Construction

Sikasil® WS-305 CNUS

Professional Grade, Neutral Cure, Medium Modulus Silicone Sealant for Weathersealing and Curtain Walling

Description

Sikasil® WS-305 CNUS is a versatile, one-component, non-sag, elastomeric, neutral-cure silicone sealant with high movement capability. It has primerless adhesion to most nonporous surfaces and guns easily in all weather conditions.

Where to Use

- Conventional glazing.
- Perimeter sealing of windows, doors and skylights.
- Unitized curtain wall assembly and field installation.
- Precast expansion joints.
- Weather sealing of most common building materials.

Advantages

- Outstanding UV- and weathering-resistance.
- May be applied in below freezing temperatures if substrates are completely dry, frost free and clean.
- Excellent gunability in all temperatures.
- Adhesion to porous and non-porous materials, including glass, aluminium, metal, tile, fibreglass, plastic, ceramic, masonry, concrete, brick, powder coated aluminium, fluoropolymer painted surfaces, vinyl, PVC, granite, limestone, marble and wood
- Capable of accommodating ± 50% joint movement
- Unaffected by most atmospheric conditions.
- Meets industry specifications: ASTM C920 Class 50, TT-S00230C, TT-S001543A.

Technical Data

Packaging	600 mL (20 US fl. oz) sausage, 20/case 17 L (4.52 US gal) pails and 197 L (52 US gal) drums are available by special order.
Colours	Aluminum, Anodised Grey, Black, Bronze, Colonial White, Grey, Limestone, Medium Bronze, White. Custom colours available upon request.

Yield

Linear meters per litre

mm (in)	Width 6 (1/4)	Depth 13 (1/2)
6 (1/4)	24,8	
13 (1/2)	12,4	6,2
19 (3/4)	8,3	4,1

Shelf Life	12 months in original, unopened containers when stored at or below 25°C (77°F).
Application Temperature	Sealant may be applied in below freezing temperatures, but surfaces must be dry, frost free and clean. Sealant should be installed when the joint is at mid-range of its anticipated movement.
Service Temperature	-40 to 150°C (-40 to 302°F)

Properties at 25°C (77°F) and 50% R.H.

Uncured Material	
Density CQP 006-4	1.49 kg/L approx.
Non-sag Properties ISO 7390	< 2 mm approx.
Skin-Over Time	35 min
Tack-Free Time ASTM C679	180 min
Cure Rate	3 mm (1/8 in) / 24 hrs
Cured Material (21 days @ 25°C (77°F) and 50% R.H.)	
Movement Capability ASTM C719	±50%
Elongation at Break ASTM D412	900%
100% Modulus ASTM D412	0.4 MPa (58 psi)
Shore A Hardness ASTM C661	15
Tensile Strength ASTM D412	1 MPa (145 psi)

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Thermal Resistance	
Long term	180°C (356°F) approx.
Short Term (4 hours)	200°C (392°F) approx
Very Short Term (1 hour)	220°C (428°F) approx

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

How to Use

Joint Detailing

The number of joints and the joint width should be designed for a recommended joint movement of +50% and -50% at time of installation.

The depth of the sealant should be 1/2 the width of the joint. The minimum sealant depth is 6 mm (1/4 in), the maximum is 13 mm (1/2 in).

To control the sealant depth, use a closed cell polyethylene, non-gassing polyolefin or open cell polyurethane backer rod. Closed cell backer rod should be 25% larger than joint width; do not compress more than 40%. Open cell should be compressed 40%. Do not use open cell rod in horizontal on grade joint or with EIFS.

If the joint depth does not allow for a backer rod, use polyethylene bond breaker tape to prevent three-sided adhesion

Surface Preparation

All joint surfaces must be clean, sound, dry, and frost free. Joint walls must be free of oils, asphalt, tar, bituminous materials, grease, paints, coatings or sealers. Curing compounds, release agent residues, glazing compounds, and any other foreign matter must be removed. Porous and architecturally sensitive surfaces should be the subject of compatibility testing prior to proceeding.

Porous substrates should be cleaned by mechanical methods, such as grinding, saw cutting, blast cleaning (sand or water), or wire brushing. Dust, loose particles, etc. should be blown out of joints with oil-free compressed air or vacuum cleaned to remove all material which may interfere with adhesion.

Non-porous substrates should be cleaned by using a solvent wipe method, applied by lint free and clean rags and allow the solvent to evaporate before installing the sealant. Xylene or an approved commercial solvent can be used, ensuring the solvent manufacturer's instructions are strictly followed. Soap or detergent and water cleaning treatments are not recommended. Cleaning of all surfaces should be done just prior to the sealant application.

Apply Sikasil® WS-305 CN[US] only to suitably prepared and cleaned substrates. Long term adhesion and performance is dependant upon such.

Priming

Sikasil® WS-305 CN[US] is designed to obtain adhesion without the use of a primer, however, certain substrates may require a primer. A field test is recommended to determine the adhesion of the sealant and/or primer and sealant combination, to confirm results and the suitability of the proposed application. Consult Sikasil® Primer Data Sheets or contact Sika Canada Technical Services for additional information on priming.

NOTE: Priming is never a substitute for proper surface cleaning and preparation.

Application

For best performance Sikasil® WS-305 CN[US] should be gunned into joints when the joint slot is at the mid-point of its designed expansion and contraction.

Do not open the product container until preparation and, where necessary, priming work has been completed.

When installing during time of large temperature fluctuations, such as spring or fall, and in joints designed for movement greater than ±25%, be aware that significant joint movement before cure, may cause aesthetic issues such as ripples in the sealant surface. Performance will not be affected

Apply the sealant using a professional caulking gun or dispensing equipment. Place the nozzle deep into the joint and gun with a steady and even flow of sealant preceding the nozzle to avoid air entrapment. Also avoid overlapping of the sealant as this also entraps air. Extrude in one continuous operation with consistent positive pressure to force the material into the joint.

Tool the sealant at once after application and before a skin forms (approximately 25 minutes). Tool to a concave shape and ensure adequate pressure to achieve maximum adhesion with the joint walls. Dry tooling is recommended.

Note: Do not use spray water or other liquids when tooling.

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Clean Up

Clean all tools and equipment and remove excess sealant from substrates, all while the material is uncured, using a commercial solvent, such as xylene. Strictly follow the manufacturer's instructions for use and warnings. Once hardened, product can only be removed mechanically. Wash soiled hands and skin thoroughly in hot soapy water or use Sika® Hand Cleaner towels.

Limitations

- The minimum sealant depth is 6 mm (1/4 in), the maximum is 13 mm (1/2 in).
- Do not apply when substrate temperatures are below -28°C (-20°F) or above 54°C (130°F).
- Lower temperature and humidity will extend tack free and cure rates.
- Do not apply to damp or wet surfaces.
- Substrates must be completely dry, frost free, and clean.
- Do not apply to surfaces that are to be painted, as the sealant surface will not hold paint.
- Do not apply to substrates that bleed oil, plasticizers or solvent.
- Do not allow the uncured sealant to come in contact with solvent or curing polyurethanes.
- Avoid contact with materials or surfaces impregnated with, or containing oil, asphalt, tar, or bituminous materials.
- This material is not intended for immersion or vehicular traffic.
- Brass and copper may be discoloured through contact: apply a sample prior to application.
- Some porous and architecturally sensitive substrates, such as concrete, brick, marble, granite and limestone may promote staining. Test products in discrete locations for compatibility and appearance.
- Allow treated wood to age for at least six months before application of the sealant.

Health and Safety Information

For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the **most recent Material Safety Data Sheet** containing physical, ecological, toxicological and other safety-related data.

KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions, within their shelf life. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users should always refer to the most recent issue of the Product Data Sheet for the product concerned, copies of which will be supplied on request or can be accessed in the Internet under www.sika.ca.

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