

PRODUCT DATA SHEET

Sika® Ucrete® TC31 NA

HIGH BUILD, POLYURETHANE-CEMENT PRIMER, STANDALONE COATING AND TOPCOAT

PRODUCT DESCRIPTION

Sika® Ucrete® TC31 NA mat finish, high-build, water-dispersed polyurethane-cement and aggregate installed at 0.4 to 0.5 mm (15 to 20 mils) per coat. Typically installed as a primer and topcoat for Sika® Ucrete® systems. It can also be used as a standalone coating on concrete surfaces. It provides an economical solution and excellent resistance to abrasion, impact and to a wide range of chemicals.

WHERE TO USE

Sika® Ucrete® TC31 NA may only be used by experienced professionals.

Sika® Ucrete® TC31 NA is used as a primer, high build coating and finish coat for Sika® Ucrete® products and may be used in installations such as:

- As a primer, high build coating and finish coat for Sika® Ucrete® products
- As a chemical resistant concrete coating
- Warehouses and storage areas
- Food processing plants
- Laboratories
- Chemical process plants
- Warehouses and storage areas
- Washrooms

CHARACTERISTICS / ADVANTAGES

- Can be applied on green concrete, typically 7-10 days (28 days cure time is not required) showing >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
- Versatile material suitable for application as a primer, standalone coating and top coat for other Sika® Ucrete® systems
- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents (see the **Chemical Resistance** section on pages 2 and 3)
- No additional expansion joints required (when necessary, the existing expansion joints can simply be maintained and extended up through the Sika® Ucrete® Flooring System)
- Similar coefficient of thermal expansion to concrete allowing movement with the substrate through normal thermal cycling.
- It will perform and retain its physical characteristics through a wide temperature range from -40 °C (-40 °F) up to 90 °C (194 °F)
- Non-tainting from the end of mixing, odourless and phthalate-free, avoiding associated toxicity to health and environmental hazards
- Good wear resistance from a two coat application, if used as a stand-alone coating
- Behaves plastically under impact / deforms but will not crack or debond
- High abrasion qualities result from its aggregate structure
- Easy maintenance, using commonly employed cleaning methods and phenol-free detergents

ENVIRONMENTAL INFORMATION

- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization – Environmental Product Declarations.
- Conformity with LEED®v4 IEQ Credit: Low-Emitting Materials.

- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization - Material Ingredients.
- Conformity with LEED®v4 MR Credit (Option 1): Building Product Disclosure and Optimization - Sourcing of Raw Materials.

APPROVALS / CERTIFICATES

Meets CFIA requirements for use in food plants.

PRODUCT INFORMATION

Composition / Manufacturing	Water-dispersed polyurethane cement hybrid	
Packaging	44.16 kg - 30.66 L unit Consists of 3 parts : Part 1 + Part 2 + Part 3	
	<ul style="list-style-type: none"> Part 1 : 8 x 1.93 kg foil pouches in a cardboard box Part 2 : 8 x 1.66 kg foil pouches in a cardboard box Part 3 : 8 x 1,93 kg in plastic pails 	
	NOTE: A 44.16 kg unit will produce 8 x 5.52 kg mixes	
Colour	Cured colour	Red, Blue, Cream, Green,Charcoal, Grey and Light Grey
Shelf Life	12 months in original unopened packaging	
Storage Conditions	Store dry at temperatures between 10 °C (50 °F) and 25 °C (77 °F). Protect from freezing. If frozen, discard adequately.	
Density	~1.40 kg/L (~11.68 lb/US gal)	(ASTM C905)
Volatile organic compound (VOC) content	Part 1 + Part 2 + Part 3 = ~5 g/L	
CSC MasterFormat®	09 62 00 SPECIALTY FLOORING	

TECHNICAL INFORMATION

Shore D Hardness	~80	(ASTM D2240)
Abrasion Resistance	~0.08 g loss: CS-17 wheel / 1000 g / 1000 cycles ~1.53 g loss: H-22 wheel / 1000 g /1000 cycles	(ASTM D4060)
Resistance to Impact	~2.27 joules (~1.67 ft-lb)	ASTM D2794
Tensile Strength in Flexure	~31.8 MPa (~4613 psi)	(ASTM C580)
Modulus of Elasticity in Flexure	~1896 MPa (~275 052 psi)	(ASTM C580)
Tensile Strength	~15.38 MPa (~2231 psi)	ASTM C307
Pull-Out Resistance	> 3.0 MPa (> 435 psi) (substrate failure)	(ASTM D7234)
Chemical Resistance	Sika® Ucrete® systems offer exceptional resistance to a wide range of chemical aggressors. For example, Sika® Ucrete® TC31 NA can be considered for the following commonly encountered chemicals:	

- Acetic Acid, 50%: Spirit vinegar is widely used in the food industry, indicative of resistant to vinegar, sauces, etc.

- Concentrated Lactic Acid @ 60 °C (140 °F): Indicative of resistance to milk and dairy products)
- Oleic Acids, 100% @ 60 °C (140 °F): Representative of the organic acids formed by oxidation of vegetables and animal fats widely encountered in the food industry
- Concentrated Citric Acid: As found in citrus fruits and representative of the wider range of fruit acids which can rapidly degrade other resin floors.
- Methanol, 100%: Representative of alcohols and the wider range of solvents used in the pharmaceutical industry
- Sika® Ucrete® TC31 NA can be considered when exposed to a wide range of mineral oils, salts and inorganic acid

For further information, please contact Sika® technical support.

IMPORTANT: Optimal chemical resistance is achieved after 7 days of curing. Stains or discolouration may occur with certain chemicals, depending on the nature of the spill and the contact time with the coating surface. Equally important is adherence to maintenance standards, including strictly following the instructions for diluting the cleaning product used. It should be understood that improper use of the cleaning product (including, but not limited to, using a concentration higher than indicated or mixing cleaning products) can, in some cases, cause more damage than certain chemicals.

Microbiological Resistance	Resistance to Fungi Growth	Rated 0 (no growth)	(ASTM G21)
	Resistance to Mold Growth	Rated 10 (highest resistance)	(ASTM D3273)
Skid / Slip Resistance	~0.63 wet (smooth)		(ANSI A137.1 / ANSI A326.3) DCOF - BOT 3000e
Indentation	~0%		(MIL-PRF-24613)
Water Absorption	~0.07%		(ASTM C413)
Softening Point	~130 °C (~266 °F)		

APPLICATION INFORMATION

Consumption	<p>Sika® Ucrete® TC31 NA 1 x 5.52 kg mix of Sika® Ucrete® TC31 NA consisting of:</p> <p>1 (one) x Part 1 + 1 (one) x Part 2 + 1 (one) x Part 3 will yield:</p> <p>~15.6 m² (~168 ft²) per unit at 20 mils (0.5 mm) ~20.8 m² (~244 ft²) per unit at 15 mils (0.4 mm)</p> <p>NOTE: Actual coverage rates and material consumption will depend upon porosity and profile of substrates. Allowance must also be made for variation in film thickness or number of coats required to achieve complete coverage of surfaces. Test sections are recommended to establish correct coverage.</p>
Product Temperature	Condition product at temperatures between 18 °C (65 °F) and 24 °C (75 °F) before use.
Ambient Air Temperature	Minimum 7 °C (45 °F) / Maximum 30 °C (86 °F)
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 actually be lower than the ambient temperature.

Substrate Temperature	Minimum 7 °C (45 °F) / Maximum 30 °C (86 °F)		
Substrate Moisture Content	Sika® Ucrete® TC31 NA can be applied on substrates with higher moisture content. Check for rising moisture. The substrate must be visibly dry without ponding water.		
Pot Life	Material Temperature	Time	
	10 °C (50 °F)	~30 to 35 minutes	
	20 °C (68 °F)	~20 to 25 minutes	
	30 °C (86 °F)	~10 to 15 minutes	

Note: Any application attempted at material, ambient, and substrate temperatures below 18°C (65°F) will result in reduced product workability and a slower curing rate.

Curing Time	Material and substrate 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

Curing times will vary according to air and substrate temperature and relative humidity
 Mechanical, chemical and physical properties will be fully achieved at full cure

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) / 50 % r.h. unless stated otherwise.

LIMITATIONS

NOTE: The user is solely responsible for the proper use of the product. Site visits carried out by Sika® personnel are intended solely, when requested by user, to provide written technical application recommendations based on Sika® documentation. They are in no way intended to supervise, approve or control the quality of the work performed on site. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose.

- 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® TC31 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® TC31 NA to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below Sika® Ucrete® TC31 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® TC31 NA.
- Do not apply to cracked or unsound substrates.
- Do not use on exterior Sika® Ucrete® TC31 NA is for interior use only.
- 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 use for negative side waterproofing.
- Steam cleaning may lead to delamination due to thermal shock. Install Sika®Ucrete® HS22 NA, Sika®Ucrete® UD200 or Sika®Ucrete® UD200 SR to



- achieve maximum thermal shock resistance.
- Do not dilute Sika® Ucrete® TC31 NA. Adding diluents (water, solvent, etc.) will slow curing and reduce the final properties of this product. Diluents must never be added to the mixture. Adding diluent will void any applicable Sika® warranty.

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 increase/decrease, etc.).
- To take in account that an early application on green or young concrete before drying shrinkage has stabilized may result in reflective cracks on the finished Sika® Ucrete® TC31 NA surface post application.
- That Relative Ambient Humidity: Minimum ambient humidity 30%, Maximum ambient humidity 85% during application and curing.
- To beware of Dew Point condensation.
- To take in account that an early application on green or young concrete before drying shrinkage has stabilized may result in reflective cracks on the finished Sika® Ucrete® TC31 NA surface post application.
- To maintain and extend existing expansion joints through the Sika® Ucrete® flooring system”.
- 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® TC31 NA must be non-reactive and oven-dried.
- To take into account that the chemical, mechanical and physical properties are achieved when full curing is complete.
- 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.
- To take in account 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.
- To take in account that Sika® Ucrete® TC31 NA will discolour over time when exposed to UV light and under certain artificial lighting conditions. Use Sika® Ucrete® 33 NA 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® TC31 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 cannot be removed.
- To note that published Dynamic Coefficient of Friction (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.
- The owner and architect should discuss joint details with the flooring contractor before the job starts.
- That consideration should be given to include a mock-up of at least 10 m² in a discrete area in the project specifications (as part of section 09 62 00). It should also be specified whether the mock-up will remain permanently on the work area and be an integral part of the installation to verify that it meets the owner's expectations regarding appearance, slip resistance, and performance.

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

SUBSTRATE QUALITY

Concrete surfaces must be clean and sound. The compressive strength of the concrete substrate should be at least 25 MPa (3625 psi) at 28 days and a minimum of 1.5 MPa (217 psi) in tensile strength, at the time of application.

Substrates must be free of contaminants such as dust,

dirt, existing paint films, efflorescence, exudates, laitance, form, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any other contaminants which may prohibit good bond or conditions of the substrate that may reduce the overall performances of Sika® Ucrete® TC31 NA.

SURFACE PREPARATION

Before work commences, examine the areas to be covered and report any improper condition(s) in writing to the general contractor, architect or engineer (or otherwise, the owner). User shall not proceed with the work until surfaces and conditions comply with the requirements indicated in this document; applicable industry standards; federal, provincial and local regulations, as well as good trade practices. By starting work, the Applicator/User acknowledges that the conditions are acceptable.

Prepare the surface by any appropriate mechanical means, in order to achieve a profile equivalent to a minimum of ICRI CSP 3 (note: ICRI CSP 6 will provide better overall performances where high shear stress from dynamic loads may be present or that can reasonably be expected).

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.

Note: Contact Sika's Technical Service for installation recommendations in writing concerning substrates or conditions not listed.

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. Communicate with Sika's technical services.

The owner and architect should discuss joint details with the flooring contractor before the job starts.

MIXING

Mix Ratio: Parts 1:2:3 = 1 (one) x Part 1 : 1 (one) x Part 2 : 1 (one) x Part 3

Note: Mix only complete units

Do not hand mix Sika® Ucrete® materials; mechanically mix only. Mixing will be affected by temperature; condition materials for use to 18 °C (65 °F) to 24°C (75°F) for at least 24 hours before use. On no account should this product be thinned. Addition of thinners (e.g. water or solvent) will retard the cure, reduce the ultimate properties of this product and void any applicable Sika

warranty.

Pre-agitate Part 1 and Part 2 separately, making sure all solids, including pigments, are uniformly distributed. Start mixer; add Part 1 and Part 2, blending for 30 seconds. Add Part 3 (powder) pouring slowly over a period of 20 seconds. DO NOT DUMP POWDER INTO RESIN, ADD GRADUALLY. Allow Part 3 to further blend for 2-1/2 more minutes after all of the powder is emptied into the resin to ensure all powder is wetted out and a completely uniform mix is achieved. During the mixing operation, and observing good safety practices, ie turning off and removing revolving parts, scrape down the sides and bottom of the mixing container with a flat or straight edge trowel at least once to ensure complete blending 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.

Immediately discharge the product and place material on substrate to be coated. Mix subsequent batches immediately.

Note: 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.).

Cold substrates: Any application attempted at material, ambient, and substrate temperatures below 18°C (65°F) will result in reduced product workability and a slower curing rate.

Immediately pour the mixed product onto the surface to be coated. Proceed immediately with the next batch.

Standalone Coating

Apply two (2) coats of Sika® Ucrete® TC31 NA at 10 mil w.f.t. per coat to the substrate using a short or medium nap roller. Work the resin well into the surface, making sure the floor is fully wetted and then pull back lightly with the roller to the required thickness.

Broadcast Textured Coating

Apply a body coat of Sika® Ucrete® TC31 NA at a thickness of 10 mil w.f.t., immediately broadcast the wet

coating to rejection with mineral aggregates (selected for texture). Once the broadcast body coat has dried sufficiently to allow foot traffic, sweep-up and vacuum the loose unbonded aggregate. Apply a top coat at a thickness of 10 mil w.f.t. using a squeegee followed by backrolling to provide a uniform texture and finish.

Top Coat for Sika® Ucrete® HS22 NA

When Sika® Ucrete® HS22 mortar has been installed and a topcoat is to be applied. Apply a 0.25 mm (10 mil) e.f.m. layer of Sika® Ucrete® TC31 NA using a short-pile roller. Smooth the material by rolling it to encapsulate the aggregates and seal the surface.

Important: Maintain a 'wet-edge' to avoid lap marks. Over-rolling and delays in the installation of mixed material may cause inconsistencies with visible lap marks in the finished floor. Beware of accelerated cure rates when applying at elevated substrate and ambient temperatures. Maintain consistent thickness throughout the entire area. Gloss levels and visual appearance may vary depending on thickness of material applied.

CLEAN UP

Clean all tools and equipment with a non-flammable solvent. Once hardened, product can only be removed mechanically.

MAINTENANCE

CLEANING

Sika® Ucrete® floors are easily cleaned using a stiff brushing action and or high-pressure water, preferably hot, and even live steam. Degreasing agents and detergents will assist, but do not use any compounds containing Phenol as the floor colour may be irreparably affected. Consult the cleaning compound manufacturer's instructions before use.

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 other 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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Product Data Sheet

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