

## PRODUCT DATA SHEET

# Sika® Ucrete® TC31 NA

SOLVENT FREE HIGH BUILD, CEMENTITIOUS URETHANE STANDALONE COATING AND TOP COAT

### PRODUCT DESCRIPTION

Sika® Ucrete® TC31 NA is a pigmented, high-build, matte finish coating based upon a phthalate-free water dispersed polyurethane/cement and aggregate technology. Sika® Ucrete® TC31 NA is applied between 15 and 20 mils (0.4 and 0.5 mm) per coat. Typically installed as topcoat. Sika® Ucrete® TC31 NA can also be used as a standalone coating on concrete surfaces. It provides an economical solution that has excellent chemical resistance properties and very good durability against abrasion and mechanical damage.

### WHERE TO USE

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

Sika® Ucrete® TC31 NA is primarily used as a chemically resistant high build coating used to protect horizontal and vertical concrete substrates, but is equally effective over Sika® Ucrete® products. Sika® Ucrete® TC31 NA may be used in installations such as:

- Food processing plants
- Food preparation areas
- Chemical storage areas
- Chemical process plants
- Laboratories
- Warehouses
- Washrooms

### 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.
- Versatile material suitable for application as UV resistant, standalone coating and top coat for other Sika® Ucrete® Flooring System.
- 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® TC31 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 -14 °C (-10 °F) up to 90 °C (194 °F).
- Non-tainting
- Behaves plastically under impact / deforms but will not crack or debond.
- High abrasion qualities result from its aggregate structure.
- Maintain and extend existing expansion joints up through the Sika® Ucrete® Flooring System.
- Good wear resistance from a two-coat application, if used as a stand-alone coating.
- Meets the requirements of CFIA and USDA for use in food plants.

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

## PRODUCT INFORMATION

|                           |                                                                                                              |                                            |
|---------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <b>Packaging</b>          | Part 1                                                                                                       | 3.78 L (1 US gal)                          |
|                           | Part 2                                                                                                       | 2.65 L (0.70 US gal)                       |
|                           | Part 3                                                                                                       | 3.85 Kg (8.5 lb)                           |
|                           | Part 1+2+3:                                                                                                  | 11.05 Kg (24.38 lb)                        |
| <b>Colour</b>             | RAL 7038 Agate Gray<br>RAL 7042 Traffic Grey<br>RAL 3009 Oxide Red<br>RAL 1001 Beige<br>RAL 5005 Signal Blue |                                            |
| <b>Shelf Life</b>         | Parts 1, 2, 3                                                                                                | 1 year in original unopened packaging      |
| <b>Storage Conditions</b> | Store dry between 10° - 25 °C (50° - 77 °F). Protect from freezing.                                          |                                            |
| <b>Density</b>            | ~1.40 kg/L. (11.68 lb/US gal)                                                                                | ASTM C905<br>at 23 °C (73 °F) and 50% R.H. |

## TECHNICAL INFORMATION

|                                    |                                                                                                           |                                                                                          |
|------------------------------------|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Shore D Hardness</b>            | ~80                                                                                                       | ASTM D2240<br>at 23 °C (73 °F) and 50% R.H.                                              |
| <b>Abrasion Resistance</b>         | CS-17/1,000 cycles/1,000 g - 0.10 g loss<br>H-22/1,000 cycles/1,000 g - 1.57 g loss                       | ASTM D4060<br>at 23 °C (73 °F) and 50% R.H.                                              |
| <b>Resistance to Impact</b>        | 2.27 joules (1.67 ft-lb)                                                                                  | ASTM D2794<br>at 23 °C (73 °F) and 50% R.H.                                              |
| <b>Tensile Strength in Flexure</b> | 24.7 MPa (3,582 psi)                                                                                      | ASTM C580<br>at 23 °C (73 °F) and 50% R.H.                                               |
| <b>Tensile Strength</b>            | ~15.38 MPa (~2,231 psi)                                                                                   | ASTM C307<br>at 23 °C (73 °F) and 50% R.H.                                               |
| <b>Chemical Resistance</b>         | Please consult Sikafloor Technical Services.                                                              |                                                                                          |
| <b>Microbiological Resistance</b>  | Resistance to Fungi Growth Rated 0 (no growth)<br>Resistance to Mold Growth Rated 10 (highest resistance) | ASTM G21<br>at 23 °C (73 °F) and 50% R.H.<br>ASTM D3273<br>at 23 °C (73 °F) and 50% R.H. |
| <b>Indentation</b>                 | ~0%                                                                                                       | MIL-PRF-24613<br>at 23 °C (73 °F) and 50% R.H.                                           |

## APPLICATION INFORMATION

|                         |                                                                                                                                                                                                                                                                                                                        |                |               |           |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------------|-----------|
| Mixing Ratio            | Parts 1:2:3 = Mix full units only                                                                                                                                                                                                                                                                                      |                |               |           |
| Consumption             | Approx. 15.6 m <sup>2</sup> (168 ft <sup>2</sup> ) per unit at 20 mils (0.5 mm)<br>Approx. 20.8 m <sup>2</sup> (244 ft <sup>2</sup> ) per unit at 15 mils (0.4 mm)<br>(The above figures do not allow for surface porosity, profile, waste or the size of aggregate that will be used as part of the broadcasted step) |                |               |           |
| Ambient Air Temperature | Minimum/Maximum 4°/30 °C (- 40°/85 °F)                                                                                                                                                                                                                                                                                 |                |               |           |
| Substrate Temperature   | Minimum/Maximum 4°/30 °C (- 40°/85 °F)                                                                                                                                                                                                                                                                                 |                |               |           |
| Pot Life                | Material Temperature                                                                                                                                                                                                                                                                                                   | Time           |               |           |
|                         | 10 °C (+50 °F)                                                                                                                                                                                                                                                                                                         | ~30-35 minutes |               |           |
|                         | 20 °C (+86 °F)                                                                                                                                                                                                                                                                                                         | ~20-25 minutes |               |           |
|                         | 30 °C (+86 °F)                                                                                                                                                                                                                                                                                                         | ~10-15 minutes |               |           |
| Curing Time             | Temperature                                                                                                                                                                                                                                                                                                            | Foot Traffic   | Light Traffic | Full Cure |
|                         | 10 °C (+50 °F)                                                                                                                                                                                                                                                                                                         | ~ 24 hours     | ~ 6 days      | ~ 10 days |
|                         | 20 °C (+68 °F)                                                                                                                                                                                                                                                                                                         | ~ 12 hours     | ~ 4 days      | ~ 7 days  |
|                         | 30 °C (+86 °F)                                                                                                                                                                                                                                                                                                         | ~ 6 hours      | ~ 2 days      | ~ 5 days  |

## 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

- 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 out-gassing 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 nonporous brick, tile and magnesite, copper, aluminum, soft wood, or urethane composition, elastomeric membranes or fibre-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 when used as a top coat.
- Do not apply to cracked or unsound substrates.
- Do not use on exterior, on-grade substrates; Sika® Ucrete® TC31 NA is for interior use only.
- Do not apply to surfaces where moisture vapour can condense and freeze.
- Do not thin Sika® Ucrete® TC31 NA. Addition of thinners (e.g., water, solvent, etc.) will cause slow cure and reduce ultimate properties of this product. On no account should thinners be added to the mix. Adding thinners 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 note that this product is not designed nor intended for negative side waterproofing.
- That Relative Ambient Humidity: Minimum ambient humidity 30%, Maximum ambient humidity 85% during application and curing.
- To beware of Dew Point condensation.

- 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.
- 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). In order to achieve a uniform appearance, the use of top coats may be required.
- That Sika® Ucrete® TC31 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® 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.
- That steam cleaning may lead to delamination due to thermal shock. Install Sika® Ucrete® TC31 NA over Sika® Ucrete® HS22 NA to achieve maximum thermal shock resistance.
- 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.

## 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

The concrete substrate sound and solid.  
The compressive strength of the concrete substrate should be at least 3,625 psi (25 MPa) and a minimum of 218 psi (1.5 MPa) in tension at the time of application.

### SUBSTRATE PREPARATION

Remove all dirt, existing paint films, efflorescence, exudates, laitance, forms oils, hydraulic or fuel oils, brake fluid, grease, fungus, mildew, biological residues or any deleterious substance or conditions that may prevent, reduce or inhibit adhesion or performance. Prepare the surface by any appropriate mechanical means, in order to achieve a profile equivalent to ICRI-CSP 3.

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.

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 and ask for a written recommendation.

### Expansion Joints

Expansion joints should be provided in the substrate at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessel sealing rings.

### 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. Never dilute this product; the addition of thinners (such as water or solvent) will retard the cure, reduce the ultimate properties of this product and ultimately void any applicable Sika warranty.

Pre-agitate parts 1 and 2 separately, making sure all solids, including pigments, are uniformly distributed. Empty part 1 into a clean pail and gradually add part 3 (powder), mix for at least one (1) minute until all powders are wetted out. 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 2 and mix all ingredients continuously and thoroughly for three (3) minutes. 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.

Do not hand mix Sika® Ucrete® TC31 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.).

Also, note that 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.

#### 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 using a brush attachment. 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.

#### Slip-Resistant Top Coat

Apply a single coat at 15 -20 mils (0.4 - 0.5 mm) using a 3/8" nap roller, lightly broadcast with selected mineral aggregates (selected for texture) and back roll to encapsulate the aggregate.

#### System Top Coat

Where a broadcast Sika® Ucrete® HS22, Sika® Ucrete® RG29, Sika® Ucrete® HD200 and Sika® Ucrete® UD 200SR has been installed. A top coat is required, apply a single coat at 10 mil w.f.t using a short nap roller and back roll to encapsulate the aggregate 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 the thickness of material applied.

#### CLEANING OF EQUIPMENT

Uncured material can be removed from equipment and tools using Sika® Cleaning Wipes or a solvent, such as xylene. Strictly follow solvent manufacturer's instructions for use and consult the SDS before use. Cured material can only be removed manually or mechanically.

# MAINTENANCE

## CLEANING

Sikafloor® 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 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](http://www.sika.ca)

### **Sika Canada Inc.**

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### **Other locations**

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

### **Product Data Sheet**

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