



PRODUCT DATA SHEET

Edition 12.2017/v1
CSC Master Format™ 07 92 13
ELASTOMERIC JOINT SEALANTS

Sikasil® WS-290

ULTRA-LOW MODULUS, NEUTRAL-CURE AND NO-BLEED SILICONE SEALANT

Description	Sikasil® WS-290 is an ultra-low modulus, one-component, non-sag, elastomeric, neutral-cure silicone sealant. It possesses a no-bleed formulation and is suitable for above grade, horizontal and vertical, interior or exterior applications.
Where to Use	<ul style="list-style-type: none"> ▪ Conventional glazing. ▪ Installation and perimeter sealing of windows, doors and skylights. ▪ EIFS system joints. ▪ Curtain walls. ▪ Precast expansion joints. ▪ Weather sealing of joints in most common building materials.
Advantages	<ul style="list-style-type: none"> ▪ 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, EIFS, granite, limestone, marble and wood. ▪ Capable of accommodating +100/-50 % joint movement. ▪ Non-staining, maintains appearance of architectural substrates. ▪ Unaffected by most atmospheric conditions. ▪ Meets industry specifications: ASTM C920, Type S, Grade NS, Class 100/50, Use NT, M, G, A, O; TT-S-00230C, Type II, Class A; TT-S-001543A, Class A; CAN/CGSB 19.13-M87, AAMA 808.3 and California Resource Board 2003 requirements for VOC content. ▪ Meets ASTM C1382 when used in Exterior Insulation Finish Systems (EIFS) Joints.

Technical Data

Packaging	295 mL (10 US fl. oz) cartridge, 24/case 600 mL (20.3 US fl. oz) sausage, 20/case			
Colours	Aluminum, Black, Bronze, Colonial White, Limestone, Medium Bronze, White.			
Yield	<u>Linear meters per litre</u>		<u>Linear feet per cartridge</u>	
	Width	Depth	Depth	Depth
	mm (in)	6 (1/4)	13 (1/2)	6 (1/4) 13 (1/2)
	6 (1/4)	24,8		24
	13 (1/2)	12,4	6,2	12 6
	19 (3/4)	8,3	4,1	8 4
Shelf Life	12 months in original, unopened containers when stored at or below 32 °C (90 °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	-62.2 to 176 °C (-80 to 350 °F)			
Properties at 25 °C (77 °F) and 50 % R.H.				
Uncured Material				
Extrusion Rate g/min ASTM C1183 mod.	+100/-50 %			
3 mm (1/8 in) orifice @ 0.34 MPa (50 psi)	90			
Sealant Slump ASTM D2202	Nil			
Rheological, Vertical ASTM C639				
@ 49 °C (120 °F)	Non-sag			
Skin-Over Time	30 min			
Tack-Free Time ASTM C679	50 min			
Cure Rate	1.5 mm (1/16 in) / 24 hrs			
Cured Material (21 days @ 25 °C (77 °F) and 50 % R.H.)				
Movement Capability ASTM C719	+100/-50 %			
Elongation at Break ASTM D412	1200 %			
100% Modulus ASTM D412	0.17 MPa (25 psi)			
Shore A Hardness ASTM C661	15			
Tensile Strength ASTM D412	0.86 MPa (125 psi)			
Peel Strength ASTM C794	3.6 - 7.1 kg/cm (20 - 40 pli)			
Staining ASTM C1248	Passes			
Accelerated Weathering (QUV)				
10 000 hours	No change			
<i>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.</i>				

HOW TO USE

Joint Detailing

The number of joints and the joint width should be designed for a recommended joint movement of +100 % 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 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-290 only to suitably prepared and cleaned substrates. Long term adhesion and performance is dependant upon such.

Priming

Sikasil® WS-290 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-290 should be gunned into joint when 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 $\pm 25\%$, 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 30 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.

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

- Not intended for structural glazing.
- 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 for vehicular traffic.
- Brass and copper may be discolored through contact: apply a sample prior to application.
- Test sensitive substrates, such as mirror backings for compatibility before use.
- 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 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 shelflife. 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 information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

SIKA CANADA INC.

Head Office

601, avenue Delmar
Pointe-Claire, Quebec
H9R 4A9

Other locations

Toronto
Edmonton
Vancouver

1-800-933-SIKA
www.sika.ca

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