



ATLASTACRETE® F

DESCRIPTION AND TYPICAL USES

ATLASTACRETE F is a furfuryl alcohol based polymer concrete designed for use as a durable, corrosion resistant concrete repair, overlay and material of construction. ATLASTACRETE F exhibits the outstanding chemical resistance of furan resin based mortars. Conventional concrete placement techniques are used in installations. The ATLASTACRETE F system includes CHEMPRUF F PRIMER which must be applied to the portland cement concrete or steel substrate prior to placement of the polymer concrete. ATLASTACRETE F is suitable for applications at a minimum thickness of 1" (25.4 mm.). ATLASTACRETE F is not recommended for outdoor applications.

CHEMICAL RESISTANCE

Refer to the chemical resistance chart for specific information.

PACKAGING AND COVERAGE

CHEMPRUF F PRIMER

1-Gallon Can 180 ft² (16.7 m²) per coat

ATLASTACRETE F

53 lb. 10 oz. (24.3 kg.) Unit Consisting of:

- One - 1/2-gal. can of Resin (4 lb. [1.8 kg.])
- One - 1-pt. bottle of Hardener (10 oz. [284 g.])
- One - 49 lb. (22.2 kg.) bag mixed aggregate which contains 36 lb. (17.7 kg.) ATLASTACRETE F Base Aggregate and 13 lb. (5.9 kg.) ATLAS® AGGREGATE No. 1

Coverage: Approx. 0.37 cu. ft. (0.01 m³) per unit

604 lb. (274.0 kg.) Unit Consisting of:

- One - 5-gal. pail of Resin (47 lb. [21.3 kg.])
- One - 1-gal. bottle of Hardener (7 lb. [3.2 kg.])
- Eight - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.
- Three - bags of ATLAS AGGREGATE No. 1 (50 lb. [22.7 kg.]) ea.

Coverage: Approx. 4.1 cu. ft. (0.12 m³) 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.

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	144 lb./cu. ft. (2.31 g./cc.)
Tensile Strength, 7 days @ 77°F (25°C)	ASTM C307	1,000 psi. (6.89 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C39	8,600 psi. (59.3 MPa)
Flexural Strength, 7 days @ 77°F (25°C)	ASTM C580	2,500 psi. (17.2 MPa)
Flexural Modulus of Elasticity	ASTM C580	1.46 x 10 ⁵ psi. (1.01 x 10 ³ MPa)
Water Absorption	ASTM C413	0.24%
Temperature Resistance Continual Intermittent		150°F (66°C) 200°F (93°C)
Linear Shrinkage	ASTM C531	0.2%
Impact Resistance, 1" (2.54 cm.) thick, unbonded	ATM No. 35	80 in. lb.
Working Time @ 77°F (25°C)		25-35 min.

TEMPERATURE DURING APPLICATION

Store ATLASTACRETE F and CHEMPRUF F 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 F and CHEMPRUF F PRIMER are between 60°F (16°C) and 90°F (32°C). Minimum temperature for installation is 60°F (16°C). At temperatures below 60°F (16°C), the product may not set or cure properly.

MIXING OF THE CHEMPRUF F PRIMER

CHEMPRUF F PRIMER is a one component primer. Stir the contents of the container by hand. Stir in circular and up and down motions scraping all sides and the bottom of the mixing container. Check for any separation.

APPLICATION OF THE CHEMPRUF F PRIMER

All concrete and steel substrates must be primed with CHEMPRUF F PRIMER. Apply three coats of CHEMPRUF F PRIMER with a brush or medium nap roller. Allow the CHEMPRUF F PRIMER to dry tack free between coats and before application of the ATLASTACRETE F. Work the CHEMPRUF F PRIMER into the pores of concrete substrates. Do not allow puddling.

TYPICAL DRYING TIMES OF THE CHEMPRUF F PRIMER

Temperature	Typical Drying Time	Maximum Drying Time
65°F (18°C)	3 hours	3 days
75°F (24°C)	2 hours	2-1/2 days
85°F (29°C)	1 hours	2 days

MIXING & APPLICATION OF THE ATLASTACRETE F 53 lb. 10 oz. (24.3 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.

- Into two clean and dry 5-gallon pails, divide the contents of the 49 lb. (22.2 kg.) bag of mixed aggregate into two equal parts by volume.
- Pour the contents of the 1/2-gallon can (4 lb. [1.8 kg.]) of ATLASTACRETE F Resin in the 5-gallon capacity mechanical mixer. Begin mixing.
- Slowly add the 1/2 bag, 24 lb. 8 oz. (11.1 kg.), of mixed aggregate, as prepared in Step (a.) and mix until uniform.
- While mixing, slowly add the contents of the 1-pint bottle (10 oz. [284 g.]) of ATLASTACRETE F Hardener.
- Continue mixing while adding the remaining mixed aggregate.
- Mix the combined components for approximately two minutes or until all the aggregate is thoroughly dispersed.

604 lb. (274.0 kg.) Unit:

Mixing of the components should be in a concrete mixer.

- Pour the contents of the 5-gallon pail (47 lb. [21.3 kg.]) of ATLASTACRETE F Resin into the concrete mixer. Begin mixing.
- Slowly add the four 50 lb. (22.7 kg.) bags of ATLASTACRETE F Base Aggregate and mix until uniform.
- While mixing, slowly add the contents of the 1-gallon can (7 lb. [3.2 kg.]) of ATLASTACRETE F Hardener.
- Continue mixing while adding the remaining four 50 lb. (22.7 kg.) bags of ATLASTACRETE F Base Aggregate and the three 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.

FLOORS: Tamp, screed and finish to a minimum thickness of 1" (2.5 cm.) using appropriate tools. When the edges must be left open during cure, sufficient aggregate must be used to provide a stiff mix. Depending on thickness, size of floor done at one time should not exceed 10 sq. ft. (0.9 m²) to 15 sq. ft. (1.4 m²). The installation may be put into service after 24 hours with optimum chemical resistance expected after seven days at 70°F (21°C) to 75°F (24°C).

CURE RATE OF THE ATLASTACRETE F @ 75°F (24°C)

Cure Time*	Compressive Strength (Typical)
4 hours	1,020 psi. (7.03 MPa)
8 hours	1,660 psi. (11.4 MPa)
16 hours	5,045 psi. (34.8 MPa)
24 hours	5,125 psi. (35.3 MPa)
7 days	8,620 psi. (59.4 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 F will be suitable for foot traffic in 8 to 10 hours, light wheeled traffic in 16 to 24 hours and for heavy-duty traffic in 24 to 48 hours.

PUMP PADS AND PIERS: ATLASTACRETE F can be poured in thick sections providing that the heat generated, while it cures, can be adequately dissipated to prevent cracking, i.e., for a 10 sq. ft. (0.9 m²) area, maximum thickness per pour is 2" (5.1 cm.). Provide adequate ventilation.

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

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 ethanol, 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 CHEMPRUF F PRIMER at 60°F (16°C) or less. Store all other materials in a cool, dry environment. Keep all materials out of direct sunlight. In unopened original containers, CHEMPRUF F PRIMER has a shelf life of approximately 90 days. The other materials referred to in this Data Sheet have a shelf life of approximately one year.

PRODUCT SPECIFICATION

The system shall be ATLASTACRETE F 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® F (8-20PI)

	80°F	150°F
Water, Distilled	R	R
Water and Sewage	R	R
Xylene	R	R
Zinc Chloride, Nitrate, Sulfate (6-02 ²)	R	R

	80°F	150°F
Kerosene	R	-
Lactic Acid	R	R
Lard	R	R
Lux Liquid	R	R
Magnesium Chloride, Nitrate, Sulfate	R	R
Maleic Acid	R	R
Methyl Alcohol	R	R
Methyl Ethyl Ketone	R	R
Methylene Chloride	N	-
Milk	R	R
Mineral Oil	R	R
Nickel Chloride, Nitrate, Sulfate	R	R
Nitric Acid, to 30%	N	N
Oleic Acid	R	R
Oxalic Acid	R	R
Perchloroethylene	R	R
Petroleum	R	R
Phenol, to 5%	N	N
Phosphoric Acid	RB	RB
Picric Acid, to 5%	N	N
Potassium Chloride, Nitrate, Sulfate	R	R
Potassium Hydroxide, to 25%	RA	RA
Potassium Hydroxide, 25% to 50%	RA	CA
Sodium Bicarbonate, Carbonate	R	R
Sodium Chloride, Nitrate, Phosphate	R	R
Sodium Hydroxide, to 25%	RA	RA
Sodium Hydroxide, 25% to 50%	RA	CA
Sodium Hypochlorite, to 6%	C	N
Sodium Hypochlorite, 16%	N	N
Sodium Sulfate, Sulfide	R	R
Stannic Chloride	R	R
Stearic Acid	R	R
Sugar, Saturated Solution	R	R
Sulfuric Acid, to 50%	R	R
Sulfuric Acid, above 50%	N	N
Sulfurous Acid, to 10%	R	R
Toluene	R	R
Toluene Sulfonic Acid	R	R
Tomato Juice	R	R
Trichloroethylene	R	R
Trisodium Phosphate	R	R
Turpentine	R	R
Urea, to 20%	R	R
Urine	R	R
Vegetable Oil	R	R
Vinegar	R	R
Water, Fresh	R	R

	80°F	150°F
Acetic Acid, to 50%	R	R
Acetone	R	R
Alum or Aluminum Sulfate	R	R
Ammonium Chloride, Nitrate, Sulfate	R	R
Ammonium Hydroxide, to 30%	R	R
Aniline	N	N
Aqua Regia	N	N
Barium Chloride, Sulfate	R	R
Beer	R	R
Benzene	R	R
Benzene Sulfonic Acid, 10%	R	R
Benzoic Acid	R	R
Black Liquor	R	R
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	R	R
Calcium Chloride, Nitrate, Sulfate	R	R
Calcium Hydroxide	R	R
Calcium Hypochlorite	C	N
Chlorine, Dry	C	N
Chlorine, Wet	N	N
Chlorine Water	N	-
Chloroacetic Acid, to 10%	R	N
Chloroform	R	R
Chromic Acid, to 10%	N	N
Citric Acid, to 40%	R	R
Copper Chloride, Nitrate, Sulfate	R	R
Ether	R	-
Ethyl Acetate	R	R
Ethyl Alcohol	R	R
Ethylene Dichloride	R	R
Ethylene Glycol	R	R
Fatty Acids	R	R
Ferric Chloride, Nitrate, Sulfate	R	R
Fluosilicic Acid, 30%	RA	RA
Formaldehyde, to 37%	R	R
Formic Acid, 10%	R	R
Grape Juice	R	R
Hydrobromic Acid, to 20%	N	N
Hydrochloric Acid, to 37%	R	R
Hydrofluoric Acid, to 70%	RA	RA
Hydrogen Peroxide	N	N
Hypochlorous Acid, to 5%	N	N
Jet Fuel	R	-

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. In actual service, floors and walls protected with ATLASTACRETE F are subjected to splash and spillage, as well as dilution effects of wash water, mixing with other solutions, wetting and drying cycles, temperature cycling and cleaning procedures. For immersion service, contact ATLAS for recommendation. 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.