



PRODUCT DATA SHEET

Sikagard® Duochem-7500

CHEMICAL-RESISTANT EPOXY-NOVOLAC COATING/BROADCAST SURFACING/CONTAINMENT LINING

PRODUCT DESCRIPTION

Sikagard® Duochem-7500 is a two-component, high solids, epoxy-Novolac coating/broadcast surfacing/lining which possesses outstanding resistance to strong inorganic acids, concentrated sulphuric acid and oxygenated solvents.

WHERE TO USE

Sikagard® Duochem-7500 may only be used by experienced professionals.

- As a smooth, chemical-resistant lining on concrete or steel substrates subject to concentrated acids
- Protection of containment tanks, machine bases, plant floors and walls exposed to aggressive chemicals
- Protection against ground water contamination resulting from uncontained chemical spills
- As a broadcast, build-up surfacing to provide a durable wearing surface with improved traction in pedestrian areas where aggressive chemicals are present

PRODUCT INFORMATION

CSC MasterFormat®	09 96 35 CHEMICAL-RESISTANT COATINGS
Packaging	11.34 L (3 US gal.) and 56.7 L (15 US gal.) units
Appearance / Colour	RAL 7046 Telegrey 2, Amber-Clear
Shelf Life	2 years when stored in original, unopened packaging.
Storage Conditions	Store dry at temperatures between 5 °C - 32 °C (41 °F - 90 °F)
Solid content by weight	~96 %
Solid content by volume	~95 %

CHARACTERISTICS / ADVANTAGES

- User friendly mix ratio A:B = 2:1 (parts by volume)
- Can be applied as a smooth system or a broadcast build-up textured system incorporating aggregates
- Durable, impermeable and seamless
- Superior abrasion and impact resistance
- Excellent protection for new and old concrete and properly prepared steel surfaces against a wide range of aggressive chemicals, see product specific Chemical Resistance Guide.

APPROVALS / CERTIFICATES

Meets the requirements of CFIA and USDA for use in food plants.

Volatile organic compound (VOC) content < 50 g/L

Viscosity ~1600 cps (A+B Mixed)

TECHNICAL INFORMATION

Shore D Hardness	Smooth Coating	Broadcast Surfacing	(ASTM D2240)	
	~67	~72 *		
* 24 mesh silica sand used for broadcasting.				
Abrasion Resistance	Smooth Coating	Broadcast Surfacing	(ASTM D4060)	
	~170 mg (CS-17)	~833 mg ** (H-22)	1000 g (2.2 lbs.) /1000 cycles	
** Note; standard 28 MPa (4,060 psi) concrete exhibits ~3,870 mg of loss when tested as per this ASTM procedure using H-22 abrading wheels.				
Compressive Strength	Smooth Coating	Broadcast Surfacing	(ASTM D695)	
	~57 MPa (~8380 psi)	~23.7 MPa (~3435 psi)		
Tensile Strength	Smooth Coating	Broadcast Surfacing	(ASTM D638 TYPE IV)	
	~20.4 MPa (~2,960 psi)	~11.0 MPa (~1,595 psi)		
Elongation at Break	Smooth Coating	Broadcast Surfacing	(ASTM D638 Type IV)	
	~28%	~8.4%		
Pull-Off Strength	Smooth Coating	Broadcast Surfacing	(ASTM D7234)	
	~2.8 MPa (~406 psi) substrate failure	~3.6 MPa (~520 psi) substrate failure		
Resistance to Impact	Smooth Coating	Broadcast Surfacing	(ASTM D3029)	
	~5.8 J (~51.3 lb/in)	~1.5 J (~15.2 lb/in)		
	(microscopic cracks)	(microscopic cracks)		
	~6.2 J (~54.8 lb/in)	~10.5 J (~91.9 lb/in)		
	(major cracks)	(major cracks)		
Thermal Compatibility	Smooth Coating	Broadcast Surfacing	(ASTM C884)	
	substrate failure***	substrate failure***	-23 °C to 23 °C	
	*** Failure occurs in underlying concrete.			
Coefficient of Linear Thermal Expansion	Coefficient of Linear Thermal Expansion			
	Smooth Coating	Broadcast Surfacing	(ASTM C531)	
	N/A	~2.26 x 10 ⁻⁵ /cm/cm/°C (~1.25 x 10 ⁻⁵ / in/in/°F)		
Chemical Resistance	Consult Sika Canada			
Water Absorption		Smooth Coating	Broadcast Surfacing	(ASTM D570)
	24 hours	~0.42 %	~0.11 %	
	7 days	~1.02 %	~0.34 %	
	2 hours	~0.57 %	~0.10 %	
	boiling water			

Permeability to Water Vapour**Water Vapor Transmission**

	Smooth Coating	Broadcast Surfacing	(ASTM E96)
water method	~0.19 g/hr/m ² 30 mils film	~0.07 g/hr/m ² 64 mils film	

Water Permeance

	Smooth Coating	Broadcast Surfacing	(Standard)
water method	~0.48 perm 30 mil film	~0.12 perm 64 mil film	

APPLICATION INFORMATION**Mixing Ratio**

A:B= 2:1 by volume

Consumption**Concrete Substrate / Smooth Coating**

Primer Coat	Sikagard® / Sikafloor® Primer (see Application section)	4 m ² /L (160 ft ² /US gal.) 10 mil w.f.t.
1st Coat	Sikagard® Duochem-7500	2.6 m ² /L (106 ft ² /US gal.) 15 mil w.f.t.
2nd Coat	Sikagard® Duochem-7500	2.6 m ² /L (106 ft ² /US gal.) 15 mil w.f.t.

Sikagard® Duochem-7500 maximum build on vertical surfaces 7 mils w.f.t. per coat. Three (3) coats may be required to produce a smooth coating vertically.

Concrete Substrate / Broadcast Surfacing

Primer Coat	Sikagard® / Sikafloor® Primer (see Application section)	4 m ² /L (160 ft ² /US gal.) 10 mil w.f.t.
Broadcast Coat	Sikagard® Duochem-7500	2 m ² /L (80 ft ² /US gal.) 20 mil w.f.t.
Aggregate	Oven dried silica sand #32 mesh (spherical) 0.3 - 0.85 mm or #16 mesh (angular) 0.6 - 2.0 mm	3 - 5 kg/m ² (0.6 - 1 lb/ft ²)
Top Coat	Sikagard® Duochem-7500 Coloured or Clear	2 - 2.6 m ² /L (80 - 106 ft ² /US gal.) 15 - 20 mil w.f.t.

Steel Substrate / Smooth Coating

1st Coat	Sikagard® Duochem-7500	2.6 m ² /L (106 ft ² /US gal.) 15 mil w.f.t.
2nd Coat	Sikagard® Duochem-7500	2.6 m ² /L (106 ft ² /US gal.) 15 mil w.f.t.

Sikagard® Duochem-7500 maximum build on vertical surfaces 7 mil w.f.t. per coat. Three (3) coats may be required to produce a smooth coating vertically.

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For Optimum Chemical Resistance for all Systems

Optional 3rd Barrier Coat / Sikagard® Duochem-7500 (Clear)	2.6 m ² /L (106 ft ² /US gal.) 15 mil w.f.t.
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Actual coverage rates and material consumption will depend upon porosity and profile of substrates. Allowance must be also made for variation in film thickness or number of coats required to achieve opacity. Test sections are recommended to establish correct coverage.

Product Temperature	Condition product between 18 °C - 30 °C (65 °F - 86 °F) before use
Ambient Air Temperature	Minimum 15 °C (59 °F) Maximum 30 °C (86 °F) NOTE: Observe minimum application temperature of 15 °C (59 °F) and product conditioning temperatures of 18 °C (65 °F) to 30 °C (86 °F) as high viscosity coatings exhibit reduced smoothing properties and greater tendency to display application marks at low temperatures.
Relative Air Humidity	Maximum 85% (during application and curing)
Dew Point	Substrate must be at least 3 °C (5 °F) above the dew point to reduce the risk of condensation, which may lead to adhesion failure or “blushing” on the floor finish. Be aware that the substrate temperature may be lower than the ambient temperature.
Substrate Temperature	Minimum 15 °C (59 °F) Maximum 30 °C (86 °F) Do not apply while ambient and substrate temperatures are rising, as pinholes may occur. Ensure there is no vapour drive at the time of application. Refer to ASTM D4263, may be used for a visual indication of vapour drive.
Substrate Moisture Content	Moisture content of concrete substrate must be ≤ 4 % (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically-prepared surface according to this product data sheet (preparation to ICRI / CSP 3 - 4). Do not apply to concrete substrate with moisture levels exceeding 4 % (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate exceeds 4 % (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikagard® WDE Primer, Sikafloor®-1610 or Sikafloor®-81 EpoCem®CA or Sikafloor® 22NA PurCem® or 24 NA PurCem® on horizontal surfaces and Sikagard®-75 EpoCem®CA on walls and overhead applications. When relative humidity tests for concrete substrate are conducted per ASTM F2170 for project specific requirements, values must be ≤ 85 %.

If values exceed 85 % according to ASTM F2170 use Sikagard® WDE Primer, Sikafloor®-1610 or Sikafloor®-81 EpoCem®CA or Sikafloor® 22NA PurCem® or 24 NA PurCem®. ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.

Pot Life	~60 minutes	250 g (8.8 oz)
Curing Time	Drying Times	
		23 °C (73 °F)
	Foot traffic	~1 day
	Light traffic	~2 days
	Full cure	~7 days
Curing times will vary according to air and substrate temperature and relative humidity. Protect from dampness, condensation and water contact during the initial 72 hour cure period. Mechanical, chemical and physical properties will be fully achieved at full cure.		
Waiting Time / Overcoating	23 °C (73 °F)	
	Minimum	~8 hours
	Maximum	~24 hours
Note: If the Waiting / Overcoating Time has passed, the previous coat must be lightly sanded, to remove all gloss; vacuum cleaning and solvent wiping will be necessary to remove all traces of dust. The surface should be a uniform dullness, with no gloss present after clean-up and before applying the next coat.		

BASIS OF PRODUCT DATA

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.

Properties tested at 23 °C (73°F) and 50% R.H. unless stated otherwise.

LIMITATIONS

- Prior to application, measure and confirm the following: substrate moisture content, ambient relative humidity ambient and surface temperature and dew point. During installation, confirm and record above values at least once every three (3) hours, or more frequently whenever conditions change (e.g. ambient temperature rise/fall, relative humidity increase/decrease, etc.).
- Do not apply Sikagard® or Sikafloor® to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikafloor® product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Do not apply to polymer modified cement mortars (PCC) that may expand when sealed with an

impervious resin.

- Any aggregate used with Sikagard® or Sikafloor® systems must be non-reactive and oven-dried.
- This product is not designed for negative side waterproofing.
- Typically not recommended for exterior slabs on grade where freeze/thaw conditions may exist.
- Direct-fired gas or kerosene heaters produce by-products that can have adverse effects on the curing product. To avoid this occurrence, heaters must be exhausted to the exterior of the building to avoid defects such as amine blush, whitening, loss of adhesion or other surface deficiencies.
- Beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
- Not recommended for areas subject to frequent thermal cycles.
- While the material is supplied in colours, it is not intended and should not be used as a decorative finish, but as a chemical resistant barrier. In addition to discolouration due to ultraviolet light, exposure to some chemicals may result in a change in the appearance of the finish, with loss of gloss values, change in colour and/or staining. This however, does not necessarily constitute a compromise of this protective surfacing.

ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

Concrete: Concrete substrates must be clean and sound. Remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matter, coatings and detritus from the surface by appropriate mechanical means, in order to achieve a profile equivalent to ICRI-CSP 3-4 for floors and ICRI-CSP 2-3 for walls. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and at least 1.5 MPa (218 psi) in tension at the time of application of selected primer & Sikagard® Duochem-7500.

Steel: All steel to be coated must be dry, clean and stable before applying the coating. Remove all existing treatments such as coatings, sealers, wax, and contaminants i.e. dirt, dust, grease, oils, and foreign matter, which will interfere with the adhesion of Sikagard® Duochem-7500. Prepare steel substrates by appropriate mechanical means, such as abrasive blast-cleaning in order to achieve clean white metal profile equivalent to SSPC-SP10, Near White Metal, 2 to 4 mils anchor profile and apply coating immediately, before oxidation of the steel occurs.

MIXING

Mix Ratio: A:B 2:1 by volume.

Do not hand mix Sikagard® or Sikafloor® materials. Mechanically mix only.

Do not thin this product. Addition of thinners (e.g. water, solvent, etc.) will slow cure and reduce ultimate properties of this product. Use of thinners will void any applicable Sika® warranty.

Pre-stir Components A and B separately, making sure all solids, are evenly distributed and uniform consistencies are achieved. Do not allow mixed material to stand and settle. Failure to pre-stir and keep product agitated will result in variation in gloss levels appearance and performance. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin) or empty Component A into a suitably sized and clean pail and add Component B in the correct ratio. Blend the combined components thoroughly at low speed (300 - 450 rpm) for at least three (3) minutes using a drill fitted with an Exomixer® or Jiffy type paddle suited to the dimensions of the mixing container and keep the mixing paddle in the mix to minimize entrapped air. Take care not to introduce any air bubbles while mixing. Make

sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing. When completely mixed, Sikagard® Duochem-7500 should be uniform in appearance and consistency.

Important: Mixing attempted at material and ambient temperatures below 18 °C (65 °F) will result in a decrease in product workability. Do not mix more material than can be applied within the working time limits (i.e. Pot Life) at actual field temperature. Never use a thickening agent such as Sikafloor® Extender T, Cabosil or any other to increase product viscosity as this will greatly reduce chemical resistance.

APPLICATION

See Consumption section of this product data sheet above for number of coats, coverage rates and specific application thicknesses recommended.

Concrete:

Primer Selection: Concrete primer selection is based on environmental and substrate conditions at the time of installation. Sikagard® Duochem-7500 is compatible with Sikagard® WDE Primer (low temperature cure and moisture tolerant epoxy primer), Sikafloor®-1610 (standard set, moisture tolerant epoxy primer), Sikafloor®-156CA (standard set epoxy primer) and Sikafloor®-165 FS (fast set epoxy primer). Consult the most recent issue of concrete primer product technical data sheet for additional information. Contact Sika Canada Technical Services for advise and recommendations.

Smooth Coating:

Primer Coat: Apply selected Sikagard® or Sikafloor® primer onto concrete substrates using a brush, roller or squeegee to a uniform coverage without ponding.

1st Coat: Once the primer is tack free apply Sikagard® Duochem-7500 using a brush, roller or squeegee to a uniform coverage without ponding.

2nd Coat: Once first coat is tack free, apply a second coat of Sikagard® Duochem-7500 using a brush, roller or squeegee to a uniform coverage without ponding.

Broadcast Build-Up System:

Primer Coat: Apply selected Sikagard® or Sikafloor® primer onto concrete substrates using a brush, roller or squeegee to a uniform coverage without ponding.

Broadcast Coat: Once the primer is tack free apply the broadcast coat of Sikagard® Duochem-7500 using a notched squeegee or trowel and backroll to a uniform coverage. Broadcast the selected aggregate (shape and size to be selected to meet the end user's traction requirements) into the wet resin to rejection.

Top Coat: Once the broadcast coat has sufficiently cured to allow foot traffic, sweep-up and vacuum-off all loose, unbonded sand. Apply the top coat of Sikagard® Duochem-7500 using a squeegee, followed by back rolling to provide a uniform texture and finish.

Steel:

Priming, consolidating or sealing of common steel substrates with a Sikagard® or Sikafloor® primer is not usually required under typical circumstances. However, due to variations in steel quality, surface condition, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of debonding, blisters, pinholes or other defects. Consult Sika Technical Sales for advice.

Application of Sikagard® Duochem-7500 onto properly prepared steel surfaces is typically the same procedure as outlined above for smooth coatings and broadcast build-up systems onto concrete, excluding the use of a Sikagard® or Sikafloor® primer, unless determined otherwise.

CLEAN UP

Clean all tools and equipment immediately after use with Sika® Epoxy Cleaner. Once hardened, material can only be removed mechanically.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

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 in accordance with Sika's recommendations. 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
1-800-933-SIKA
www.sika.ca

Other locations

Boisbriand (Quebec)
Brantford; Cambridge;
Sudbury; Toronto (Ontario)
Edmonton (Alberta)
Surrey (British Columbia)

Product Data Sheet

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