

PRODUCT DATA SHEET

Sika® Armatec® 1C

BONDING PRIMER AND REINFORCEMENT CORROSION PROTECTION

PRODUCT 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 / STANDARDS

- 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
Appearance / Color	Red/orange powder
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.

TECHNICAL INFORMATION

Flexural Strength	<u>28 days</u>	<u>1,400 psi (9.7 MPa)</u>	(ASTM C-293) 73° F (23° C), 50% R.H.
Splitting Tensile Strength	<u>28 days</u>	<u>500 psi (3.4 MPa)</u>	(ASTM C-496) 73° F (23° C), 50% R.H.
Slant Shear Strength	<u>28 days</u>	<u>2,600 psi (18.0 MPa)</u>	(ASTM C-882 modified*)
* Bonding primer scrubbed into mechanically prepared, SSD substrate at 73° F (23° C) and 50% R.H.			
Pull-Out Resistance	<u>Adhesion to mechanically prepared concrete</u>	<u>350 psi (2.4 MPa) substrate failure</u>	(ASTM C-1583) 73° F (23° C), 50% R.H.
Corrosion Test	<u>Resistance to Salt Spray (saline) Fog</u>	<u>120 hours</u>	<u>Excellent</u>
			(ASTM B-117)

APPLICATION INFORMATION

Mixing Ratio	<u>Bonding Agent</u>	<u>1.2 quarts (1.1 L) of water</u>	
	<u>Steel Reinforcement Protection</u>	<u>1 quart (0.95 L) of water</u>	
Coverage	<u>Bonding Agent</u>	<u>15 -18 ft² (1.4 -1.7 m²)</u>	
	<u>Steel Reinforcement Protection</u>	<u>45 lin.ft (13.7 m) on No. 4 rebar</u>	
(Coverage figures do not include allowance for surface profile and porosity of substrate, or material waste.)			
Layer Thickness		Minimum thickness /	
		coat	
	<u>Bonding Agent</u>	<u>31 mils (0.8 mm)</u>	<u>1</u>
	<u>Steel Reinforcement Protection</u>	<u>31 mils (0.8 mm)</u>	<u>2</u>
Product 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)		
Application Time	> 1 hour		
	Temperatures will affect Application Time:		
	■ Above 73° F (23° C) will reduce the application time and workability.		
	■ Below 73° F (23° C) will extend the application time and workability.		
Waiting / Recoat Times	<u>Bonding agent for concrete repair product installation</u>	<u>Wet-on-Wet</u>	
	<u>Minimum between layers (2 layers on steel reinforcement)</u>	<u>2 hours</u>	

APPLICATION INSTRUCTIONS

SURFACE PREPARATION

As a bonding primer

- Must be free from dust, loose material, surface contamination and materials which inhibit bond or prevent wetting by repair materials.
- Delaminated, weak, damaged and deteriorated concrete (and where necessary sound concrete) shall be removed by suitable, mechanical means.

As reinforcement corrosion protection

- 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 1 - 1.2 quarts (0.95 - 1.10 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

- Substrate must be Saturated Surface Dry (SSD). Surfaces should be damp with no standing water.
- 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.

LIMITATIONS

- 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 professional 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.

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.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

LEGAL DISCLAIMER

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

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