

PRODUCT DATA SHEET

Sikafloor® MetalTop-300

Heavy duty metallic aggregate topping

PRODUCT DESCRIPTION

Sikafloor® MetalTop-300 is a pre-mixed topping, based on hydraulic binder and specially treated metallic aggregates, with anti-corrosion agent.

Please note: The Product may only be used by experienced professionals only.

USES

Sikafloor® MetalTop-300 is recommended for industrial applications that require superior wear and impact resistance:

- floors subject to heavy traffic, impact, abrasion, and continuous wear
- where excess wear has been deemed a safety hazard and increased wear is required
- AGV aisles
- loading docks
- solid waste and recycling facilities
- truck or tractor repair areas
- areas subject to track and sheep's foot traffic
- steel mills

CHARACTERISTICS / ADVANTAGES

Sikafloor® MetalTop-300 offers following advantages:

- Extended working time, allowing ample time to place, float, and finish
- High-slump (5 – 7"), screedable consistency ideal for horizontal applications
- High compressive strengths, sustains heavy loads
- Uniquely processed malleable metallic aggregate for highest level of impact tolerance and abrasion resistance
- Rapid strength gain so floors can be returned to service quickly
- Eight times more wear resistant than concrete for longer serviceable life than high-strength concrete and natural-aggregate toppings
- High-density - resists oil, grease, and many industrial chemicals
- Protects against joint deterioration minimizing damage to goods and increasing the life of material-handling equipment
- Reduces dusting and absorption, making floors easier to clean and maintain
- Lower modulus of elasticity than concrete and toppings of equal strength - less brittle and more resistant to dynamic loads
- Available in bulk bags – ideal for large projects

PRODUCT INFORMATION

Packaging	Sikafloor® MetalTop-300 is packaged in 55 lb moisture-resistant bags and 3,300 lb bulk bags.
Appearance / Color	Powder Natural (concrete gray). Other colors upon request.
Shelf Life	Sikafloor® MetalTop-300 can be stored for 12 months in the tightly closed, original packages. Bulk bags can be stored for 6 months. Do not use the

product if bag is damaged.

Storage Conditions

The product must be stored in original, unopened and undamaged sealed packaging in dry conditions at temperature between 40°F and 90°F. Always refer to the packaging. Kept frost-free and dry.

TECHNICAL INFORMATION

Abrasion Resistance	Age (days)	Depth of Wear at 60 min (in)	(ASTM C779 Proc A) moist cured, 73°F
	28	0.017	

Compressive Strength	Age (days)	Strength (psi)	(ASTM C109) Moist cured, 73°F
	1	5,000	
	7	8,800	
	28	>12,000	

APPLICATION INFORMATION

Mixing Ratio	Approximately 0.63 gal of potable water per 55 lb bag should be used for mixing (37.7 gal per bulk bag).
Coverage	One 55 lb bag yields approximately 3 ft ² at 1" thickness. One 3,300 lb bulk bag yields approximately 200 ft ² at 1" thickness. Note that substrate surface roughness will affect actual coverage.
Layer Thickness	Sikafloor® MetalTop-300 can be installed up to 3" thickness in a single application / lift.
Substrates	Concrete
Curing Treatment	Sikafloor® MetalTop-300 should be wet cured for a minimum of 7 days, followed by the application of an ASTM C309- or C1315-compliant curing compound.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

- Do not use in areas where a steel plate has worn through in less than 1 year.
- Do not use in areas where the floor surface is exposed to acids, their salts, or other materials that seriously and rapidly attack cement or iron.
- Use only potable water when mixing MasterTop 300 topping.
- If any blistering occurs during raised troweling, flatten trowel blades immediately. Reopen blistered areas with a hand float. Wait until raised troweling does not produce blisters.
- Contact your local Sika representative for additional information on application procedures,

suggested armoring thicknesses, and service.

- Do not use in areas subject to rapid thermal cycling.
- Do not subject Sikafloor® MetalTop-300 to prolonged exposure from contaminants.
- Do not add cement, aggregate, or admixtures to Sikafloor® MetalTop-300.
- Arrange to have a pre-job conference with your local Sika representative to discuss all aspects of the Sikafloor® MetalTop-300 application.
- Under no circumstances should less than a 1/2" thickness be used.
- For solid waste tipping floors, 1.5 inches is the recommended minimum application.
- Proper application is the responsibility of the user. Field visits by Sika personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

DIRECTIVE 2004/42/CE - LIMITATION OF EMISSIONS OF VOC

0 g/L (EPA Method 24)

APPLICATION INSTRUCTIONS

HOW TO APPLY

SURFACE PREPARATION

Sikafloor® MetalTop-300 can be applied to fully cured or recently placed (less than 4 days old) concrete.

SURFACE PREPARATION METHOD 1

Use this method on existing fully cured concrete.

1. To achieve a proper bond with Sikafloor® MetalTop-300, the surface of the concrete should have a 1/4" (6 mm) amplitude profile (ICRI CSP #9). Remove all laitance and contaminated areas, creating a coarse profile and exposing aggregates. Multiple passes with a shotblast machine using heavy shot have proven effective. If a bush hammer or scarifier is used, follow with abrasive blasting. The surface must be completely clean and free of oil, grease, dirt, and dust.

2. Test the concrete surface for tensile-bond pulloff strengths according to ASTM C 1583. The minimum tensile-bond pulloff strength must be at least 200 psi and substantial coarse-aggregate fracture must be revealed.

Perform the test in several locations on each slab section scheduled for placement of Sikafloor® MetalTop-300.

3. The base slab (substrate) surface must comply with Section 4.2 of ACI 503.5R.

This section is specific to the surface, accessibility, and temperature conditions during the application of the epoxy bonding agent.

4. Joints and terminations should be pre-treated in one of two methods:

- Mechanical fasteners such as Hilti short nails or Tapcons should be installed in two, offset rows on 12"-18" centers, 4"-6" away from the joint. Note that pneumatically applied fasteners could introduce damage in the substrate.
- An "armored" joint can be introduced on each side of the joint by chipping 4" back from the joint to a depth of 1".

5. Before placing Sikafloor® MetalTop-300, test the concrete in accordance with ASTM D 4263, Indicating Moisture in Concrete by the Plastic Sheet Method. Excessive moisture must be force-dried to produce a condition suitable for the bonding material to achieve proper bond strength. Internally moist concrete may cause vapor pressure upon curing and delaminate the topping.

6. Fill all pre-existing cracks in the concrete with a suitable epoxy crack-repair material. Consult your Sika representative for recommendations.

7. Use liquid epoxy bonding agent such as Sikadur® 32 Hi-Mod LPL to bond the topping to the

existing concrete. Mix according to directions and brush, spray or roll the agent onto the concrete surface. Place the topping while the epoxy is still tacky, like fly paper. If already set, brush more over the hardened surface. Do not attempt to retemper with solvents.

8. Make sure to cover the surface with the topping before the epoxy loses its tack.

SURFACE PREPARATION METHOD 2

Use this slurry-bond-coat method on recently placed (less than 4 days) concrete.

1. The concrete must be designed to have a minimum of 4,000 psi at 28 days, in accordance with ACI 302 recommendations.
2. After placing, screeding, and floating the base concrete, spray on a liquid surface retarder at 100 – 120 ft²/gallon. Cover

with polyethylene, burlap, or other impervious sheet covering to keep the surface from drying out. Remove the covering within 4 days. Use a pressure washer with sufficient power to expose the aggregate and ensure a 1/4" amplitude. Rinse until water runs clean.

3. The concrete surface must be saturated before the placement of Sikafloor® MetalTop-300. Remove standing water immediately before the application of the bond coat.

4. Use properly mixed Sikafloor® MetalTop-300 as a scrub coat. Scrub into the damp surface with a clean, stiff-bristle broom just before the application of Sikafloor® MetalTop-300. Do not apply at an excessive thickness. Do not leave any puddles.

Limit scrub application to an area that will assure the Sikafloor® MetalTop-300 topping can be placed before the scrub coat dries. **DO NOT RETEMPER** the bond coat with water.

MIXING

1. Use an appropriate forced action mortar mixer for the job. Add 3/4 of the mixing water, followed by Sikafloor® MetalTop-300 in a slow, steady stream. Mix for approximately 2 – 3 minutes. Add the remaining water and continue mixing for a total of 5 minutes. Mix thoroughly for a homogeneous mix at the recommended slump.

For bulk bags mixing, refer to technical bulletin for mixing Sikafloor® MetalTop-300 bulk bags.

2. Using ice water will reduce water requirements for a given consistency and will result in increased working time and strength of the topping. Do not use water in an amount that will cause bleeding or segregation.

3. Discharge the topping from the mixer for immediate placing and screeding. If lumps are present, remove them.

Note: 0.63 U.S. gallons per 55 lb bag 38 U.S. gallon is the recommended amount of water for a 6" slump mix.

APPLICATION

1. Place and screed the Sikafloor® MetalTop-300 in sections to maintain the finished elevation. Periodically measure the topping thickness, especially in the center of the slab. Because of the relatively high slump of Sikafloor® MetalTop-300, a roller or pipe screed works best for obtaining a uniformly flat, dense surface without excessive segregation from vibration.

2. As soon as Sikafloor® MetalTop-300 will support an operator and machine without leaving impressions on the slab or creating excessive fines at the surface, float with a mechanical troweling machine equipped with float shoes. For small areas, floating with hand tools is acceptable.

3. Following 1 machine floating, proceed with 1 or 2 normal troweling operations to obtain a hard steel-trowel or burnished-trowel finish. Time the troweling operations and adjust the blade angles to avoid blistering.

4. Sikafloor® MetalTop-300 can be applied in a monolithic

two-course application over fresh concrete.

This type of application requires extreme skill. Please contact your Sika representative before attempting this kind of application.

Under rapid drying or hot, ambient conditions, Sika evaporation reducer Sikagard-30 ER should be sprayed from a garden sprayer, according to label instructions, to prevent rapid moisture loss from the Sikafloor® MetalTop-300.

CURING

1. Sikafloor® MetalTop-300 must be moist cured to attain

its proper design strength, surface impermeability, and wear resistance. After finishing has been completed and the surface will not be marred by foot traffic, mist spray the surface of the topping with water, keep wet and cover it with weighted polyethylene sheeting for a minimum of 7 days. When mist spraying is not possible, use soaker hoses with burlap or 2 layers of saturated burlap (or similar moisture-retaining sheet material) and cover the surface with polyethylene for a minimum of 7 days.

2. After 7 days of wet curing and while the Sikafloor® MetalTop-300 is still moist, remove excess water with a squeegee. Immediately apply an appropriate curing compound (consult your Sika representative for recommendations). Using a roller will ensure complete coverage with the curing compound. Do not spray-apply a membrane curing compound unless it will be backrolled. Do not allow the Sikafloor® MetalTop-300 to dry out before the application of the curing compound.

If the floor must be returned to service in less than 7 days, contact Sika technical support prior to installing Sikafloor® MetalTop-300.

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JOINTS

Joints and proper joint spacing are necessary to limit the cracking tendencies in the topping from shrinkage (contraction joints), to limit movement between the floor and other structural members (isolation joints), and to conclude pours from one day to the next (construction joints).

Procedures for determining the base-slab joint locations, spacing, depth, etc., should be conducted in accordance with ACI 302.1 R-6 section 2.3.

The maximum joint spacing should not exceed 20 feet. Base-slab joints must be matched in the Sikafloor® MetalTop-300 topping by forming or other suitable means.

Note: Intermediary joints must use anchors when Sikafloor® MetalTop-300 is placed on hardened slabs (Method 1) where the joint spacing exceeds 20 feet. See your local Sika sales representative for further recommendations.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates (“SIKA”), the user must always read and follow the warnings and instructions on the product’s most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA’s Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

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