BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

Sika® Ucrete® TA20 NA

Heavy-duty and thermal shock resistant, trowel-grade cementitious polyurethane screed

PRODUCT DESCRIPTION

Sika® Ucrete® TA20 NA is a heavy-duty, trowel-grade, water-dispersed polyurethane based/cement and aggregate screed applicable at thicknesses ranging from 6 to 9 mm (1/4 to 3/8 in). Sika® Ucrete® TA20 NA provides excellent resistance to abrasion, impact, a wide range of chemicals, thermal shock and other physical aggression. Sika® Ucrete® TA20 NA has a resin rich textured aggregate surface that provides good traction.

Sika® Ucrete® TA20 NA can also be broadcasted with Selected aggregate can be broadcast onto the wet screed to increase the surface texture with improved traction.

WHERE TO USE

Sika® Ucrete® TA20 NA may only be used by experienced professionals.

Sika® Ucrete® TA20 NA floors are primarily used to protect concrete substrates, but are equally effective over most steel surfaces that have been properly prepared and supported. Sika® Ucrete® TA20 NA may be used in installations such as:

- Food processing plants
- Commercial kitchen and restaurants
- Oven areas, freezers and coolers
- Dairies
- Breweries, wineries and distilleries
- Laboratories
- Pharmaceutical facilities
- Pulp and paper plants
- Chemical processing plants
- Warehouses and storage areas

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
- Resists a very wide range of organic and inorganic acids, alkalis, amines, salts and solvents (see the **Chemical Resistance** section on page 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.
- Performs and retains its physical characteristics through a wide temperature range from -40 °C (-40 °F) up to 120 °C (248 °F)
- Non-taint after mixing, odourless and phthalate-free, avoiding associated toxicity to health and environmental hazards
- Behaves plastically under impact/deforms but will not crack or debond
- High abrasion qualities resulting from its aggregate structure
- Easy maintenance, using commonly employed cleaning methods and phenol-free detergents

ENVIRONMENTAL INFORMATION

- Conformity with LEED®v4 IEQ Credit: Low-Emitting Materials
- 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		166.24 kg - 79.92 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 1.66 kg foil pouches in a card board box. Part 3: 8 x 17.19 kg multi-wall paper bags. **NOTE:** A 166.24 kg unit will produce 8 x 20.78 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 and 25 °C (50 °F and 77 °F). Protect from freezing. If frozen, discard.	
Density		~2.08 kg/L (~17.34 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		~81	(ASTM D2240)
Abrasion Resistance		~0.24 g loss: CS-17 wheel / 1000 g / 1000 cycles ~1.96 g loss: H-22 wheel / 1000 g) / 1000 cycles	(ASTM D4060)
Resistance to Impact		~9.08 joules (~6.070 ft-lb) at 3 mm (1/8 in) thickness	(ASTM D2794)
Compressive Strength	24 hours 3 days 7 days 28 days	~25 MPa (~3626 psi) ~32 MPa (~4641 psi) ~34 MPa (~4931 psi) ~37 MPa (~5367 psi)	(ASTM C579)
Modulus of Elasticity in Flexure		~1871 MPa (~271425 psi) at 14 days	(ASTM C580)
Tensile Strength		~4.3 MPa (~624 psi)	(ASTM C307)
Shrinkage		~0.146 %	(ASTM C531)

Pull-Off Strength	> 3.0 MPa (> 435 psi) (substrate failure)	(ASTM D7234)
Thermal Compatibility	Pass	(ASTM C884)
Coefficient of Thermal Expansion	~2.8 x 10^{-5} mm/mm/°C (~1.56 x 10^{-5} in/in/°F)	(ASTM D696)
Chemical Resistance	Sika®Ucrete® systems offer exceptional resistance to a wide range of chemical aggressors. For example, Sika® Ucrete® TA20 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® TA20 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.	
Skid / Slip Resistance	~0.62 wet (trowel & backroll finish)	(ANSI A137.1 / ANSI A326.3) DCOF - BOT 3000e
Service Temperature	Minimum -40 °C (-40 °F) / Maximum 120 °C (248 °F)	
Water Absorption	~0.73 %	(ASTM C413)
Softening Point	~130 °C (~266 °F)	
Consumption	**Primer:** (where surface/substrate porosity requires such) 1 x 5.5 kg mix of Sika® Ucrete® TC31 NA consisting of: 1 (one) x **Part 1** + 1 (one) x **Part 2** + 1 (one) x **Part 3** will yield: ~15.3 m^2 per g mix (~165 ft^2) at 10 mil w.f.t. **Note:** Refer to the most current Sika®Ucrete® TC31 NA product data sheet for	

specific information.
Screed:
1 x 20.78 kg mix of Sika® Ucrete® TA20 NA consisting of:

1 (one) x **Part 1** + 1 (one) x **Part 2** + 1 (one) x **Part 3** will yield:
~1.6 m^2 per 20.78 kg mix (~17 ft^2 per 45.81 lb mix) at 6 mm (1/4 in) w.f.t.
~1.0 m^2 per 20.78 kg mix (~11 ft^2 per 45.81 lb mix) at 9 mm (3/8 in) w.f.t.

A Sika® Ucrete® TA20 NA 166.24 kg unit will produce 8 x 20.78 kg mixes

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.

Product Temperature

Condition product at temperatures between 18 °C (65 °F) and 24 °C (75 °F) before use.

Note: 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: 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 be actually lower than the ambient temperature.

Substrate Temperature

Minimum: 7 °C (45 °F) / Maximum: 30 °C (86 °F)

Substrate Moisture Content

Sika® Ucrete® TA20 NA can be applied on substrates with higher moisture content. Check for rising moisture. The substrate must be visibly dry with no pounding 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: Mixing and applying the product when the material, ambient, and/or substrate temperatures are below 18°C (65°F) will result in reduced workability and slower curing times.

Curing Time

Ambient and substrate temp	Full cure
10 °C (50 °F)	~7 days
20 °C (68 °F)	~5 days
30 °C (86 °F)	~3 days

Note: Curing times will vary according to air and substrate temperature and relative humidity.

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.
Properties tested at 23 °C (73 °F) and 50 % R.H. unless stated otherwise.

LIMITATIONS

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® TA20 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® TA20 NA to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below Sika® Ucrete® TA20 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® TA20 NA.
- Do not apply to cracked or unsound substrates.
- Do not use on exterior Sika® Ucrete® TA20 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 apply to vertical or overhead surfaces. For vertical surfaces refer to Sika® Ucrete® RG29 NA.
- Do not use for negative side waterproofing.
- Do not dilute Sika® Ucrete® TA20 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® TA20 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 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 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® TA20 NA must be non-reactive and oven-dried.
- 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 intp consideration 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.
- To take in account that Sika® Ucrete® TA20 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® TA20 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.

ENVIRONMENT, HEALTH & SAFETY

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® TA20 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 (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.

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 the 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. 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: 1 (one) x **Part 1** + 1 (one) x **Part 2** + 1 (one) x **Part 3**

Note: Mix only complete units

A *Ted Baugh* type mixer, incorporating a motor spun mixing pail and a shear angle mixing blade, is recommended. 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 the 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.

Cool Substrates: Cold substrates: Improved flowability on cold substrates and at low ambient temperatures (below 18°C [65°F]) can be achieved by removing a maximum of 1.0 kg (2.2 lb) of Part 3 (powder) per unit. However, a longer curing time should be expected.

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.).

Application on Slopes > 2 %: To minimize movement and improve the application characteristics on slopes greater than 2 %, add an additional 10 % by weight ~1.7 kg (~3.75 lb) of Sika® Ucrete® TA20 NA Part 3 powder to each 20.78 kg (45.81 lb) mix.

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 mil scratch coat of Sika® Ucrete® TC31 NA and light broadcasting of dry quartz sand. This is the preferred method for concrete substrates.

Trowel and Roll

Place mortar on surface and spread to appropriate thickness using a pin rake or screed box. Take care to spread newly mixed materials across the transition of previous applied mixes before the surface begins to set. Allow mortar to stand for a few minutes to permit entrapped air to escape. Finish the surface using a flat steel trowel, then back roll with a nylon roller to remove trowel marks. Allow a minimum 18 hours cure period at 20 °C (68 °F) before exposing the surface to foot traffic.

Note: Excessive trowelling or back rolling will bring resin to the surface, reducing the traction value of the textured surface.

Trowel, Roll and Broadcast

Mix and apply materials as outlined above. Broadcast selected mineral aggregates on to the wet surface and seal with a top coat of Sika® Ucrete® TC31 NA or Sika®Ucrete® 33 NA to lock in the aggregate. This application method requires a minimum 24 hours cure period at 20 °C (68 °F) before exposing the surface to foot traffic (refer to Sika® Ucrete® TC31 NA or Sika® Ucrete® 33 NA Product Data Sheet for additional information).

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.

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 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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