BUILDING TRUST
CONSTRUIRE LA CONFIANCE

PRODUCT DATA SHEET

Sikafloor® Duochem-5235 HHT

HEAT AND HUMIDITY RESISTANT, SMOOTH-FINISH, EPOXY COATING

PRODUCT DESCRIPTION

Sikafloor® Duochem-5235 HHT is a two component, solvent free, low odour, solid colour, glossy, high build epoxy coating. It is specifically formulated to provide improved amine blush resistance to allow application beyond the typical heat and humidity micro-environment limitations of traditional epoxy coatings.

WHERE TO USE

Sikafloor® Duochem-5235 HHT may only be used by experienced professionals.

- Suitable for interior applications over new or existing horizontal concrete substrates.
- Allows application during extreme job site micro-environment conditions; high heat up to 38 °C (100 °F) and high relative humidity up to 90%.
- Used as a protective coating to dust proof and protect concrete against deterioration.

CHARACTERISTICS / ADVANTAGES

- Blush resistant formulation allows application to proceed under extreme conditions.
- Aesthetic, smooth non-textured, glossy appearance that demonstrates excellent scruff resistance.
- Superior mechanical resistance allows application in areas exposed to light to medium duty traffic.
- General Service, broad spectrum chemical resistance.
- Low VOC. Low odour formulation suitable for application in occupied facilities.

PRODUCT INFORMATION

Packaging	**Components A+B:** 18 L (4.75 US gal) unit **Component A:** 12 L (3.17 US gal) **Component B:** 6 L (1.58 US gal)
Appearance / Colour	W1600 Tile Red, DW1787 Light Grey, U1503 Beige. Custom colours available, upon request.
Shelf Life	2 years in original unopened packaging.
Storage Conditions	Store dry at temperatures between 5 °C and 32 °C (41 °F and 90 °F). Protect from freezing. If frozen, contact Sika Canada.
Volatile organic compound (VOC) content	~2 g/L
Viscosity	A+B: ~1000 cPs

TECHNICAL INFORMATION

Shore D Hardness	~70	(ASTM D2240)
Abrasion Resistance	~0.061 g loss: H-22 wheel /1000 cycles/1000 g	(ASTM D4060)
Resistance to Impact	~2.7 joules (~23.84 lbs•in)	(ASTM D3029)
Tensile Strength	~39 MPa (~5,656 psi)	(ASTM D2370)
Elongation at Break	~15.8%	(ASTM 2370)
Pull-Off Strength	> 2 MPa (> 290 psi) (substrate failure)	(ASTM D7234)
Service Temperature	Minimum ~0 °C (~32 °F) Maximum ~50 °C (~122 °F)	
Water Absorption	Immersion (24 hrs.) ~1.60 % Immersion (7 days) ~1.790 %	(ASTM D570)

APPLICATION INFORMATION

Mixing Ratio	A:B = 2:1 (by volume)
Consumption	**As a primer** 5 m²/L to 8 m²/L (200 ft²/US gal to 325 ft²/US gal) (5 mil to 8 mil w.f.t.) **Wear Coat** 1.6 m²/L to 3.3 m²/L (65 ft²/US gal to 135 ft²/US gal) (12 mil to 25 mil w.f.t.) **NOTE:** Actual coverage rates and material consumption will depend upon porosity and profile of substrates. Allowance must be also made for variation in film thickness or number of coats required to achieve opacity with light (i.e. white) or bright colours (i.e. reds and yellows) on dark substrates. Test sections are recommended to establish correct coverage.
Product Temperature	Condition product at temperatures between 18 °C and 30 °C (65 °F and 86 °F) before using and during the application.
Ambient Air Temperature	Minimum: 10 °C (50 °F) Maximum: 30 °C (85 °F) **Note:** Mixing carried out under conditions where the Sikafloor® Duochem-5235 HHT temperature and ambient temperature are below 18°C (65°F) will result in reduced product workability and slower curing rates.
Relative Air Humidity	Maximum 90% (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.
Substrate Temperature	Minimum: 10 °C (50 °F) Maximum: 30 °C (85 °F) **Note:** Mixing and application attempted at material, ambient and /or substrate temperature conditions less than 18 °C (65 °F) will result in an increase of the viscosity of the Sikafloor® Duochem-5235 HHT and slower cure rates.
Substrate Moisture Content	Moisture content of concrete substrate must be ≤ 4 % by mass (pbw – part by weight) as measured with a Tramex®CME / CMExpert type concrete moisture meter on mechanically prepared surface according to this product data sheet

(preparation to ICRI / CSP 3 - 4).

Pot Life

~25 min (250 g [8.8 oz])

Curing Time

Ambient & Substrate Temperature	Foot Traffic	Light Traffic	Normal Traffic
10 °C (50 °F)	~48 hours	~4 days	~7 days
23 °C (73 °F)	~24 hours	~2 days	~5 days
30 °C (86 °F)	~16 hours	~36 hours	~4 days

Waiting Time / Overcoating

Substrate Temperature	Minimum	Maximum
23 °C (73 °F)	~ 8 hours	48 hours

IMPORTANT: If the maximum waiting time has been exceeded. The previous coat must be lightly sanded, to remove all gloss; vacuum cleaning using a brush attachment followed promptly with a solvent wipe off the surface as per the following generally accepted practices:

- **Avoid using solvent that can leave a oily residue** (such as, but not limited to most mineral spirit).
- **Avoid Paper Towels:** Pre-treated shop towels or standard paper towels may contain silicone or manufacturing additives that will ruin your paint job. Stick to lint-free cotton cloths or dedicated microfiber towels.
- **Change Rags Frequently:** As soon as a rag becomes visibly dirty, discard it or fold it to a clean side. Continuing to wipe with a saturated, dirty rag just re-deposits contaminants onto the surface.
- **Wet Wipe:** Pour a solvent (onto the first rag. Do not dip the rag into the solvent container; pour it directly to keep your supply clean). à
- **Lift:** Wipe down a small, manageable section (e.g., ~0.5 m2 [~ 4-6 ft2]) of the surface. Use enough pressure to break up and lift the oils or sanding dust. Rotate the cloth frequently so you are always using a clean spot.
- **Dry Wipe:** Before the solvent can flash off (evaporate) and dry on the surface, wipe the same section with a second, clean, lint-free rag. When used correctly, this second cloth absorbs residual solvent and removes materials that could reduce or prevent adhesion or the proper performance of the next coat.

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. Any site visit carried out by Sika® personnel, upon the user's request, is intended solely to provide written technical 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 Sikafloor® to concrete substrate containing aggregates susceptible to ASR (Alkali Silica Reaction) due to risk of natural alkali redistribution below the Sikafloor® product after application. If concrete substrate has or is suspected to have ASR (Alkali Silica Reaction) present, do not proceed. Consult with design professional prior to use.
- Do not apply to cracked or unsound substrates.
- Do not apply on porous surfaces where outgassing conditions are present during the application of Sikafloor® Duochem-5235 HHT.
- Do not apply on porous surfaces where a transfer of moisture vapour may occur during application.
- Do not apply while ambient and substrate temperatures are rising, as pinholes may occur.
- Do not use on exterior, Sikafloor® Duochem-5235 HHT is for interior use only.
- Do not apply to surfaces where water vapour could condense and freeze.
- Do not apply to substrates exposed to extreme thermal shock.

- This product is not designed for negative side waterproofing.
- Do not dilute Sikafloor® Duochem-5235 HHT. 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 the following: 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.).
- To verify and ensure that moisture content of concrete substrate must be ≤ 4 % (pbw – part by weight) as measured with a Tramex® CME/CMExpert type concrete moisture meter on mechanically-prepared surface according to this product data sheet (preparation to ICRI / CSP 3 to 4). Do not apply to concrete substrate with moisture levels exceeding 4 % (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter. If moisture content of concrete substrate exceeds 4 % (pbw – part by weight) as measured with Tramex® CME/CMExpert type concrete moisture meter, use Sikafloor®-1620 or Sikafloor®-81 EpoCem® CA.
- To keep in mind that ASTM F2170 testing is not a substitute for measuring substrate moisture content with a Tramex® CME/CMExpert type concrete moisture meter as described above.
- That during the application and curing, the maximum ambient humidity should not exceed 90%.
- To beware of Dew Point condensation (the substrate temperature may be lower than the ambient temperature).
- To maintain and extend existing expansion joints through the Sikafloor® 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 Sikafloor® Duochem-5235 HHT must be non-reactive and oven-dried.
- To take into account that the 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 72 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 Sikafloor® Duochem-5235 HHT products to draw from inventory in batch number sequence, do not mix batch numbers in a single floor area.
- To take in account that Sikafloor® Duochem-5235 HHT will discolour over time when exposed to UV light and under certain artificial lighting conditions. Use Sikafloor®-315 N to help delay this, while keeping in mind that a UV resistant top coat may not prevent discolouration of underlying materials.
- To take into account 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 airflow and changes in airflow. Introduction of dust, debris, and particles, etc., may result in surface imperfections and other defects.

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 the 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, fungi, mildew, biological residues or any other contaminants which may prohibit good bond or conditions of the substrate that may reduce the overall performances of Sikafloor® Duochem-5235 HHT.

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 4 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 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. Communicate with Sika®'s technical services.

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

MIXING

Mixing ratio A:B = 2:1 (by volume)

IMPORTANT:
- Do not hand mix Sikafloor® Duochem-5235 HHT; mechanically mix only.
- Sikafloor® Duochem-5235 HHT must be applied as supplied.

Pre-stir Components A and B separately, making sure all solids, are evenly distributed. Empty Component B (Hardener) in the correct mix ratio into Component A (Resin) or empty Component A into a suitably sized and clean pail and add Component B in the correct ratio. Blend the combined components thoroughly at low speed (300 - 450 rpm) for at least three (3) minutes using a drill fitted with an Exomixer® or Jiffy type paddle suited to the dimensions of the mixing container and keep the mixing paddle in the mix to avoid entrapping air. Take care not to introduce any air bubbles while mixing. Make sure the contents are completely mixed to avoid any weak or partially cured spots in the coating. During the mixing operation, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once to ensure complete mixing. 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. When completely mixed, Sikafloor® Duochem-5235 HHT should be uniform in appearance and consistency.

Note: Mix only that quantity which can be used within its pot life at actual field temperature.

APPLICATION

As a primer: Apply the Sikafloor® Duochem-5235 HHT as a prime coat onto the substrate using a brush, roller or squeegee, at a uniform coverage without puddling.

Wear Coat: Once the prime coat is tack free, apply the wear coat using a squeegee or roller and backroll to achieve even coverage.

IMPORTANT: If time between coats exceeds 48 hours at 23 °C (73 °F), the previous coat must be lightly sanded, to remove all gloss; vacuum cleaning and solvent wiping will be necessary to remove all traces of dust. The surface should be a uniform dullness, with no gloss present after clean-up and before applying the next coat.

CLEAN UP

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

MAINTENANCE

Sika® recommends that you consult the document: **Sikafloor® Systems_Protection, Cleaning and Maintenance Guidelines**.

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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