

PRODUCT DATA SHEET

Sika® Armatec® 1C

BONDING PRIMER AND REINFORCEMENT CORROSION PROTECTION

DESCRIPTION

Sika® Armatec® 1C is a cementitious, one-component, coating material with corrosion inhibitor, used as a bonding primer and/or for reinforcement corrosion protection.

USES

- Suitable as a bonding primer on cementitious mortar, steel, or when placing fresh, plastic concrete onto existing, mechanically prepared, saturated surface dry (SSD), hardened concrete.
- Suitable in concrete repair assemblies as reinforcement corrosion protection.
- Protection to reinforcing steel in areas of thin concrete cover where project documents, local building codes or ACI 301 "Specifications for Structural Concrete" recommendations for minimum concrete cover requirements may not have been met.

CHARACTERISTICS / ADVANTAGES

- Easy to mix, just add water.
- User-friendly application
- Excellent adhesion to mechanically prepared concrete and steel.
- Performs as a corrosion inhibitor
- High shear strength
- Can be used on exterior, slab-on-grade surfaces.
- Excellent bonding bridge for cement based repair mortars.
- Long application life
- Can be brushed on, or applied using a textured pattern pistol, hopper spray equipment.

APPROVALS / CERTIFICATES

- Tested in accordance with ASTM B 117, the "Standard Practice for Operating Salt Spray (Fog) Apparatus"

PRODUCT INFORMATION

Packaging	10 lb (4.5 kg) bag
Shelf life	12 months from date of production if stored properly in original, unopened and undamaged, sealed packaging
Storage conditions	Store dry at 40° - 95° F (4° - 35° C) Protect from moisture. If damp, discard material
Appearance and colour	Red/orange powder

TECHNICAL INFORMATION

Tensile strength in flexure	28 days	1,400 psi (9.7 MPa)	ASTM C 293 73° F (23° C), 50% R.H.
Splitting tensile strength	28 days	500 psi (3.4 MPa)	ASTM C 496 73° F (23° C), 50% R.H.

Shear adhesion strength	28 days	2,600 psi (18.0 MPa)	ASTM C 882 modified*
* Bonding primer scrubbed into mechanically prepared, SSD substrate at 73° F (23° C) and 50% R.H.			
Pull-out resistance	Adhesion to mechanically prepared concrete	Adhesion to bright, clean steel	ASTM C 1583 73° F (23° C), 50% R.H.
	350 psi (2.4 MPa); substrate failure	350 psi (2.4 MPa)	
Corrosion test	Resistance to Salt Spray (saline) Fog	120 hours	ASTM B 117
		Excellent	

APPLICATION INFORMATION

Mixing ratio	Bonding Agent	1 quart (0.95 liters) of clean water
	Steel Reinforcement Protection	3/4 quart (0.71 liters) of clean water
Yield	Bonding Agent	15 -18 ft ² (1.4 -1.7 m ²)
	Steel Reinforcement Protection	45 lin.ft (13.7 m) on No. 4 rebar
(Coverage figures do not include allowance for surface profile and porosity of substrate, or material waste.)		
Layer thickness		Minimum thickness / Number of coats
	Bonding Agent	1/32" (1 mm) / 1
	Steel Reinforcement Protection	1/32" (1 mm) / 2
Material temperature	65° - 75° F (18° - 24° C)	
Ambient air temperature	> 45° F (7° C); maximum 95° F (35° C)	
Substrate temperature	> 45° F (7° C); maximum 95° F (35° C)	
Pot Life	> 1 hour	
	Temperatures will affect Application Life:	
	<ul style="list-style-type: none"> Above 73° F (23° C) will reduce the application life and workability. Below 73° F (23° C) will extend the application life and workability. 	
Waiting time to overcoating	Minimum between layers	2 hours
	Minimum before concrete repair product installation	Wet-on-Wet
	Maximum before concrete repair product installation	6 hours

BASIS OF PRODUCT DATA

All technical data stated in this Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

IMPORTANT CONSIDERATIONS

- Avoid application in direct sun, while strong winds prevail, and/or while raining or snowing.
- Sika® Armatec® 1C is not a vapor barrier when cured.
- Apply only to sound, mechanically prepared substrates.
- Use of semi-dry mortars onto Sika® Armatec® 1C must be applied "wet on wet"
- When used in overhead applications with hand trowelled patching mortars, use "wet on wet" to achieve maximum thickness.
- Substrate profile as specified by the design profes-

sional or recommended by the overlay or repair material manufacturer is still required prior to Sika® Armatec® 1C installation.

- As with all cement based materials, avoid contact with aluminum to prevent adverse chemical reaction and possible product failure. Insulate potential areas of contact by coating aluminum bars, rails, posts etc. with an appropriate epoxy such as Sikadur-32 Hi-Mod.

ECOLOGY, HEALTH AND SAFETY

APPLICATION INSTRUCTIONS

SUBSTRATE QUALITY / PRE-TREATMENT

Concrete

- Must be free from dust, loose material, surface contamination and materials which inhibit bond or pre-

vent wetting by repair materials.

- Delaminated, weak, damaged and deteriorated concrete (and where necessary sound concrete) shall be removed by suitable, mechanical means.
- Substrate must be Saturated Surface Dry (SSD). Surfaces should be damp with no standing water.

Steel reinforcement

- Rust, scale, mortar, concrete, dust and other loose and deleterious materials which inhibit bond or contribute to corrosion shall be removed by blast cleaning or other means of mechanical abrasion.
- Should be fully exposed with all corrosion mechanically removed.
- Refer to International Concrete Repair Institute (ICRI) Technical Guideline # 310.1R, the "Guideline for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcing Steel Corrosion" for additional information.

MIXING

- Wet down all tools and mixing equipment prior to use.
- Pour 3/4 -1 quart (0.71 - 0.95 liters) of cool, clean water [approximately 70° F (21° C)] into a suitably sized and clean mixing container, using a calibrated measuring jug or similar, to ensure strict control of water content. Do not overwater.
- Mix mechanically with a low-speed drill (< 300 rpm) and mixing paddle or mortar mixer.
- Mix to a uniform consistency for a time typically not to exceed a maximum 3 minutes. Mix should be free of lumps.
- Refer to ACI 305R, "Guide to Hot Weather Concreting" & ACI 306R, "Guide to Cold Weather Concreting" when there is a need to place this product in hot or cold ambient and substrate temperature conditions. Thinner applications of cementitious repair mortars will be more sensitive to jobsite temperature conditions.

APPLICATION

As a bonding primer

- Apply using a stiff-bristle mason's brush or spray. To achieve good bond, Sika® Armatec® 1C must be scrubbed well into the substrate, filling all pores ensuring complete coverage of all surface irregularities.
- Apply the freshly mixed patching mortar or concrete wet on wet, or up to the maximum recommended Waiting Time, onto the bonding primer.

As reinforcement corrosion protection

- Apply by stiff-bristle mason's brush or spray.
- Take special care to properly coat the underside of the totally exposed steel.
- Allow material to dry 2 - 3 hours at 73° F (23° C), then apply a second coat at the same coverage rate.
- Allow to dry again before the repair mortar or concrete is applied.
- Pour or place cementitious repair mortar or concrete within 7 days.

CURING TREATMENT

- Sika® Armatec® 1C must be protected against contamination and precipitation until installation of the cementitious repair mortar or concrete.

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.

PRODUCT DATA SHEET

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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 written recommendations, or from any other advice offered. The user of the product must test the product's suitability for the intended application and purpose. Sika reserves the right to change the properties of its products. 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.

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