

Site Safety Information

The following documents must be submitted to Bremik Construction prior to beginning work. For additional information please refer to the attached examples or contact Bremik's main office at 503.688.1000.

Hazard Communication (MSDS) – Material Safety Data Sheets (MSDS) should outline all hazardous material (chemicals) that will be used for your scope of work. MSDS sheets are to be submitted to Bremik Construction prior to beginning your work. Please see MSDS example attached to this document.

Job Hazard Analysis – Bremik Construction will provide a Job Hazard Analysis (JHA) for you to fill out and complete on a weekly basis or as your daily job tasks change. Subcontractors may use their own JHA but this document must provide the same or similar information as shown on the attached document. All JHA's will be completed on a weekly basis and submitted to Bremik's site supervisor upon completion.

Site Specific Safety Plan Guideline – This document outlines the basic Site Specific Safety Plan requirements for each jobsite. The Site Specific Safety Plan should identify all hazards associated with your scope of work and provide safe work practices and personnel protection methods. Please see Site Specific Safety Plan example attached to this document.

Material Safety Data Sheets (MSDS)

Project Name

General Contractor:

Bremik Construction Inc.

1026 SE Stark Street

Portland, OR 97214

Subcontractor:

Company Name

HAZARD Communication Program

During the course of employment you could be exposed to many different materials that have been determined to be hazardous substances if they are not handled in a safe manner.

When we talk about hazardous substances we want you to know that you have some specific rights, which include:

1. The right for you, your physician (*or your collective bargaining agent*) to receive information, including the Material Safety Data Sheet (MSDS), about hazardous substances you may be exposed to; and
2. The right not to be discharged or discriminated against for requesting information about hazardous substances.

These are the rules you must follow when using hazardous substances.

1. Never use any chemical or substance until you have read the label or the MSDS.
2. If you have questions or have not been instructed on the safe use of hazardous substances ask your supervisor.

Container Labeling

The Foreman will verify that all containers received for usage at the each location will:

1. Be clearly and properly labeled as to hazardous chemical content.
2. Labels will list applicable hazards and necessary work practice warnings or guidelines.
3. Labels will list the name and address of the manufacturer.
4. Secondary containers, not for immediate use, will also be properly labeled with the content of the container and appropriate hazards, (i.e., flammable, corrosive, etc.).

Material Safety Data Sheet (MSDS)

In order for you to protect yourself it is important that you know what information on hazardous substances is available and how to use it. We maintain a Material Safety Data Sheet (MSDS) for each of the hazardous substances we use that you may be exposed to. An MSDS is a technical document which supplies the following information about a chemical or substance: identity, hazardous ingredients/identity information, physical/chemical characteristics, fire and explosion hazard data, reactivity data, health hazard data, precautions for safe handling, and control measures. Copies of the MSDS for all hazardous chemicals will be on the server, and available for employee review upon request.

MSDS will be updated when new products are used or old products discontinued.

BREMIK

CONSTRUCTION

Hazardous Non-Routine Tasks

Periodically employees may be required to perform non-routine tasks that may present increased risks or job hazards. When this type of work is to be performed, employees will receive additional instruction from their foreman.

This instruction will include as a minimum:

1. Specific chemical hazards (cleaners, paints, solvents, oxygen deficient atmospheres, etc.)
2. Safe work methods (tank entry procedures, personal protective equipment, etc.)

No employee is to begin any type of hazardous non-routine task without first receiving proper instruction from their supervisor.

Informing Contractors

The office is responsible for negotiating contracts and will coordinate with the applicable department supervisor to assure that the employee receives hazardous chemical information for the specific department. This information will include:

1. Hazardous chemicals in the work area.
2. Appropriate safe work practices.
3. Location of Material Safety Data Sheets for the chemicals in the work area.
4. Procedures to be followed if the contract workers are inadvertently exposed.

The department supervisor will be responsible for ensuring the contractor will provide this information before contract employees begin work in the area.

Multi-Employer Projects - Informing Other Contractors

To ensure that other contractor's employees have access to the MSDS for the hazardous chemicals or products used a multi-employer job site, it is the responsibility of the project supervisor to provide the contractors the following information:

1. The name and location of the hazardous chemicals to which they may be exposed while on the job site.
2. Any recommendations or appropriate protective measure to be taken by the other contractor's employees, which may be exposed to the hazardous chemicals.
3. Location of MSDS for hazardous chemicals on site. (Note: on most projects the General Contractor will maintain copies of MSDS for all subcontractors on site.)
4. Information on the labeling system being used.

Hazardous Chemicals List

1. A complete list of chemicals used by the company will be located at the office.
2. In addition, Appendix 'A' must be completed for the chemical used on any off-site project. This list will be maintained at the off-site project.
3. Questions regarding the list and MSDS information should be directed to the office.

Material Safety Data Sheets (MSDS)

The following chemicals will be used on the project (See attached).

- 1) Dow Corning (R) 795 Silicone Building Sealant, White
- 2) Sakrete Non-Shrink Construction Grout
- 3) Sika Armatec 110 EpoCem

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE**1. PRODUCT AND COMPANY IDENTIFICATION**

Dow Corning Corporation
South Saginaw Road
Midland, Michigan 48686

24 Hour Emergency Telephone: (989) 496-5900

Customer Service: (989) 496-6000

Product Disposal Information: (989) 496-6315

CHEMTREC: (800) 424-9300

MSDS No.: 01595717

Revision Date: 2013/05/31

Generic Description: Silicone elastomer

Physical Form: Paste

Color: Off-White

Odor: Slight odor

NFPA Profile: Health 0 Flammability 1 Instability/Reactivity 0

Note: NFPA = National Fire Protection Association

2. HAZARDS IDENTIFICATION**POTENTIAL HEALTH EFFECTS****Acute Effects**

Eye: Direct contact may cause temporary redness and discomfort.

Skin: No significant irritation expected from a single short-term exposure.

Inhalation: No significant effects expected from a single short-term exposure.

Oral: Low ingestion hazard in normal use.

Prolonged/Repeated Exposure Effects

Skin: Repeated or prolonged exposure may cause irritation.

Inhalation: No known applicable information.

Oral: Repeated ingestion or swallowing large amounts may injure internally.

Signs and Symptoms of Overexposure

No known applicable information.

Medical Conditions Aggravated by Exposure

No known applicable information.

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

The above listed potential effects of overexposure are based on actual data, results of studies performed upon similar compositions, component data and/or expert review of the product. Please refer to Section 11 for the detailed toxicology information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

None present. This is not a hazardous material as defined in the OSHA Hazard Communication Standard.

4. FIRST AID MEASURES

Eye:	If irritation occurs, flush eye(s) with lukewarm gently flowing water for 5 minutes. Obtain medical attention.
Skin:	No health effects expected. If irritation does occur flush with lukewarm, gently flowing water for 5 minutes. If irritation persists, obtain medical advice.
Inhalation:	If symptoms are experienced remove source of contamination or move victim to fresh air. If irritation persists, obtain medical advice.
Oral:	If irritation or discomfort occur, obtain medical advice.
Notes to Physician:	Treat according to person's condition and specifics of exposure.

5. FIRE FIGHTING MEASURES

Flash Point:	Not applicable.
Autoignition Temperature:	Not determined.
Flammability Limits in Air:	Not determined.
Extinguishing Media:	On large fires use dry chemical, foam or water spray. On small fires use carbon dioxide (CO ₂), dry chemical or water spray. Water can be used to cool fire exposed containers.
Fire Fighting Measures:	Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.
Unusual Fire Hazards:	None.

6. ACCIDENTAL RELEASE MEASURES

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

Containment/Clean up: Observe all personal protection equipment recommendations described in Sections 5 and 8. Wipe up or scrape up and contain for salvage or disposal. Clean area as appropriate since spilled materials, even in small quantities, may present a slip hazard. Final cleaning may require use of steam, solvents or detergents. Dispose of saturated absorbant or cleaning materials appropriately, since spontaneous heating may occur. Local, state and federal laws and regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which federal, state and local laws and regulations are applicable. Sections 13 and 15 of this MSDS provide information regarding certain federal and state requirements.

Note: See Section 8 for Personal Protective Equipment for Spills. Call (989) 496-5900, if additional information is required.

7. HANDLING AND STORAGE

Use with adequate ventilation. Traces of benzene (carcinogen) may form if heated in air above 300°F (149°C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements. Avoid eye contact. Avoid skin contact. Do not take internally.

Use reasonable care and store away from oxidizing materials. This material in its finely divided form presents an explosion hazard. Follow NFPA 654 (for chemical dusts) or 484 (for metal dusts) as appropriate for managing dust hazards to minimize secondary explosion potential.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Component Exposure Limits**

There are no components with workplace exposure limits.

Engineering Controls

Local Ventilation: None should be needed.
General Ventilation: Recommended.

Personal Protective Equipment for Routine Handling

Eyes: Use proper protection - safety glasses as a minimum.
Skin: Washing at mealtime and end of shift is adequate.

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

Suitable Gloves: Avoid skin contact by implementing good industrial hygiene practices and procedures. Select and use gloves and/or protective clothing to further minimize the potential for skin contact. Consult with your glove and/or personnel protective equipment manufacturer for selection of appropriate compatible materials.

Inhalation: No respiratory protection should be needed.

Suitable Respirator: None should be needed.

Personal Protective Equipment for Spills

Eyes: Use proper protection - safety glasses as a minimum.

Skin: Washing at mealtime and end of shift is adequate.

Inhalation/Suitable Respirator: No respiratory protection should be needed.

Precautionary Measures: Avoid eye contact. Avoid skin contact. Do not take internally. Use reasonable care.

Comments: Traces of benzene (carcinogen) may form if heated in air above 300°F (149°C). Provide ventilation to control vapor exposure within inhalation guidelines when handling at elevated temperatures. Review the OSHA benzene regulation for detailed information on safe handling requirements.

Note: These precautions are for room temperature handling. Use at elevated temperature or aerosol/spray applications may require added precautions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: Paste
 Color: Off-White
 Odor: Slight odor
 Specific Gravity @ 25°C: 1.52
 Viscosity: Not determined.
 Freezing/Melting Point: Not determined.
 Boiling Point: Not determined.
 Vapor Pressure @ 25°C: Not determined.
 Vapor Density: Not determined.
 Solubility in Water: Not determined.
 pH: Not determined.
 Volatile Content: Not determined.
 Flash Point: Not applicable.
 Autoignition Temperature: Not determined.
 Flammability Limits in Air: Not determined.

Note: The above information is not intended for use in preparing product specifications. Contact Dow Corning before writing specifications.

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

10. STABILITY AND REACTIVITY

Chemical Stability:	Stable.
Hazardous Polymerization:	Hazardous polymerization will not occur.
Conditions to Avoid:	None.
Materials to Avoid:	Oxidizing material can cause a reaction.

Hazardous Decomposition Products

Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Carbon oxides and traces of incompletely burned carbon compounds. Metal oxides. Formaldehyde. Silicon dioxide. Quartz.

11. TOXICOLOGICAL INFORMATIONSpecial Hazard Information on Components

No known applicable information.

12. ECOLOGICAL INFORMATIONEnvironmental Fate and Distribution

Air:	This product is a solid consisting of a high molecular weight silicone polymer and other solid materials. Unless milled to produce a dust or particles, it is unlikely to give rise to atmospheric contamination.
Water:	This product is a solid which is completely insoluble in water. As the specific gravity is >1, it will sink to the bottom of the water course.
Soil:	This product will enter the terrestrial environment if, as a component of municipal or industrial solid waste the product is landfilled. It is unlikely that further significant transformation of the product will occur.
Degradation:	High molecular weight polymer which is amenable to recycling. The product is not biodegradable. The product is removed >80% during the sewage treatment process.

Environmental Effects

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

Toxicity to Water Organisms: This product has low water solubility and should not present a risk to aquatic organisms.

Toxicity to Soil Organisms: This product is a solid and does not contain significant concentrations of water soluble constituents that may be leached from the product. It is therefore not likely to present a danger to terrestrial organisms.

Bioaccumulation: This product is a solid which is not soluble in water and if ingested will not be absorbed.

Fate and Effects in Waste Water Treatment Plants

This product is a solid rubber type material which is unlikely to have any adverse effect on bacteria.

Ecotoxicity Classification Criteria

Hazard Parameters (LC50 or EC50)	High	Medium	Low
Acute Aquatic Toxicity (mg/L)	<=1	>1 and <=100	>100
Acute Terrestrial Toxicity	<=100	>100 and <= 2000	>2000

This table is adapted from "Environmental Toxicology and Risk Assessment", ASTM STP 1179, p.34, 1993.

This table can be used to classify the ecotoxicity of this product when ecotoxicity data is listed above. Please read the other information presented in the section concerning the overall ecological safety of this material.

13. DISPOSAL CONSIDERATIONS**RCRA Hazard Class (40 CFR 261)**

When a decision is made to discard this material, as received, is it classified as a hazardous waste? No

State or local laws may impose additional regulatory requirements regarding disposal. Call (989) 496-6315, if additional information is required.

14. TRANSPORT INFORMATION**DOT Road Shipment Information (49 CFR 172.101)**

Not subject to DOT.

Ocean Shipment (IMDG)

Not subject to IMDG code.

Air Shipment (IATA)

Not subject to IATA regulations.

Call Dow Corning Transportation, (989) 496-8577, if additional information is required.

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

15. REGULATORY INFORMATION

Contents of this MSDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: All chemical substances in this material are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

EPA SARA Title III Chemical Listings**Section 302 Extremely Hazardous Substances (40 CFR 355):**

None.

Section 304 CERCLA Hazardous Substances (40 CFR 302):

None.

Section 311/312 Hazard Class (40 CFR 370):

Acute: No
Chronic: No
Fire: No
Pressure: No
Reactive: No

Section 313 Toxic Chemicals (40 CFR 372):

None present or none present in regulated quantities.

Note: Chemicals are listed under the 313 Toxic Chemicals section only if they meet or exceed a reporting threshold.

Supplemental State Compliance Information**California**

Warning: This product contains the following chemical(s) listed by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65) as being known to cause cancer, birth defects or other reproductive harm.

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>	
67-56-1	<0.1000	Methyl alcohol	Developmental toxin.
108-88-3	<0.0100	Toluene	Developmental toxin.

New Jersey

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
471-34-1	40.0 - 60.0	Calcium carbonate

DOW CORNING(R) 795 SILICONE BUILDING SEALANT, WHITE

70131-67-8	15.0 - 35.0	Dimethyl siloxane, hydroxy-terminated
63148-62-9	7.0 - 13.0	Polydimethylsiloxane
112945-52-5	3.0 - 7.0	Amorphous fumed silica
80801-30-5	1.0 - 5.0	Phenylmethyl siloxane, hydroxy-terminated
14808-60-7	<1.0	Quartz

Pennsylvania

<u>CAS Number</u>	<u>Wt %</u>	<u>Component Name</u>
471-34-1	40.0 - 60.0	Calcium carbonate
70131-67-8	15.0 - 35.0	Dimethyl siloxane, hydroxy-terminated
63148-62-9	7.0 - 13.0	Polydimethylsiloxane
112945-52-5	3.0 - 7.0	Amorphous fumed silica

16. OTHER INFORMATION

Prepared by: Dow Corning Corporation

These data are offered in good faith as typical values and not as product specifications. No warranty, either expressed or implied, is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate.

(R) indicates Registered Trademark



The Pro's Choice Since 1936

Non-Shrink Construction Grout

Sakrete® Non-Shrink Construction Grout is a non-shrink, non-metallic, structural hydraulic cement for high-strength grouting.

FEATURES AND BENEFITS:

- Meets ASTM C 1107 Packaged Dry, Hydraulic-Cement Grout (Non-shrink)
- Non-corrosive, Will Not Attack Reinforcement
- Non-shrink, Per ASTM C 1107
- Non-metallic, Non-Staining, Gray Color
- Meets Corps of Engineers Specification CRD-C 621
- Plastic and Flowable Consistency
- Pumpable for Easy Placement
- Super Plasticized for Improved Strength

USES: Grouting of

- Concrete - poured in place, precast, tilt-up and prestressed
- Heavy Machinery
- Sole Plates
- Anchor Bolts
- Steel Bearing Plates
- Dowel Rods
- Reinforcing Steel in Block Cells
- Concrete Columns

SAFETY:

READ and UNDERSTAND the Material Safety Data Sheet (MSDS) before using this product. WARNING: Wear protective clothing and equipment. See HMIS block. For emergency information, call CHEMTREC at 800-424-9300 or 703-527-3887 (outside USA). KEEP OUT OF REACH OF CHILDREN.

PREPARATION:

Remove all unsound concrete, grease, oil, paint, and any other foreign material that will inhibit performance. Prior to grout placement, all surfaces must be clean and saturated with water for 24 hours. Remove excess water before placing the grout. Provide air relief holes where necessary if grouting is beneath large plates.

Suggestions in Form Work: Wood form work or other absorbent forms should be coated with a form release oil to prevent grout adherence and water absorption. Design form work to facilitate rapid, continuous and complete filling of the space to be grouted. Use methods that will enable the grout to flow by gravity between the surfaces and keep the grout in full contact with these surfaces until it has hardened.

Refer to: ACI 351.R-99 Report on Grouting between Foundations and Bases for Support Equipment and Machinery for important information and recommendations.

TECHNICAL DATA:

Consistency of Flow	Plastic	Flowable
ASTM C 942	115%	140%
24 hours	3,000 psi (21 MPa)	2,000 psi (14 MPa)
7 days	6,500 psi (45 MPa)	6,000 psi (43 MPa)
28 days	9,000 psi (62 MPa)	8,000 psi (55 MPa)

MIXING:

Add only clean water. The water quantities shown are approximate and may vary slightly with type of equipment and application conditions. Water demand and mix temperature must be determined using standard test methods for consistency and temperature measurement at the time of application.

Desired Grout Consistency:

Flowable (Pumping Consistency), 50 lbs. (22.7kg) Grout, approximately 1.1 Gallons Water (4.2 L)

Plastic (Trowel Consistency), 50 lbs. (22.7 kg) Grout, approximately 1.0 Gallon Water (3.8 L)

PLACEMENT:

Use a mixer large enough to permit continuous placement before any part of the grout has set. Place the grout quickly. Rodding the grout lightly will help move material. Avoid vibration which can cause bleeding and segregation. Shut down nearby machines.

The air, mix & substrate temperatures should all be between 40°F (4.4°C) and 90°F (32.2°C).

CURING:

SAKRETE Construction Grout can be exposed under normal weathering conditions. Forms may be removed as soon as the grout reaches its final set. Protect from freezing for a minimum of 48 hours after placement. ACI 308-Standard Practice for Curing Concrete.

STORAGE:

Store in a tightly closed container off the floor in a dry place.

COVERAGE:

50 lbs. covers 0.45 cu. ft. ((12.7 L)

PACKAGING:

50 lb. bag (22.7 kg) UPC: 7-64661-16350-3

The Pro's Choice Since 1936

SAKRETE®

Non-Shrink Construction Grout

ENVIRONMENTAL ADVISORY:

Uncured or crushed cured cement is an environmental hazard, which may adversely affect fish and wildlife. Dispose of construction debris containing cement, including empty bags, at a permitted municipal disposal firm. Do not use crushed concrete as a fill near an aquatic habitat.

WARNING! CAUSES IRRITATION - Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Exposure may result in irritation of the skin, eyes or nasal passages from alkali in Portland cement. When wet, contact with the skin or eyes may result in irritation or burns. FIRST AID: In case of eye contact, flush immediately with plenty of water for at least 15 minutes and get prompt medical attention; for skin, wash thoroughly with plenty of soap and water. If irritation persists, get medical attention. WARNING! HARMFUL IF INHALED - Avoid breathing dust. Keep container closed. Use with adequate ventilation. Excessive exposure by inhalation over an extended period of time may result in the development of pulmonary diseases including pneumoconiosis and silicosis. Crystalline Silica has been classified by IARC and NTP as a carcinogen.

LIMITED PRODUCT WARRANTY

The manufacturer warrants that this product shall be of merchantable quality when used or applied in accordance with the manufacturer's instructions. This product is not warranted as suitable for any purpose other than the general purpose for which it is intended. This warranty runs for one (1) year from the date the product is purchased. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ON THIS PRODUCT IS LIMITED TO THE DURATION OF THIS WARRANTY. Liability under this warranty is limited to replacement of defective product or, at the manufacturer's option, refund of the purchase price. CONSEQUENTIAL AND INCIDENTAL DAMAGES ARE NOT RECOVERABLE UNDER THIS WARRANTY.

The SAKRETE Companies
866-SAKRETE
866-725-7383

REV 6-11

Sika Armatec® 110 EpoCem®

Bonding Agent and Reinforcement Protection

Description	Sika Armatec 110 EpoCem is a 3-component, solvent-free, moisture-tolerant, epoxy-modified, cementitious product specifically formulated as a bonding agent and an anti-corrosion coating.
Where to Use	<ul style="list-style-type: none">■ As an anti-corrosion coating for reinforcing steel in concrete restoration.■ As added protection to reinforcing steel in areas of thin concrete cover.■ As a bonding agent for repairs to concrete and steel.■ As a bonding agent for placing fresh, plastic concrete to existing hardened concrete.
Advantages	<ul style="list-style-type: none">■ Excellent adhesion to concrete and steel.■ Acts as an effective barrier against penetration of water and chlorides.■ Long open time - up to 16 hours.■ Not a vapor barrier.■ Can be used exterior on-grade.■ Contains corrosion inhibitors.■ Excellent bonding bridge for cement or epoxy based repair mortars.■ High strength, unaffected by moisture when cured.■ Spray, brush or roller application.■ Non-flammable, solvent free.
Coverage	Bonding agent: minimum (theoretical) on smooth, even substrate 80 sq. ft./gal. (=20 mils thickness). Coverage will vary depending on substrate profile and porosity. Reinforcement Protection: 40 sq. ft./gal. (=20 mils thickness) (2 coat application).
Packaging	3.5 gal. unit. (47.6 fl. oz. Comp. A + 122.1 fl. oz. Comp. B + 46.82 lb. Comp. C) Comp. A + B in carton, Comp. C in multi-wall bag. 1.65 gal. unit. (22.7 fl. oz. A + 57.6 fl. oz. B + 4 bags @ 5.5 lb.) Factory-proportioned units in a pail.

Typical Data (Material and curing conditions @ 73°F and 50% R.H.)

RESULTS MAY DIFFER BASED UPON STATISTICAL VARIATIONS DEPENDING UPON MIXING METHODS AND EQUIPMENT, TEMPERATURE, APPLICATION METHODS, TEST METHODS, ACTUAL SITE CONDITIONS AND CURING CONDITIONS.

Shelf Life	1 year in original, unopened packaging.
Storage	Store dry at 40°-95°F (4°-35°C). Condition material to 65°-75°F (18°-24°C) before using. If components A and B are frozen, discard. Protect Component C from humidity.
Color	Concrete gray
Density (Mixed)	125 lb./cu. ft. (2.0 kg.)
Pot Life	Approximately 90 minutes
Compressive Strength (ASTM C-109)	3 days 4500 psi (31.0 MPa) 7 days 6500 psi (44.8 MPa) 28 days 8500 psi (58.6 MPa)
Flexural Strength (ASTM C-348)	28 days 1250 psi (8.6 MPa)
Splitting Tensile Strength (ASTM C-496)	28 days 600 psi (4.1 MPa)
Important Data for Sika Armatec 110 as a Corrosion Protective Coating	
Water	Water Permeability at 10 bar (145 psi) 8.92 x 10 ⁻¹⁵ ft./sec. Control 7.32 x 10 ⁻¹⁰ ft./sec. Water vapor diffusion coefficient μ H ₂ O 110
Carbon Dioxide	Carbon dioxide diffusion coefficient μ CO ₂ 14000

TEST DATA: Time-to-Corrosion Study

- Sika Armatec 110 more than tripled the time to corrosion
- Reduced corrosion rate by over 40%

Important Data for Sika Armatec 110 as a Bonding Agent

Bond Strength (ASTM C882)	14 days moist cure, plastic concrete to hardened concrete:	
Wet on Wet	2800 psi	(19.3 MPa)
24 hr. Open Time	2600 psi	(17.9 MPa)
Bond of Steel Reinforcement to Concrete (Pullout Test):		
Sika Armatec 110 Coated	625 psi	(4.3 MPa)
Epoxy Coated	508 psi	(3.5 MPa)
Plain Reinforcement	573 psi	(3.95 MPa)

Construction



How to Use

Surface Preparation	<p>Cementitious substrates: Should be cleaned and prepared to achieve a laitance and contaminant-free surface prepared in accordance with the requirements specified by the overlay or repair material by blast cleaning or equivalent mechanical means. Substrate must be saturated surface dry (SSD) with no standing water.</p> <p>Steel: Should be cleaned and prepared thoroughly by blast cleaning.</p>								
Mixing	Shake contents of both Component 'A' and Component 'B'. Empty entire contents of both Component 'A' and Component 'B' into a clean, dry mixing pail. Mix thoroughly for 30 seconds with a Sika paddle on a low speed (400-600 rpm) drill. Slowly add the entire contents of Component 'C' while continuing to mix for 3 minutes until blend is uniform and free of lumps. Mix only that quantity that can be applied within its pot life.								
Application	<p>As a bonding agent - Apply by stiff-bristle brush or broom. Spray apply with Goldblatt Pattern Pistol or equal equipment. For best results, work the bonding slurry well into the substrate to ensure complete coverage of all surface irregularities. Apply the freshly mixed patching mortar or concrete wet on wet, or up to the maximum recommended open time, onto the bonding slurry.</p> <p>Maximum recommended open time between application of Armatec 110 and patching mortar or concrete:</p> <table border="0"> <tr> <td>80°-95°F (26°-35°C)</td> <td>6 hours</td> </tr> <tr> <td>65°-79°F (18°-26°C)</td> <td>12 hours</td> </tr> <tr> <td>50°-64°F (10°-17°C)</td> <td>16 hours</td> </tr> <tr> <td>40°-49°F (4°-9°C)</td> <td>wet-on-wet</td> </tr> </table> <p>For corrosion protection only - Apply by stiff-bristle brush or spray at 80 sq. ft./gal. (20 mils). Take special care to properly coat the underside of the totally exposed steel. Allow coating to dry 2-3 hours @ 73°F, then apply a second coat at the same coverage. Allow to dry again before the repair mortar or concrete is applied. Pour or place repair within 7 days.</p>	80°-95°F (26°-35°C)	6 hours	65°-79°F (18°-26°C)	12 hours	50°-64°F (10°-17°C)	16 hours	40°-49°F (4°-9°C)	wet-on-wet
80°-95°F (26°-35°C)	6 hours								
65°-79°F (18°-26°C)	12 hours								
50°-64°F (10°-17°C)	16 hours								
40°-49°F (4°-9°C)	wet-on-wet								
Limitations	<ul style="list-style-type: none"> ■ Substrate and ambient temperature: Minimum 40°F (5°C). ■ Maximum 95°F (35°C). ■ Minimum thickness: As a bonding agent 20 mils. ■ For reinforcement protection 40 mils. ■ (2 coats, 20 mils each). ■ Not recommended for use with expansive grouts. ■ Use of semi-dry mortars onto Sika Armatec 110 EpoCem must be applied "wet on wet". ■ When used in overhead applications with hand placed patching mortars, use "wet on wet" for maximum mortar build thickness. ■ Substrate profile as specified by the overlay or repair material is still required. ■ 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 Hi-Mod 32. 								
Caution	<p>Part A & B: IRRITANT; SENSITIZER - Can cause skin sensitization after prolonged or repeated contact. Skin and eye irritant. High concentrations of vapor may cause respiratory irritation. Avoid skin contact. Use only with adequate ventilation. Use of safety goggles and chemical resistant gloves is recommended.</p> <p>Part C: IRRITANT; SUSPECT CARCINOGEN - Contains crystalline silica, quartz (sand); cement. Skin and eye irritant. Dust may cause respiratory tract irritation. Avoid breathing dust. Use only with adequate ventilation. May cause delayed lung injury (silicosis). IARC list crystalline silica as having sufficient evidence of carcinogenicity to laboratory animals and limited evidence of carcinogenicity in humans. NTP also lists crystalline silica as a suspect carcinogen. Use of safety gloves is recommended. In case of high dust concentrations or exceedance of PELs, use an appropriate NIOSH approved respirator.</p>								
First Aid	In case of eye contact, wash immediately with soap and water for 15 minutes; immediately consult a physician. In case of skin contact, wash with soap and water; consult a physician for irritation. For respiratory problems, remove person to fresh air and institute artificial respiration if necessary; consult a physician. In case of ingestion, immediately consult a physician. Wash clothing before reuse.								
Clean-Up	In case of spills or leaks, wear suitable protective equipment, contain spill, collect with absorbent material, and transfer to a suitable container. Ventilate area. Avoid contact. Dispose of in accordance with current, applicable local, state, and federal regulations.								

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

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Hazard Communication Standard Pictogram

As of June 1, 2015, the Hazard Communication Standard (HCS) will require pictograms on labels to alert users of the chemical hazards to which they may be exposed. Each pictogram consists of a symbol on a white background framed within a red border and represents a distinct hazard(s). The pictogram on the label is determined by the chemical hazard classification.

HCS Pictograms and Hazards

<p>Health Hazard</p>  <ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • Target Organ Toxicity • Aspiration Toxicity 	<p>Flame</p>  <ul style="list-style-type: none"> • Flammables • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<p>Exclamation Mark</p>  <ul style="list-style-type: none"> • Irritant (skin and eye) • Skin Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Tract Irritant • Hazardous to Ozone Layer (Non-Mandatory)
<p>Gas Cylinder</p>  <ul style="list-style-type: none"> • Gases Under Pressure 	<p>Corrosion</p>  <ul style="list-style-type: none"> • Skin Corrosion/ Burns • Eye Damage • Corrosive to Metals 	<p>Exploding Bomb</p>  <ul style="list-style-type: none"> • Explosives • Self-Reactives • Organic Peroxides
<p>Flame Over Circle</p>  <ul style="list-style-type: none"> • Oxidizers 	<p>Environment (Non-Mandatory)</p>  <ul style="list-style-type: none"> • Aquatic Toxicity 	<p>Skull and Crossbones</p>  <ul style="list-style-type: none"> • Acute Toxicity (fatal or toxic)

For more information:

Pictograma para la norma sobre la comunicación de peligros

A partir del 1.º de junio de 2015, la norma de comunicación de peligros (HCS, por sus siglas en inglés) exigirá pictogramas en las etiquetas para advertir a los usuarios de los peligros químicos a los que puedan estar expuestos. Cada pictograma representa un peligro definido y consiste en un símbolo sobre un fondo blanco enmarcado con un borde rojo. La clasificación del peligro químico determina el pictograma que muestra la etiqueta.

Pictogramas y peligros según la HCS

<p>Peligro para la salud</p>  <ul style="list-style-type: none"> • Carcinógeno • Mutagenicidad • Toxicidad para la reproducción • Sensibilización respiratoria • Toxicidad específica de órganos diana • Peligro por aspiración 	<p>Llama</p>  <ul style="list-style-type: none"> • Inflamables • Pirofóricos • Calentamiento espontáneo • Desprenden gases inflamables • Reaccionan espontáneamente (autorreactivos) • Peróxidos orgánicos 	<p>Signo de exclamación</p>  <ul style="list-style-type: none"> • Irritante (piel y ojos) • Sensibilizador cutáneo • Toxicidad aguda (dañino) • Efecto narcótico • Irritante de vías respiratorias • Peligros para la capa de ozono (no obligatorio)
<p>Botella de gas</p>  <ul style="list-style-type: none"> • Gases a presión 	<p>Corrosión</p>  <ul style="list-style-type: none"> • Corrosión o quemaduras cutáneas • Lesión ocular • Corrosivo para los metales 	<p>Bomba explotando</p>  <ul style="list-style-type: none"> • Explosivos • Reaccionan espontáneamente (autorreactivos) • Peróxidos orgánicos
<p>Llama sobre círculo</p>  <ul style="list-style-type: none"> • Comburentes 	<p>Medio ambiente (No obligatorio)</p>  <ul style="list-style-type: none"> • Toxicidad acuática 	<p>Calavera y tibias cruzadas</p>  <ul style="list-style-type: none"> • Toxicidad aguda (mortal o tóxica)

Para más información: