

PRODUCT DATA SHEET

Sika® Ucrete® HS22 NA

MEDIUM-DUTY, SELF-LEVELLING CEMENTITIOUS URETHANE SCREED

PRODUCT DESCRIPTION

Sika® Ucrete® HS22 NA is a pigmented, medium-duty self-levelling water dispersed polyurethane/cement mortar. Sika® Ucrete® HS22 NA is typically installed at thicknesses ranging from 4.5 mm to 6 mm (3/16 in to 1/4 in or 188 to 250 mil). Sika® Ucrete® HS22 NA is broadcast with dried quartz sand and sealed with Sika® Ucrete® 31 NA (or with Sika® Ucrete® 33 NA where a top coat resistant to discolouration by UV is desired) to produce a solid colour finish. Sika® Ucrete® HS22 NA can also be broadcasted with coloured quartz aggregate and sealed with Sikafloor® resinous flooring products for a decorative finish.

Sika® Ucrete® HS22 NA provides excellent resistance to abrasion, impact, and chemical attack.

WHERE TO USE

Sika® Ucrete® HS22 NA may only be used by experienced professionals.

Sika® Ucrete® HS22 NA is primarily used to protect concrete substrates in aggressive environments and may be used in installations such as:

- Food processing plants
 - Kitchen and oven areas, freezers and coolers
- Dairies
- Breweries, wineries and distilleries,
- Laboratories and pharmaceutical facilities
- Pulp and paper plants,
- chemical process plants,
- Warehouses and storage areas

CHARACTERISTICS / ADVANTAGES

- Can be applied on green concrete, typically 7-10 days (28 days cure time is not required). When the substrate demonstrates a tensile bond strength in excess of 1.5 MPa (218 psi) after adequate preparation.
- Can be applied over partially cured concrete substrates (>4 % mass (pbw-part by weight)) as measured with Tramex® CME/CMExpert type concrete moisture meter (surface moisture).
- Can be applied to concrete substrates where <100 % relative humidity is measured as per ASTM F2170.
- Easy installation requiring less labour to install than traditional Sika® Ucrete® trowel grade materials.
- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents. Consult Sika Technical Service for full details. Refer to the Sika® Ucrete® HS22 NA Chemical Resistance Chart.
- Similar coefficient of thermal expansion to concrete, allowing movement with the substrate through normal thermal cycling.
- Performs and retains its physical characteristics through a wide temperature range from -40 °F (-40 °C) up to 248 °F (120 °C).
- Non-tainting
- Behaves plastically under impact/deforms but will not crack or debond.
- High abrasion qualities resulting from its aggregate structure.
- Maintain and extend existing expansion joints up through the Sika® Ucrete® Flooring System.
- Steam cleanable at 3 mm to 6 mm (3/16 in to 1/4 in) [188 to 250 mil] thickness.
- Meets CFIA and USDA requirements for use in food plants.

APPROVALS / CERTIFICATES

Meets CFIA and USDA requirements for use in food plants.

PRODUCT INFORMATION

Packaging	Part 1:	3.78 L pail (1 US gallon) 8.53 lb
	Part 2:	2.64 L pail (0.70 US gallon) 7.33 lb
	Part 3:	19.94 kg (43.96 lbs) in a bag (powder)
	Kits (1+2+3):	27.14 kg (59.83 lb)
Colour	RAL 7012 Basalt Grey RAL 3009 Oxide Red RAL 7038 Agate Grey RAL 1001 Beige RAL 7042 Traffic Grey	
Shelf Life	12 months in original unopened packaging	
Storage Conditions	Store dry at temperatures between 10 °C and 25 °C (50 °F and 77 °F). Protect from freezing. If frozen, discard.	
Density	2.02 kg/L (16.84 lb/US gal)	ASTM C905 at 23 °C (73 °F) and 50 % R.H

TECHNICAL INFORMATION

Shore D Hardness	80 - 85	ASTM D2240 at 73 °F (23 °C) and 50 % R.H
Abrasion Resistance	~0.10 g (0.004 oz) loss [CS-17 wheel (1000 g) / 1000 cycles] ~0.227 g (~0.008 oz) loss [H-22 wheel (1000 g) / 1000 cycles]	at 23 °C (73 °F) and 50 % R.H
Resistance to Impact	6.81 joules (5.02 ft-lb) at 3 mm of thickness (1/8 in)	ASTM D2794 at 23 °C (73 °F) and 50 % R.H
Compressive Strength	39 MPa (5657 psi) 28 days	ASTM C579 at 23 °C (73 °F) and 50 % R.H
Tensile Strength in Flexure	8.9 MPa (2790 psi)	ASTM C580 at 23 °C (73 °F) and 50 % R.H
Tensile Strength	6.5 MPa (1045 psi)	ASTM C307 at 23 °C (73 °F) and 50 % R.H
Pull-Off Strength	>2.5 MPa (>400 psi) (substrate failure) Pull-off Strength	ASTM D7234 at 23 °C (73 °F) and 50 % R.H
Coefficient of Thermal Expansion	1.6 x 10 ⁻⁵ mm/mm/°C (0.89 x 10 ⁻⁵ in/in/°F)	ASTM D696 at 23 °C (73 °F) and 50 % R.H
Chemical Resistance	Consult Sika Canada Technical Services	
Microbiological Resistance	Resistance to Fungi Growth Rated 0 (no growth) Resistance to Mold Growth Rated 10 (highest resistance)	ASTM G21 at 23 °C (73 °F) and 50 % R.H ASTM D3273 at 23 °C (73 °F) and 50 % R.H

Skid / Slip Resistance	~0.77 wet (full broadcast Sikadur®-508, Sika® Ucrete® TC31 NA	ANSI A137.1 / ANSI A326.3 DCOF-BOT 3000e
Indentation	~0 %	MIL-PRF-24613 at 23 °C (73 °F) and 50 % R.H
Service Temperature	-40 °C (-40 °F) min. / 120 °C (248 °F) max.	
Water Absorption	~0.45 %	ASTM C413 at 23 °C (73 °F) and 50 % R.H
Softening Point	130 °C (266 °F)	

APPLICATION INFORMATION

Consumption	Approx. 4.6 m ² (50 ft ²) per unit at 3.2 mm (1/8 in) as MVT system only Approx. 3.4 m ² (37 ft ²) per unit at 4 mm (160 mil) Approx. 2.8 m ² (31 ft ²) per unit at 4.7 mm (3/16 in) Approx. 2.3 m ² (25 ft ²) per unit at 6.3 mm (1/4 in) (The above figures do not allow for surface porosity, profile or waste)			
Product Temperature	Condition product at temperatures between 18 °C and 24 °C (65 °F and 75 °F) before use. Mixing and application attempted at material, ambient and/or substrate temperature conditions less than 18 °C (65 °F) will result in a decrease in product workability and slower cure rates.			
Ambient Air Temperature	Minimum 7 °C (45 °F) / Maximum 38 °C (100 °F)			
Relative Air Humidity	Maximum 85% (during application and curing)			
Dew Point				
Substrate Temperature	Minimum 7 °C (45 °F) / Maximum 38 °C (100 °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	Sika® Ucrete® HS22 NA can be applied on substrates with higher moisture content. Check for rising moisture. The substrate must be visibly dry with no pounding water and must have a minimum pull-off strength of 1.5 MPa (218 psi). IMPORTANT: Early application on green or young concrete before drying shrinkage has stabilized may result in reflective cracks on the finished Sika® Ucrete® HS22 NA surface post application.			
Pot Life	Material Temperature	Time		
	10 °C (+50 °F)	~ 25 - 30 minutes		
	20 °C (+68 °F)	~ 15 - 20 minutes		
	30 °C (+86 °F)	~ 5 - 10 minutes		
Curing Time	Temperature	Foot Traffic	Light Traffic	Full Cure
	10 °C (+50 °F)	~ 24 hours	~ 48 hours	~ 7 days
	20 °C (+68 °F)	~ 18 hours	~ 24 hours	~ 5 days
	30 °C (+86 °F)	~ 6 hours	~ 18 hours	~ 3 days

Before applying Sika® Ucrete® HS22 NA when a scratch primer with broadcast is used allow:

Substrate Temperature	Minimum	Maximum
10 °C (+50 °F)	12 hours	24 hours
20 °C (+68 °F)	3 hours	12 hours
30 °C (+86 °F)	2 hours	8 hours

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.

LIMITATIONS

- Do not apply to polymer modified cement mortars (PCC) that may expand when sealed with an impervious resin.
- Do not apply to water-soaked, glistening-wet concrete substrates (i.e., standing water).
- Do not apply on porous surfaces where outgassing conditions are present during the application of Sika® Ucrete® HS22 NA.
- Do not apply to un-reinforced sand cement screeds, asphaltic or bitumen substrate, glazed tile or non-porous brick, tile and magnesite, copper, aluminum, soft wood, or urethane composition, elastomeric membranes, fiber reinforced polyester (FRP) composites.
- Do not apply Sika® Ucrete® HS22 NA to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below Sika® Ucrete® HS22 NA after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with a design professional prior to use.
- Do not featheredge Sika® Ucrete® HS22 NA.
- Do not apply to cracked or unsound substrates.
- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur.
- Do not apply to surfaces where moisture vapour can condense and freeze.
- Do not apply to vertical or overhead surfaces. For vertical surfaces refer to Sika® Ucrete® RG29 NA.
- Do not use for negative side waterproofing.
- increase/decrease, etc.).
- That Relative Ambient Humidity: Minimum ambient humidity 30%, Maximum ambient humidity 85% during application and curing.
- To beware of Dew Point condensation.
- That freshly applied material should be protected from dampness, condensation and water for at least 24 hours. Protect substrate during application from condensation from pipes or any overhead leaks.
- That applied material will follow undulations, depressions, lines, etc. of the underlying substrate. Visual appearance of the finished surface may vary, including, but not limited to, reflection of "waviness", wall transitions, etc.
- That any aggregate used with Sika® Ucrete® HS22 NA must be non-reactive and oven-dried.
- That colour uniformity cannot be completely guaranteed from batch to batch (numbered). Take care when using Sika® Ucrete® products to draw from inventory in batch number sequence, do not mix batch numbers in a single floor area.
- That some light custom colours may produce noticeable shade variations between Sika® Ucrete® systems (e.g., difference between floor and coving mortars). When achieving a uniform appearance is desired (or required), refer to Sika® Ucrete® TC33 NA applied as a top coat.
- That Sika® Ucrete® HS22 NA will discolour over time when exposed to UV light and under certain artificial lighting conditions. Use Sika® Ucrete®-TC 33NA as a solid colour, UV resistant top coat. Use of clear, UV resistant top coats may not prevent discolouration of underlying materials.
- That direct-fired gas or kerosene heaters produce byproducts that can have adverse effects on the curing resin. To avoid this occurrence, heaters must be exhausted to exterior of the building to avoid defects such as surface blush, whitening, loss of adhesion or other surface deficiencies.
- To beware of air flow and changes in air flow. Introduction of dust, debris, and particles, etc. may result in surface imperfections and other defects.
- To note that while Sika® Ucrete® HS22 NA is supplied in colours, it is not intended and should not be used as a uniform decorative finish, some variation in initial surface sheen is to be expected.
- To protect applied product from exposure to uncured cement products; masonry mortar, drywall compound. Exposure will result in staining that can not be removed.
- To note that published Dynamic Coefficient of Friction

As well, Sika® recommends :

- That prior to application, measure and confirm Substrate Moisture Content, Ambient Relative Humidity, Ambient and Surface Temperature and Dew Point. During installation, confirm and record above values at least once every 3 hours, or more frequently whenever conditions change (e.g., Ambient Temperature rise/fall, Relative Humidity

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(DCOF) wet and dry test results are approximate values based on laboratory test samples produced in a controlled environment following the application instructions published on the product data sheet. Resin flooring products are hand applied finishes subject to minor variations in surface texture due to influences partly beyond Sika Canada's control. Substrate profile, environmental conditions, variable regional aggregate size, shape and gradation, aggregate distribution, uniformity of applied resin mil thickness, and application technique can all affect the final DCOF test results achieved. Adequate provision should be made by the client throughout the selection and installation process to ensure the finished surface texture meets the end user's traction requirements.

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 surfaces must be clean and sound. Remove all dust, dirt, existing paint films, efflorescence, exudates, laitance, forms oils, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any other contaminants which may prohibit good bond.

Prepare the surface by any appropriate mechanical means, in order to achieve a profile equivalent to minimum of ICRI CSP 3 (note that : an ICRI CSP 6 will provide better overall performances). The compressive strength of the concrete substrate should be at least 25 MPa (3,625 psi) at 28 days and a minimum of 1.5 MPa (218 psi) in tensile at the time of application.

Repairs to cementitious substrates, filling of blowholes, levelling of irregularities, etc. should be carried out using an appropriate Sika profiling mortar. Contact Sika Technical Service for recommendations in writing.

Edge Terminations

All free edges of a Sika® Ucrete® floor, whether at the perimeter, along gutters or at drains require extra anchorage to distribute mechanical and thermal stresses. This is best achieved by forming or cutting grooves in the concrete. Grooves should have a depth and width of 2 times thickness of the Sika® Ucrete® floor.

If necessary, protect all free edges with mechanically

attached metal strips. Do not featheredge, always turn into an anchor groove.

Expansion Joints

Expansion joints should be provided in the substrates at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessel sealing rings. Refer to details provided at <http://usa.sika.com>.

Priming

Substrate priming is normally not required under typical circumstances. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, test areas are recommended to determine whether priming is required to prevent the possibility of outgassing blisters, debonding, pinholes and other aesthetic variations.

Standard primer procedure is a 15-20 mils scratch coat of Sika® Ucrete® TC31 NA or Sika® Ucrete® HS24 NA and light broadcasting of dry quartz sand. This is the preferred method for concrete substrates.

MIXING

Mix Ratio: Parts 1:2:3 (1 x 1 : 1 x 2 : 1 x 3) (always mix full units only)

General considerations: Sika® Ucrete® materials must only be mixed mechanically, manual mixing is not permitted. Mixing will be affected by temperature. Condition materials at a temperature between 18 °C and 24 °C (65 °F and 75 °F) for at least 24 hours before use. N

Pre-agitate parts 1 and 2 separately, making sure all solids, including pigments, are uniformly distributed. Pour Parts 1 and 2 into a clean mixing bucket, and mix for 30 seconds. Mix at low speed (300 - 450 rpm) using a drill fitted with an Exomixer®-type mixing paddle (recommended) suited to the size of mixing container to minimize air entrapment. Add Part 3 (powder) pouring slowly over a period of 20 seconds. Note: **Do not dump powder into resin!** Allow Part 3 to blend for a further 2-1/2 minutes after all powder is emptied into the resin to ensure complete mixing and that all powders are evenly distributed. During the mixing operations and observing good safety practices, such as turning off and removing revolving parts, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing of (parts 1+2+3). Do not attempt to attend to unmixed material that may gather on the sides of the mixing container while mechanical or electrical parts are in motion.

Note: Do not hand mix Sika® Ucrete® HS22 NA. Also do not mix more material than can be applied within the working time limits (i.e., Pot Life) at the actual field temperature.

APPLICATION

Prior to application, measure and confirm 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.).

Priming

Priming of concrete substrates is not usually required under typical circumstances. However, due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of blisters, debonding, pinholes and other aesthetic variations.

Solid Color Broadcast Surfacing Broadcast Body Coat

Pour mortar onto surface and spread to appropriate thickness using a notched squeegee, trowel or screed bar. Take care to spread newly mixed materials across the transition of previous applied mixes before the surface begins to set. Immediately spike roll the surface to release trapped air in the matrix. Sika® Ucrete® HS22 NA requires selected mineral aggregates (selected for texture) to be broadcast on to the wet surface to rejection. Ensure complete aggregate coverage to all areas to avoid bald spots.

Top Coat

Once the broadcasted body coat has sufficiently cured to allow foot traffic, sweep-up and vacuum the loose unbonded sand. Apply a top coat of Sika® Ucrete® TC31 NA or Sika® Ucrete® 33 NA to lock in the aggregate, using a squeegee, followed by backrolling to provide a uniform texture and finish. This application method requires a minimum 24 hours cure period at 20 °C (68 °F) before foot traffic, refer to the respective Product Data Sheet.

Multi-Colour Broadcast Surfacing (SLQ) Broadcast Body Coat

Pour mortar onto surface and spread to appropriate thickness using a notched squeegee, trowel or screed bar. Take care to spread newly mixed materials across the transition of previous applied mixes before the surface begins to set. Immediately spike roll the surface to release trapped air in the matrix. Broadcast Sikafloor® Broadcast Quartz Aggregate on to the wet surface to rejection. Ensure complete aggregate coverage to all areas to avoid bald spots.

Top Coat

Once the broadcasted body coat has sufficiently cured to allow foot traffic, sweep-up and vacuum the loose unbonded sand. Apply a top coat of Sikafloor®-510N LPL Clear to lock in the aggregate, using a squeegee, followed by back rolling to provide a uniform texture and finish. This application method requires a minimum 8 hours cure period at 20 °C (68 °F) before light traffic, see Sikafloor®-510N LPL Product Data Sheet.

Important: Application attempted at material, ambient and substrate temperatures below 18 °C (65 °F) will result in a decrease in product workability and slower cure rates.

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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

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