BUILDING TRUST

PRODUCT DATA SHEET

Sika® Ucrete® 33 NA

UV RESISTANT, HIGH BUILD, POLYURETHANE-CEMENT STANDALONE COATING AND TOPCOAT

DESCRIPTION

Sika® Ucrete® 33 NA is a pigmented, UV resistant, high-build coating with a finely textured matte finish, based upon water-dispersed aliphatic polyurethane-cement and aggregate technology applied between 0.4 to 0.5 mm (15 to 20 mils) per coat. It is designed as a standalone coating for concrete and as a top coat for Sika® Ucrete® systems.It also provides a higher performing sealed surface that has excellent chemical resistance to a wide range of chemicals and very good durability against abrasion and mechanical damage.

Sika® Ucrete® 33 NA is based on a technology that significantly improves colour fastness, virtually eliminating the yellowing commonly associated with light coloured, conventional aromatic polyurethane-cement products.

USES

Sika® Ucrete® 33 NA may only be used by experienced professionals.

Sika® Ucrete® 33 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® 33 NA may be used in installations such as:

- ▪ Food processing plants
- ▪ Laboratories
- ▪ Chemical processing plants
- ▪ Chemical storage areas
- ▪ Warehouses and storage areas
- ▪ Washrooms

FEATURES

- 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 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-taint 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

SUSTAINABILITY

- 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.

CERTIFICATES AND TEST REPORTS

Sika® Ucrete® 33 NA meets the requirements of CFIA and USDA for use in food plants.

PRODUCT INFORMATION

Composition	Water-dispersed polyurethane-cement hybrid	
Packaging	48.72 kg - 33.83 L unit Consists of 3 parts : Part 1 + Part 2 + Part 3 ▪ Part 1 : 8 x 1.93 kg foil pouches in a cardboard box ▪ Part 2 : 8 x 2.23 kg foil pouches in a cardboard box ▪ Part 3 : 8 x 1,93 kg in plastic pails **NOTE:** A 48.72 kg unit will produce 8 x 6.09 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 between 10 °C and 25 °C (50 °F and 77 °F). Protect from freezing. If frozen, discard adequately.	
Density	~1.44 kg/L (~11.99 lb/US gal)	(ASTM C905)
Volatile organic compound (VOC) content	Part 1 + Part 2 + Part 3 = ~5 g/L	
CSI / CSC MasterFormat®	**09 62 00 | Speciality Flooring**	

TECHNICAL INFORMATION

Shore D Hardness	~81	(ASTM D2240)
Abrasion resistance	~0.08 g loss: CS-17 wheel / 1000 g / 1000 cycles ~0.153 g loss: H-22 wheel / 1000 g / 1000 cycles	(ASTM D4060)
Flexural-strength	~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)
Shrinkage	~0.225 %	(ASTM C531)
Chemical resistance	Sika®Ucrete® systems offer exceptional resistance to a wide range of chemical aggressors. For example, Sika® Ucrete® 33 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® 33 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	~0.60 wet (smooth)		(ANSI A137.1 / ANSI A326.3) DCOF - BOT 3000e
Indentation	~0 %		(MIL-PRF-24613)
Service temperature	Minimum -40 °C (-40 °F) / Maximum 90 °C (194 °F) continuous service temperature as a standalone coating. As a top coat onto Sika® Ucrete ® mortars, refer to the most recent specific mortar Product Data Sheet.		
Softening point	~130 °C (~266 °F)		

APPLICATION INFORMATION

Consumption	**Sika® Ucrete® 33 NA** 1 x 6.09 kg mix of Sika® Ucrete® 33 NA consisting of: 1 (one) x **Part 1** + 1 (one) x **Part 2** + 1 (one) x **Part 3** will yield: Approx. 8.8 m^2 (95 ft^2) per unit at 20 mils (0.5 mm) Approx. 17.6 m^2 (190 ft^2) per unit at 10 mils (.25 mm) **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.
Material 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® 33 NA can be applied on substrates with higher moisture content. Check for rising moisture. The substrate must be visibly dry without standing 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 materi al, 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 rel ative 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 OF USE

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® 33 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® 33 NA to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below Sika® Ucrete® 33 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® 33 NA.
- Do not apply to cracked or unsound substrates.
- Do not use on exterior, Sika® Ucrete® 33 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® 33 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® 33 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® 33 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® 33 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.
- 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® 33 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.
- 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.

ECOLOGY, HEALTH AND 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® 33 NA.

SUBSTRATE 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.

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 Par 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.

Substrate priming is normally not required under typical circumstances. However, due to variations in concrete quality, surface condition, surface preparation, and ambient conditions, it is recommended to conduct baseline tests on application areas to determine if a primer is necessary to prevent blistering, peeling, pitting, and other aesthetic variations. The standard primer application procedure consists of a 15- to 20-mil tack coat of Sika® Ucrete® TC31 NA, followed by a light dusting of dry quartz sand. This method is preferred for concrete substrates.

Standalone Coating

Apply two (2) coats of Sika® Ucrete® 33 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 rolll back lightly with the roller to the required thickness.

Broadcast Textured Coating

Apply a body coat of Sika® Ucrete® 33 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 a Sika® Ucrete® HS22 NA mortar has been installed amd a topcoat is to be applied. Apply a 0.25 mm (10 mil) e.f.m. layer of Sika® Ucrete® 33 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.

CLEANING OF EQUIPMENT

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

MAINTENANCE INSTRUCTIONS

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 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