

Product Data Sheet

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 Sikagard® E.W.L.

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High-Build, Chemical, Corrosion and Abrasion Resistant Liquid-Applied Polyurethane Coating and Lining

Description	Sikagard® E.W.L. (Elastic Waterproof Lining) is a two-component, polyurethane-based and liquid-applied elastomeric coating. It has been specifically designed for use in water and wastewater applications, including those which require potable water contact certification. The cured material provides a chemical, corrosion, temperature and abrasion resistant lining. Sikagard® E.W.L. is one of the toughest coatings available, specifically formulated to meet the demanding needs of the water/wastewater industries.
Where to Use	<ul style="list-style-type: none"> ■ Tank lining. ■ Tank repairs. ■ Reservoir coating. ■ Joint sealing. ■ Chemical containment.
Advantages	<ul style="list-style-type: none"> ■ Liquid polyurethane, able to be applied to complex details, penetrations and irregular shapes within tanks. ■ Adheres to and bridges between common construction materials such as concrete and steel. ■ Forms a tough but elastomeric coating able to bridge cracks and joints. ■ ANSI/NSF 61 certified for potable water contact up to 82°C (180°F). ■ Excellent wear and abrasion service. ■ Resistance to a broad range of acids and alkalis. ■ UV stable. ■ Can be repaired when damaged or when new tank penetrations are installed. ■ Meets the most demanding health and safety requirements for drinking water, fish hatcheries, and food processing plants. ■ Environmentally sound, complying with the most demanding of VOC content standards.

Technical Data	
Packaging	18.9 L (5 US gal.) kit: Component A (resin): 16.6 L (4.4 US gal.) pail Component B (activator): 2.3 L (0.6 US gal.) jug
Colour	A unit consists of Component A (resin) in an underfilled can or pail and Component B (activator) in a bottle or jug. Quantities have been pre-measured to provide the proper mix ratio. Do not estimate proportions or part mix. Glossy black. When exposed to direct sunlight the gloss is reduced to matte within 3 - 6 months.
Yield	1.2 m²/L (50 ft²/US gal.) at 30 mils w.f.t. per coat, two coats to 60 mils w.f.t. total recommended. Coverage rates do not allow for surface profile, porosity or wastage.
Shelf Life	Component A (resin): 2 years when stored at -6 to 43°C (20 to 110°F); Component B (activator): 6 months when stored at 21 to 35°C (70 to 95°F) Precondition material to at least 15°C (60°F) before use.
Mix Ratio	Weight: 6.2:1 / Volume: 7.8:1
Service Temperature	-51 to 104°C (-60 to 220°F)
Properties at 23°C (73°F) and 50% R.H.	
Solids by Volume	88%
Density	Component A (resin) 0.95 kg/L (8 lb/US gal.) Component B (activator) 1.2 kg/L (10.1 lb/US gal.) Mixed and Cured 0.99 kg/L (8.3 lb/US gal.)
Pot Life	Approx. 30 minutes dependent upon application method and temperature.
Curing Time	Potable Water Service 2 weeks @ 60 w.f.t. @ 15°C (60°F) Other Applications 24 hours in certain conditions
Adhesion to concrete (dry)	
Elcometer	2.4 MPa (350 psi)



Abrasion Resistance ASTM D4060	
Taber Abrader, Wheel CS-17/1000 g/1000 cycles	0.0012 g loss
Elastomeric Waterproofing	
ASTM C836	Exceeds all criteria
ASTM C0957	Exceeds all criteria
Liner Performance Crack Bridging	
10 cycles @ -26°C (-15°F)	> 3 mm (¼ in)
After heat aging	> 6 mm (¼ in)
Extension to Break, ASTM D412	
	300%
Hardness, Shore A ASTM D2240	
@ 25°C (77°F)	65
Deflection Temperature	
ASTM D648	Below -51°C (-60°F)
ANSI/NSF 61	To 82°C (180°F)
Mullen Burst Strength, ASTM D751,	
50 mils	1 MPa (150 psi)
Liner Weight	
(60 mils wet film thickness)	Approx. 1.55 kg/m ² (31 lb/100 ft ²)
Recovery from 100% extension	
After 5 minutes	98%
After 24 hours	100%
Tensile Strength, ASTM D412	
100 mil sheet	Approx 6.9 MPa (1000 psi)
Weathering ASTM D822	
	5000 hrs
Softening Point, Ring & Ball ASTM D36	
	> 162°C (> 325°F)
Tear Strength ASTM D624 (Die C)	
	180 lb-in
Water Vapour Permeability ASTM E96	
Method E, 37°C (100°F), 100 mil sheet	0.03 perms
VOC Content	
	90 g/L (0.75 lb/US gal.)
<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

Surface Preparation

General

All substrates must be clean and dry with no oil, grease or loose debris. Sikagard® E.W.L. is recommended for porous and non-porous substrates. Perform adhesion tests to confirm adequacy of surface preparation.

Concrete

Concrete surfaces must be clean, sound and dry. Remove any dust, laitence, grease, oil, dirt, curing agents, wax, detritus and contaminants from the concrete by appropriate mechanical means, in order to achieve a profile equivalent to ICRI-CSP 4-6, exposing aggregate. The compressive strength of the concrete substrate should be at least 20 MPa (3000 psi) at the time of application of Sikagard® E.W.L.

Steel

Steel substrates must be dry, clean and sound. Remove all materials which might impede adhesion, including corrosion products, dirt, dust, grease, oils, detritus and contaminants by appropriate mechanical means, such as abrasive blast cleaning, in order to achieve SSPC-SP10 / NACE No. 2 Near White Blast for immersion situations or SSPC-SP6 / NACE No. 3 Commercial Blast for non-immersion service. Minimum profile must be 3 mil. Use Sikagard® E.W.L. Bonding Agent for greater adhesion. (See *separate Product Data Sheet.*)

Other Metals

Metal substrates, other than steel, must be dry, clean and sound. Remove all materials which might impede adhesion, including corrosion products, dirt, dust, grease, oils, detritus and contaminants by solvent clean and then appropriate mechanical means, such as abrasive blast cleaning, in order to achieve SSPC-SP1 The surface must also be deglossed. Use Sikagard® E.W.L. Bonding Agent for greater adhesion. (See *separate Product Data Sheet.*)

Previous Coatings and Linings

Sikagard® E.W.L. may be applied over some existing coatings and linings and achieve acceptable performance. Sikagard® E.W.L. Bonding Agent is recommended for greater adhesion. (See *separate Product Data Sheet.*)

Finished system results will vary due to project specific factors, including service conditions and nature of exposure. Therefore Sika Canada cannot accept responsibility for determining the suitability of an existing coating as a substrate for Sika products. The Owner or their Representative shall perform adhesion tests on any existing coating or lining to determine suitability.



<p>Priming/ Surface Conditioning</p>	<p>Porous substrates subject to outgassing or metal surfaces requiring barrier protection after blast-cleaning should be primed with Sika® MT Primer (<i>refer to separate Product Data Sheet</i>). Minimum waiting time after application of Sika® MT Primer and before applying Sikagard® E.W.L. coating must be at least 12 hours at 21°C (70°F). Maximum waiting time for the same procedure will be at most 48 hours at the same temperature. Should the maximum waiting time expire but less than 30 days have passed, the primer must be examined for contamination, the pH value checked and the primer solvent wiped with Xylene, before reapplication.</p> <p>Or:</p> <p>Uneven, profiled and blowholed substrates and those where a temporary moisture barrier is required, should be levelled and sealed with Sikagard® 75 EpoCem^{CA}. The minimum waiting time between Sikagard® 75 EpoCem^{CA} (<i>refer to separate Product Data Sheet</i>) and overcoating with Sikagard® E.W.L. shall be 24 hours and where a moisture barrier is needed the maximum waiting time to overcoat will be 3 days. Should a longer intercoat period be required, consult Sika Canada Technical Services for information.</p>
<p>Mixing</p>	<p>Thoroughly stir Component A (resin) of Sikagard® E.W.L. in its part-filled container using a slow-speed (200 - 300 rpm), 12 mm (½ in) drill to eliminate entrapping air. Use a 200 mm (8 in) mud or Exomixer type paddle suited to the volume of the container.</p> <p>Important: Do not draw air into the mix and under no circumstances agitate (shake) or stir Component B (activator) before adding to Component A (resin).</p> <p>Slowly add Component B (activator) to Component A (resin) while mixing and mix thoroughly for at least 3 minutes. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge at least once, to ensure complete mixing. When completely mixed Sikagard® E.W.L. should be uniform in colour and consistency. Mix only the quantity that can be used within its pot life.</p>
<p>Application</p>	<p>Apply Sikagard® E.W.L. directly to the clean, dry and suitably prepared substrate using a trowel, roller, squeegee or spray at the specified coverage rate and in at least 2 coats to achieve the recommended wet film thickness. Higher film thicknesses may be achieved, but an extended waiting time is required prior to putting the lining into potable water service.</p> <p>Spray equipment requires large diameter hoses and air supplied mastic gun or plural component spray equipment. Contact Sika Canada for specific recommendations. Spray equipment must be flushed regularly with mineral spirits during application to prevent material from setting up in the hose and pump.</p> <p>Sikagard® E.W.L. may be recoated in 1 hour, depending upon curing conditions, and must be recoated soon after the coating is touch dry (no longer comes off on polyethylene [typically within 4 hours of mixing]). If the coating has cured for longer than this time, the surface must be heavily abraded using a grinder or other mechanical means, and be free of dust and debris before overcoating. Use Sikagard® E.W.L. Bonding Agent for better adhesion. For immersion conditions, all coats must be applied within four hours of each other, except at joint lines.</p>
<p>Curing</p>	<p>Before placing Sikagard® E.W.L. into potable water service or similar applications, allow sufficient time for solvents to release from the coating.</p> <p>The required time for a 60 mil wet film thickness is two weeks at 15°C (60°F) but can vary if the thickness is greater or the curing conditions (ambient and substrate temperatures) are less conducive.</p> <p>For many other applications, Sikagard® E.W.L. may be placed into service after 24 hours have elapsed since the final coat was applied. Contact Sika Canada for specific recommendations.</p>
<p>Disinfection</p>	<p>The cured Sikagard® E.W.L. coating must be washed, rinsed, and disinfected before being put into service in potable water and fish pond service. Consult Sika Canada for advice.</p>



Clean Up Clean all tools and equipment, of uncured material, after use with mineral spirits. Spray equipment must be flushed through regularly during application to prevent material from curing in the hose and pump. Once hardened, material is more difficult to remove; soaking in solvent will soften the material and may assist in its mechanical removal.

- Limitations**
- Sikagard® E.W.L. is best installed by skilled and experienced applicators. Consult Sika Canada Technical Services for advice and recommendations.
 - Minimum substrate temperature: 10°C (50°F)
 - Substrate temperature must be at least 3°C (5.5°F) above the measured dew point.
 - Do not apply the material when the ambient or substrate temperatures are rising or the coating is in direct sunlight.
 - Do not apply in wet weather, when rain is imminent or when the applied coating or the substrate may become wet within 4 hours of application.
 - The material temperature should be at least 15°C (60°F) at the time of mixing and application. Sikagard® E.W.L. may be preheated to facilitate application at low temperatures, but working time will be reduced.
 - Do not thin or part mix the material.
 - Do not mix Sikagard® E.W.L. by hand; mechanically mix only.
 - Avoid contamination of product with water or moisture. Keep all containers tightly closed until ready for use. All equipment, air supplies, and substrates must be absolutely dry.
 - Use caution when applying Sikagard® E.W.L. in confined spaces.
 - Observe the curing times and especially the curing time before immersion into and service in potable water.
 - Sikagard® E.W.L. appears as a glossy black film when first applied but upon contact with direct sunlight the gloss will be replaced with a matte appearance within 3 - 6 months depending upon the degree of exposure.

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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