, blast cleaning (sand or water), mechanical abrading or a combination of these methods which will be required to provide a sound, clean and dry surface for sealant application. Metal, glass and plastic surfaces should be cleaned by a solvent procedure or by mechanical means. Detergent or soap and water cleaning treatments are not recommended. Protective films must be removed by a solvent recommended by the manufacturer of the component or other means which leave no residue. In all cases where used, solvents shall be applied with

one clean cloth or lint-free paper towel, and then wiped clean with a second cloth or towel. Cleaning solvents should not be allowed to air dry or evaporate without wiping.

Architectural coatings, paints and plastics shall be cleaned with a solvent approved by the manufacturer of that product. Cleaning of all surfaces should be done on the same day in which sealant is applied.

| TABLE 2 - PRIMER RECOMMENDATIONS | | |
|---|-----------------------|---------------------|
| Surface | Surface Pre-Treatment | Primers for CRL 33S |
| Steel (Galvanized, Red Lead, Primed, Cold Rolled) | Solvent Wipe | SIL2100 |
| Stainless Steel | Solvent Wipe | SIL2100 |
| Aluminum (Light Alloys) | Solvent Wipe | SIL2100 |
| Copper (Brass, Bronze) | | Not Recommended |
| Concrete and Masonry | | Not Recommended |
| Wood (Unfinished, Hard Woods) | Solvent Wipe | SIL2100 |
| Painted Surfaces | Solvent Wipe | SIL2100 |
| Glass | Solvent Wipe | Primer Not Needed |
| Commonly Used Thermoplastics | Solvent Wipe | SIL2100 |

MASKING

Areas adjacent to joints should be masked to assure neat sealant lines. Do not allow masking tape to touch the clean surfaces to which the silicone is to adhere. Tooling should be completed in one continuous stroke immediately after sealant application and before a skin forms. Masking should be removed immediately after tooling.

PRIMING

A bead of silicone sealant applied to the material surface at the job site or manufacturing location to test adhesion prior to general job use is always recommended. Primers are required for some surfaces. See Table 2 for primer recommendations. Primers must be applied according to manufacturer's printed instructions. Priming is not usually required on glass, standard aluminum finishes and most metals.

APPLICATION

- Install backup material or joint filler, setting blocks, spacer shims and tapes as specified.
- Apply CRL 33S Silicone with hand gun or pressure equipment according to FGMA standards in a continuous operation using a positive pressure adequate to properly fill and seal the joint. Tool or strike the sealant with light pressure to spread the material against the backup material and the joint surfaces. A tool with concave profile is recommended to keep the sealant within the joint.
- In glazing, tool the sealant applied at the sill so rain, melting snow and cleaning solutions will not pool.

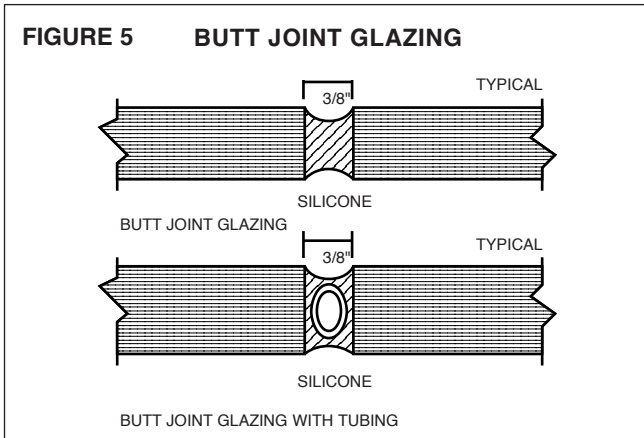
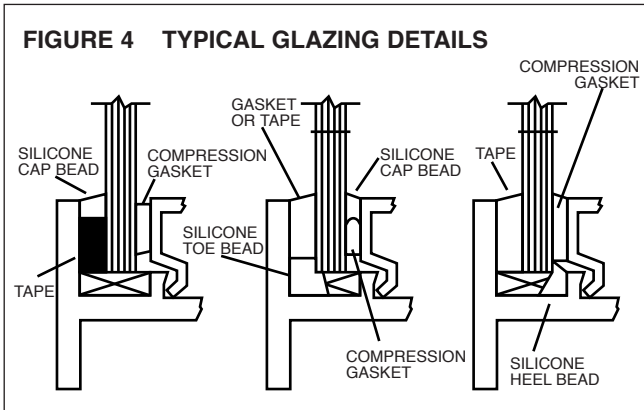
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- CRL 33S Silicone can be applied at extremely low outdoor temperatures provided that surfaces are clean, dry and frost-free. It can be applied in temperatures as low as -35° F (-37° C) and as high as 140° F (60° C).
- Excess sealant should be wiped clean from glass, metal and plastic surfaces while still uncured and followed with a commercial solvent such as xylol, toluol, or methyl ethyl ketone. CRL Silicone Remover Cat. No. SR200 cleans uncured silicone sealant. Should sealant accidentally contact and begin to cure on adjacent porous surfaces, the excess sealant should be allowed to progress throughout the initial cure of setup. It should then be removed by abrasion or other mechanical means.



Cured sealant is usually very difficult to remove without altering or damaging the surface to which it has been misapplied. CRL Cat. No. SR200 Sealant Remover may assist cured sealant removal in many cases.

PRECAUTION

Read Material Safety Data Sheet before using product for the first time. Uncured sealant may irritate the eyes. Avoid contact with eyes and skin. Contact lens wearers take appropriate precautions.

IN CASE OF CONTACT, FLUSH EYES WITH WATER, CALL A PHYSICIAN. Remove from skin with dry cloth or paper towel. KEEP OUT OF REACH OF CHILDREN.

If CRL 33S Silicone is used in direct contact with any other sealant or elastomer, a compatibility test must be conducted by purchaser or user prior to acceptance. The suitability of this product, for each intended use, must be determined by the purchaser prior to acceptance.

SHELF LIFE/STORAGE

Store at or below 80°F (27°C). Dispose of empty containers in accordance to federal, state and local regulations.

33S has a shelf life of 24 months.

WARRANTY LIMITATIONS

The warranty specifically excludes sealant failure due to:

1. Appearance changes due to deposits of dirt and other materials.
2. Decomposition of the underlying substrates.
3. Excess movement of the structure which exceeds published specification for movement caused by building settlement, design error, or construction error.
4. Mechanical damage caused by external sources.
5. Natural disasters such as fires, lightning, earthquakes, tornadoes, or hurricanes.

MAINTENANCE

No maintenance should be needed. If silicone sealant becomes damaged, replace damaged portion. Clean surfaces in damaged area and repair with fresh 33S Silicone Sealant.

PACKAGING

33S Silicone Sealant is packed in 10.3 fluid ounce plastic cartridges that have been tested and proven to prolong freshness and shelf life. 30 cartridges per case, which fit cartridge caulking guns. Also available in 4.5 gallon pails and 52 gallon drums.

TECHNICAL SERVICE

Complete technical information and literature is available from C.R. Laurence Co., Inc. Any technical advice furnished by the company or any representative of the company concerning any use or application of any sealant is believed to be reliable, but the company makes no warranty, expressed or implied, for any use or application for which such advice is furnished.

LIMITED WARRANTY NOTICE

CRL and its manufacturer warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products but also upon many factors beyond our control in the application process. Therefore, except for such replacement or refund CRL and its manufacturers make no warranty or guarantee, expressed or implied, including warranties of fitness or merchantability, respecting its products. CRL and its manufacturers shall have no other liability with respect thereto. User shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the CRL Product Manager.

COOPERATIVE TESTING

Materials submitted for testing should be sent to:

C.R. Laurence Co., Inc.
 Technical Sales Department
 PO Box 58923
 Los Angeles, CA 90058-0923

This program is intended to eliminate potential field problems by pretesting CRL construction sealants with samples of the building materials on which the sealant will be applied. The test will aid in determining the proper surface preparation method, effective solvents for cleaning and whether priming is necessary to achieve optimum adhesion. Following this procedure will remove many of the unknown variables which affect field success.

Test samples of substrates should be identified as to manufacturer, origin, designed use, building project, person and firm originating the request. Appropriate sketches or drawings showing the intended use can be helpful.

C.R. LAURENCE CO., INC. LOCATIONS

United States

Los Angeles, California
 2503 E Vernon Avenue
 Los Angeles, CA 90058-1897
 Phone: (323) 588-1281

Boston Area
 97 Robert Treat Paine Drive
 Taunton, MA 02780-1267
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Phoenix, Arizona
 640 S. 54th Avenue
 Phoenix, AZ 85043-4731
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CRL Australia

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 9 Shale Place
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