



## ATLASTACRETE® E-5000

### DESCRIPTION AND TYPICAL USES

ATLASTACRETE E-5000 is an epoxy resin-based polymer concrete designed for use as a durable, corrosion resistant concrete for pour-in-place and pre-cast applications. ATLASTACRETE E-5000 cures in contact with damp surfaces, in certain underwater applications and at temperatures as low as 40°F (4°C). Conventional concrete placement techniques are used in installations. The ATLASTACRETE E-5000 System includes REZKLAD® E-CONCRETE PRIMER which must be applied to the portland cement concrete or steel substrate prior to placement of the polymer concrete. ATLASTACRETE E-5000 is suitable for applications 3/8" to 1" thick. ATLAS® AGGREGATE No.1 is added for installations thicker than 1".

### CHEMICAL RESISTANCE

ATLASTACRETE E-5000 offers excellent chemical resistance. It is resistant to 80% sulfuric acid as well as many non-oxidizing acids, alkalies, salts, oils, gases, food chemicals and solvents. Refer to the chemical resistance chart for specific information.

### AVAILABLE COLORS

ATLASTACRETE E-5000 is available in gray, red, tan and natural.

### PACKAGING AND COVERAGE

#### REZKLAD E-CONCRETE PRIMER

##### 1/2-Gallon Unit (3 lb. 7 oz. [1.6 kg.]) Consisting of:

One - 1/2-gal. can of Resin (2 lb. 8 oz. [1.1 kg.])

One - 1-pt. can of Hardener (15 oz. [425 g.])

Coverage: Approx. 100 sq. ft. (9.3 m<sup>2</sup>) per unit

##### 1-1/2-Gal. Unit (12 lb. 2 oz. [5.5 kg.]) Consisting of:

One - 1-gal. can of Resin (9 lb. [4.1 kg.])

One - 1/2-gal. can of Hardener (3 lb. 2 oz. [1.4 kg.])

Coverage: Approx. 350 sq. ft. (32.5 m<sup>2</sup>) per unit

### ATLASTACRETE E-5000

#### 3/8" (9.5 mm.) to 1" (25.4 mm.) Thickness

##### 45 lb. 8 oz. (20.6 kg.) Unit Consisting of:

One - 1/2-gal. can of Resin (3 lb. 11 oz. [1.7 kg.])

One - 1-qt. can of Hardener (1 lb. 7 oz. [652 g.])

One - bag of Base Aggregate (40 lb. 6 oz. [18.3 kg.])

Coverage: Approx. 0.33 cu. ft. (0.01 m<sup>3</sup>) per unit

## PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	138 lb./cu. ft. (2.21 g./cc.)
Tensile Strength, 7 days @ 77°F (25°C)	ASTM C307	2,100 psi. (14.5 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C39	13,000 psi. (89.6 MPa)
Flexural Strength, 7 days @ 77°F (25°C)	ASTM C580	4,000 psi. (27.6 MPa)
Flexural Modulus of Elasticity	ASTM C580	2.43 x 10 <sup>6</sup> (1.68 x 10 <sup>4</sup> MPa)
Water Absorption	ASTM C413	0.13%
Temperature Resistance Continual Intermittent		150°F (66°C) 200°F (93°C)
Linear Shrinkage	ASTM C531	0.05%
Impact Resistance, 1" (2.54 cm.) thick, unbonded	ATM No. 35	>160 in. lb.
Working Time @ 77°F (25°C)		30-45 min.

### 565 lb. 8 oz. (256.5 kg.) Unit Consisting of:

One - 5-gal. pail of Resin (47 lb. 8 oz. [21.5 kg.])

Three - 1-gal. cans of Hardener (6 lb. [2.7 kg.]) ea.

Ten - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.

Coverage: Approx. 4.1 cu. ft. (0.12 m<sup>3</sup>) per unit

### Over 1" (25.4 mm.) Thickness

#### 665 lb. 8 oz. (301.9 kg.) Unit Consisting of:

One - 5-gal. pail of Resin (47 lb. 8 oz. [21.5 kg.])

Three - 1-gal. cans of Hardener (6 lb. [2.7 kg.]) ea.

Eight - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.

Four - bags of ATLAS AGGREGATE No. 1 (50 lb. [22.7 kg.]) ea.

Coverage: Approx. 4.8 cu. ft. (0.14 m<sup>3</sup>) per unit

## SURFACE PREPARATION

Abrasive grit blasting is recommended for preparing concrete and metal surfaces. The substrate must be structurally sound, clean and dry. For additional information, refer to Surface Preparation, Data Sheet PS-30.

## TEMPERATURE DURING APPLICATION

Store ATLASTACRETE E-5000 and REZKLAD E-CONCRETE PRIMER at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use. The best working characteristics of the materials will be attained when the temperature of the substrate, air, ATLASTACRETE E-5000 and

REZKLAD E-CONCRETE PRIMER are between 60°F (16°C) and 85°F (29°C). However, the product can be used at temperatures between 40°F (4°C) and 95°F (35°C). When installing below 60°F (16°C), the temperature of the materials when mixing must be 60°F (16°C) or warmer to obtain the proper consistency.

### MIXING AND APPLICATION OF THE REZKLAD E-CONCRETE PRIMER

Mixing of the components should be done with a hand drill equipped with a "Jiffy" type mixer with a mixing speed between 300 and 500 RPM.

- Combine the contents of the cans of REZKLAD E-CONCRETE PRIMER Resin and Hardener in a suitable mixing container. Mix thoroughly for one minute.
- Apply REZKLAD E-CONCRETE PRIMER with a brush or roller making sure to work it into the pores of the concrete. Do not allow puddling.
- The primed surface should be tacky or dry before applying ATLASTACRETE E-5000. If the primer is kept clean, it may be allowed to dry up to the maximum drying time. If the primer is allowed to dry for longer than the maximum drying time, the surface must be sanded and the area reprimed before proceeding.

### TYPICAL WORKING AND DRYING TIMES OF THE REZKLAD E-CONCRETE PRIMER

Temperature	Working Time	Minimum Drying Time	Maximum Drying Time
65°F (18°C)	35 min.	12 hours	48 hours
75°F (24°C)	25 min.	8 hours	48 hours
85°F (29°C)	15 min.	6 hours	24 hours

### MIXING AND APPLICATION OF THE ATLASTACRETE E-5000

#### 45 lb. 8 oz. (20.6 kg.) Unit:

Mixing of the components should be with a KOL type mixer with a 5-gallon capacity. The mixing speed should be between 60 and 75 RPM. A hoe and mortar box may be used for small batches.

- Combine the contents of the 1/2-gallon can (3 lb. 11 oz. [1.7 kg.]) of ATLASTACRETE E-5000 Resin with the contents of the 1-quart can (1 lb. 7 oz. [652 g.]) of ATLASTACRETE E-5000 Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 40 lb. 6 oz. (18.3 kg.) bag of ATLASTACRETE Base Aggregate.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

#### 565 lb. 8 oz. (256.5 kg.) Unit:

This batch size is used when ATLASTACRETE E-5000 is installed at thicknesses between 3/8" (9.5 mm.) and 1" (25.4 mm.). Mixing of the components should be in a concrete mixer.

- Combine the contents of the 5-gallon pail (47 lb. 8 oz. [21.5 kg.]) of ATLASTACRETE E-5000 Resin with the contents of the three cans (6 lb. [2.7 kg.]) of ATLASTACRETE E-5000 Hardener. Mix thoroughly for one minute.
- Slowly add the ten 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

#### 665 lb. 8 oz. (301.9 kg.) Unit:

This batch size is used when ATLASTACRETE E-5000 is installed at thicknesses over 1" (25.4 mm.). Mixing of the components should be in a concrete mixer.

- Combine the contents of the 5-gallon pail (47 lb. 8 oz. [21.5 kg.]) of ATLASTACRETE E-5000 Resin with the contents of the three cans (6 lb. [2.7 kg.]) of ATLASTACRETE E-5000 Hardener. Mix thoroughly for one minute.
- Slowly add the eight 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate and four 50 lb. (22.7 kg.) bags of ATLAS AGGREGATE No. 1.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

### CURE RATE OF ATLASTACRETE E-5000 AT 75°F (24°C)

Cure Time*	Compressive Strength (Typical)
4 hours	875 psi. (6.03 MPa)
8 hours	7,000 psi. (48.3 MPa)
16 hours	12,250 psi. (84.5 MPa)
24 hours	12,250 psi. (84.5 MPa)
7 days	13,000 psi. (89.6 MPa)

**Test specimens: 1.75" x 3.5" cylinders**

**Test method: ASTM C39**

\*Actual cure times for a particular application will vary depending upon the size of the pour. In general, for applications approximately 1" to 1-1/2" thick, ATLASTACRETE E-5000 will be suitable for foot traffic in 8 to 16 hours, light wheeled traffic in 16 to 24 hours and for heavy-duty traffic in 24 to 48 hours.

**FLOORS:** Tamp, screed and finish using appropriate tools. When the edges must be left open during cure, sufficient aggregate must be used to provide a stiff mix. The installation may be put into limited service after 24 hours at 70°F (21°C) to 75°F (24°C). Optimum chemical resistance can be expected after seven days at 70°F (21°C) to 75°F (24°C).

**PUMP PADS AND PIERS:** ATLASTACRETE E-5000 can be continuously poured in thick sections, providing the heat generated as curing progresses can be adequately dissipated to prevent cracking. Provide adequate ventilation.

**EXPANSION JOINTS:** Honor all joints in the concrete substrate when placing ATLASTACRETE E-5000. Additional expansion joints may be required depending upon the conditions to which the floor is subjected. Contact ATLAS' Technical Service Department for assistance.

#### **LIMITATIONS**

Do not apply when relative humidity is greater than 75%.

#### **CLEANING OF TOOLS AND EQUIPMENT**

Steel wool, soap and warm water will remove the materials referred to in this Data Sheet from mixing tools and equipment if cleaning is done immediately after use. Solvents, such as methyl ethyl ketone, toluene or xylene, will have to be used after the material has begun to harden. Fully hardened material will have to be removed by mechanical means.

Dispose of residues and wastes in accordance with the directions in the Material Safety Data Sheets and government regulations.

#### **STORAGE AND SHELF LIFE**

Store all materials in a cool, dry environment. Keep all materials out of direct sunlight. Ideal storage temperature is 75°F (24°C). Protect from freezing. In unopened original containers, the materials referred to in this Data Sheet have a shelf life of approximately one year.

#### **PRODUCT SPECIFICATION**

The system shall be ATLASTACRETE E-5000 as manufactured by Atlas Minerals & Chemicals, Inc.

#### **PRECAUTIONS**

The materials referred to in this Data Sheet are for Industrial Use Only. They contain materials that present handling and potential health hazards. Consult Material Safety Data Sheets and the container labels for complete precautionary information.

#### **TECHNICAL SERVICES**

ATLAS maintains a staff of Technical Service Representatives who are available to assist you with the use of ATLAS products. In the event of difficulties with the application of ATLAS materials, the installation should be stopped immediately and ATLAS' Technical Service Department consulted for assistance.

#### **WARRANTY**

ATLAS warrants that its products will be free from defects in workmanship and materials under normal use for a period of one (1) year from the date of shipment by ATLAS (provided the products are installed before the expiration of the shelf life). THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR THE PURPOSE FOR THIS PRODUCT WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. ATLAS' LIABILITY FOR ALLEGED BREACH OF THIS WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT (BUT NOT INCLUDING REMOVAL OF THE DEFECTIVE PRODUCT OR INSTALLATION OF REPLACEMENT PRODUCTS). ATLAS SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES DURING THE WARRANTY PERIOD OR THEREAFTER. **ATLAS' WARRANTY IS VOIDED IF PAYMENT FOR PRODUCT IS NOT RECEIVED IN FULL.**

# CHEMICAL RESISTANCE OF ATLASTACRETE® E-5000 (8-26PI)

	80°F	150°F
Acetic Acid, to 10%	R	C
Acetic Acid, 10% to 50%	C	N
Acetone	C	--
Alum or Aluminum Sulfate	R	R
Ammonium Chloride, Nitrate, Sulfate	R	R
Ammonium Hydroxide, 10%	R	R
Ammonium Hydroxide, 30%	R	C
Aniline	N	N
Aqua Regia	N	N
Barium Chloride, Sulfate	R	R
Beer	R	R
Benzene	R	C
Benzene Sulfonic Acid, 10%	R	C
Benzoic Acid	R	R
Black Liquor	R	C
Bleaching Liquor, to 2%	R	R
Bleaching Liquor, concentrated	N	N
Boric Acid	R	R
Butyl Acetate	R	R
Butyl Alcohol	R	R
Butyric Acid	N	N
Calcium Chloride, Nitrate, Sulfate	R	R
Calcium Hydroxide	R	R
Calcium Hypochlorite	C	N
Chlorine, Dry or Wet	N	N
Chlorine Water	R	--
Chloroacetic Acid, to 10%	C	--
Chloroform	N	N
Chromic Acid, to 5%	R	R
Chromic Acid, 5% to 10%	R	C
Citric Acid, to 40%	C	N
Copper Chloride, Nitrate, Sulfate	R	R
Ether	R	--
Ethyl Acetate	C	--
Ethyl Alcohol	R	--
Ethylene Dichloride	N	N
Ethylene Glycol	R	R
Fatty Acids	C	C
Ferric Chloride, Nitrate, Sulfate	R	C
Fluosilicic Acid, 30%	A	A
Formaldehyde, to 37%	R	C
Formic Acid, 90%	N	N
Grape Juice	R	C
Hydrobromic Acid, to 20%	R	C
Hydrochloric Acid, to 36%	R	C

	80°F	150°F
Hydrofluoric Acid, to 20%	CB	CB
Hydrofluoric Acid, 20% to 70%	CB	N
Hydrogen Peroxide	R	--
Hypochlorous Acid, to 5%	C	N
Jet Fuel	R	--
Kerosene	R	--
Lactic Acid, to 5%	R	C
Lactic Acid, 5% to 10%	C	C
Lactic Acid, above 10%	C	N
Lard	C	C
Lux Liquid	R	C
Magnesium Chloride, Nitrate, Sulfate	R	R
Maleic Acid	N	N
Methyl Alcohol	C	--
Methylene Chloride	N	--
Methyl Ethyl Ketone	C	--
Milk	R	C
Mineral Oil	R	R
Nickel Chloride, Nitrate, Sulfate	R	R
Nitric Acid, to 5%	R	C
Nitric Acid, 5% to 10%	C	N
Oleic Acid	C	C
Oxalic Acid	C	C
Perchloroethylene	R	R
Petroleum	R	R
Phenol, to 5%	N	N
Phosphoric Acid, to 25%	RB	CB
Phosphoric Acid, 25% to 50%	CB	CB
Phosphoric Acid, above 50%	N	N
Picric Acid, to 5%	N	N
Potassium Chloride, Nitrate, Sulfate	R	R
Potassium Hydroxide, to 25%	R	C
Potassium Hydroxide, 25% to 50%	C	N
Sodium Bicarbonate, Carbonate	R	R
Sodium Chloride, Nitrate, Phosphate	R	R
Sodium Sulfate, Sulfide	R	R
Sodium Hydroxide, to 25%	R	C
Sodium Hydroxide, 25% to 50%	C	C
Sodium Hypochlorite, to 6%	C	C
Sodium Hypochlorite, 16%	N	N
Stannic Chloride	R	N
Stearic Acid	C	C
Sugar	C	C
Sulfuric Acid, to 40%	R	C
Sulfuric Acid, 40% to 80%	R	R

	80°F	150°F
Sulfuric Acid, above 80%	C	C
Sulfurous Acid, to 10%	R	R
Toluene	R	R
Toluene Sulfonic Acid	R	C
Tomato Juice	R	C
Trichloroethylene	R	R
Trisodium Phosphate	R	C
Turpentine	R	--
Urea, to 20%	R	R
Urine	R	C
Vegetable Oil	C	C
Vinegar	R	C
Water, Fresh	R	R
Water, Distilled	R	R
Water and Sewage	R	C
Xylene	R	R
Zinc Chloride, Nitrate, Sulfate	R	R

(6-02<sup>2</sup>)

## KEY

- R - Recommended
- N - Not Recommended
- C - Conditional; May be serviceable if the contaminant is immediately removed or washed off the surface.
- A - Silica Filler may be attacked. Sealing the surface may prolong the life.
- B - May contain traces of hydrofluoric acid or acid fluorides. Silica filler may be attacked (see "A").

**Note** - The information presented in the chemical resistance tables is based on judgments derived from laboratory testing and field service performance. The tables have been prepared as a guide to performance. No guarantee of results is made or implied and no liability in connection with this information is assumed. The information presented herein should be supplemented by in-service testing. The data furnished in the tables may be revised on the basis of further testing.