



Atlas Minerals & Chemicals, Inc.



DATA SHEET

8-23PI (6-03²)
Supersedes 8-23PI (12-02)

ATLASTACRETE® VE

DESCRIPTION AND TYPICAL USES

ATLASTACRETE VE is a novolac vinyl ester based polymer concrete designed for use as a durable, corrosion resistant concrete repair, overlay and material of construction. Typical applications include floors, curbs and pump pads. It is useful for new construction and for quick repair or rehabilitation of existing concrete. ATLASTACRETE VE offers excellent chemical resistance and is placed using conventional concrete placement techniques.

CHEMICAL RESISTANCE

Refer to the chemical resistance chart for specific information.

AVAILABLE COLORS

ATLASTACRETE VE is available in gray, red, tan and natural.

PACKAGING AND COVERAGE

ATLASTACRETE VE PRIMER

1-Gallon Unit (8 lb. 3 oz. [3.7 kg.]) Consisting of:

- One - 1-gal. can of Resin (8 lb. [3.6 kg.])
 - One - bottle of Hardener (73 grams)
- Coverage: Approx. 200 sq. ft. (18.6 m²) per unit

ATLAS® AGGREGATE No. 6

- One - bag (50 lb. [22.7 kg.])
- Coverage: Approx. 1,000 sq. ft. (92.9 m²) per bag

ATLASTACRETE VE

1/2" (12.7 mm.) to 1" (25.4 mm.) Thickness

44 lb. 7 oz. (20.2 kg.) Unit Consisting of:

- One - 1/2-gal. can of Resin (4 lb. [1.8 kg.])
 - One - bottle of Hardener (28 grams)
 - One - bag of Base Aggregate (40 lb. 6 oz. [18.3 kg.])
- Coverage: Approx. 0.31 cu. ft. (0.01 m³) per unit

440 lb. 9.6 oz. (199.9 kg.) Unit Consisting of:

- One - 5-gal. pail of Resin (40 lb. [18.1 kg.])
 - One - bottle of Hardener (9.6 oz. [243 g.])
 - Eight - bags Base Aggregate (50 lb. [22.7 kg.]) ea.
- Coverage: Approx. 3.1 cu. ft. (0.09 m³) per unit

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	140 lb./cu. ft. (2.24 g./cc.)
Tensile Strength, 7 days @ 77°F (25°C)	ASTM C307	1,700 psi. (11.7 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C39	8,200 psi. (56.5 MPa)
Flexural Strength, 7 days @ 77°F (25°C)	ASTM C580	3,000 psi. (20.7 MPa)
Flexural Modulus of Elasticity	ASTM C531	2.34 x 10 ⁶ psi. (1.61 x 10 ⁴ MPa)
Water Absorption	ASTM C413	0.1%
Temperature Resistance Continual Intermittent		160°F (71°C) 200°F (93°C)
Linear Shrinkage	ASTM C531	0.2%
Impact Resistance, 1" (2.54 cm.) thick, unbonded	ATM No. 35	120 in. lb.
Working Time @ 77°F (25°C)		25-35 min.

Over 1" (25.4 mm.) Thickness

490 lb. 9.6 oz. (223.0 kg.) Unit Consisting of:

- One - 5-gal. pail of Resin (40 lb. [18.1 kg.])
 - One - bottle of Hardener (9.6 oz. [243 g.])
 - Six - bags of Base Aggregate (50 lb. [22.7 kg.]) ea.
 - Three - bags ATLAS AGGREGATE No. 1 (50 lb. [22.7 kg.]) ea.
- Coverage: Approx. 3.5 cu. ft. (0.10 m³) per unit

SURFACE PREPARATION

Abrasive grit blasting is recommended for preparing concrete and metal substrates. 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 VE and ATLASTACRETE VE 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 and ATLASTACRETE VE and ATLASTACRETE VE PRIMER are between 65°F (18°C) and 85°F (29°C). Minimum temperature for installation is 65°F (18°C). At temperatures below 65°F (18°C), the product may not set or cure properly.

MIXING AND APPLICATION OF THE ATLASTACRETE VE PRIMER

ATLASTACRETE VE PRIMER is used when ATLASTACRETE VE is applied to concrete or steel substrates.

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

- While stirring, pour the entire contents of the bottle of ATLASTACRETE VE PRIMER Hardener into the can of ATLASTACRETE VE PRIMER Resin. Mix thoroughly for one minute.
- Apply ATLASTACRETE VE PRIMER with a brush or roller.
- Lightly sprinkle ATLAS AGGREGATE No. 6 into the wet primer at a rate of 1 lb. (454 g.) per 20 sq. ft. (1.9 m²).
- The primed surface should be tacky or dry before applying ATLASTACRETE VE. If the primer is kept clean, it may be allowed to dry up to 24 hours.

TYPICAL WORKING AND DRYING TIMES OF THE ATLASTACRETE VE PRIMER

Temperature	Working Time	Minimum Drying Time	Maximum Drying Time
65°F (18°C)	40 min.	8 hours	7 days
75°F (24°C)	30 min.	6 hours	6 days
85°F (29°C)	20 min.	4 hours	5 days

MIXING AND APPLICATION OF THE ATLASTACRETE VE

44 lb. 7 oz. (20.2 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.

- While stirring, pour the contents of the 28 gram bottle of ATLASTACRETE VE Hardener into the 1/2-gallon can (4 lb. [1.8 kg.]) of ATLASTACRETE VE Resin. Mix thoroughly for one minute.
- Pour the mixed material into a 5-gallon pail.
- 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.

440 lb. 9.6 oz. (200.3 kg.) Unit:

This batch size is used when ATLASTACRETE VE is installed at thicknesses between 1/2" (12.7 mm.) and 1" (25.4 mm.).

Mixing of the components should be in a concrete mixer.

- While stirring, pour the contents of the 9.6 oz. (243 g.) bottle of ATLASTACRETE VE Hardener into the 5-gallon pail (40 lb. [18.1 kg.]) of ATLASTACRETE VE Resin. Mix thoroughly for one minute.
- Pour the mixed material into the concrete mixer.

- Slowly add the eight 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.

490 lb. 9.6 oz. (223.0 kg.) Unit:

This batch size is used when ATLASTACRETE VE is installed at thicknesses over 1" (25.4 mm.).

Mixing of the components should be in a concrete mixer.

- While stirring, pour the contents of the 9.6 oz. (243 g.) bottle of ATLASTACRETE VE Hardener into the 5-gallon pail (40 lb. [18.1 kg.]) of ATLASTACRETE VE Resin. Mix thoroughly for one minute.
- Pour the mixed material into the concrete mixer.
- Slowly add the six 50 lb. (22.7 kg.) bags of ATLASTACRETE Base Aggregate and 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.

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

Cure Time*	Compressive Strength (Typical)
4 hours	6,280 psi. (43.3 MPa)
8 hours	6,670 psi. (46.0 MPa)
16 hours	6,900 psi. (47.6 MPa)
24 hours	7,000 psi. (48.3 MPa)
7 days	8,200 psi. (56.5 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 less than 1" thick, ATLASTACRETE VE will be suitable for foot traffic in 2 to 4 hours, light wheeled traffic in 8 to 16 hours and for heavy-duty traffic in 24 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. Size of floor done at one time should not exceed 20 sq. ft. (1.9 m²). The installation may be put into limited service after 2 to 4 hours with optimum chemical resistance expected after seven days at 70°F (21°C) to 75°F (24°C).

PUMP PADS AND PIERS: ATLASTACRETE VE can be poured in 4" to 6" thick sections, providing that the heat generated while it cures, can be adequately dissipated to prevent cracking. Additional lifts may be installed as soon as previous sections cure hard and begin to cool. Provide adequate ventilation.

EXPANSION JOINTS: Honor all joints in the concrete substrate when placing ATLASTACRETE VE. 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%. Odors from uncured materials may contaminate certain products, such as food stuffs. Removal of these products may be necessary during installations and cure. Evacuate odors to exterior environment and restrict odors from circulating throughout the building.

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 ATLASTACRETE VE resins and hardeners at 60°F (16°C) or less. Store all other materials in a cool, dry environment. Protect from freezing. Keep all materials out of direct sunlight. In unopened original containers, ATLASTACRETE VE resins and hardeners have a shelf life of approximately six months. The other materials referred to in this Data Sheet can be stored indefinitely.

PRODUCT SPECIFICATION

The system shall be ATLASTACRETE VE 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® VE (8-23PI)

	80°F	H
Acetaldehyde	N	N
Acetic Acid, to 10%	R	R
Acetic Acid, Glacial	N	N
Alum or Aluminum Sulfate	R	R
Aluminum Chloride, Nitrate	R	R
Ammonium Chloride, Nitrate, Sulfate	R	R
Ammonium Hydroxide, to 25%	R	C
Amyl Acetate	N	N
Amyl Alcohol	R	C
Aniline	N	N
Aqua Regia	N	N
Barium Chloride, Nitrate, Sulfate, Sulfide	R	R
Barium Hydroxide	R	C
Benzene	R	N
Benzene Sulfonic Acid, 10%	R	R
Benzoic Acid	R	R
Boric Acid	R	R
Bromine Water	N	N
Butyl Acetate	N	N
Butyl Alcohol	N	N
Butyric Acid	R	C
Cadmium Chloride, Nitrate, Sulfate	R	R
Calcium Bisulfite	R	R
Calcium Chloride, Nitrate, Sulfate	R	R
Calcium Hydroxide, to 25%	R	R
Carbon Disulfide	N	N
Carbon Tetrachloride	N	N
Chlorine Dioxide, Water Solution	R	R
Chlorine, Dry or Wet	R	R
Chlorine Water	R	-
Chloroacetic Acid, to 10%	R	C
Chlorobenzene	N	N
Chloroform	N	N
Chromic Acid, to 5%	R	C
Chromic Acid, 5% to 20%	R	N
Chromic Acid, above 50%	N	N
Citric Acid, to 10%	R	R
Copper Chloride, Nitrate, Sulfate	R	R
Dichloroacetic Acid, 10%	R	N
Dichlorobenzene	N	N
Diethyl Ether	N	N
Ethyl Acetate	N	N
Ethyl Alcohol	R	C
Ethyl Sulfate	C	N
Ethylene Dichloride	N	N
Ethylene Glycol	R	R
Fluosilicic Acid	N	N
Formaldehyde	R	R

	80°F	H
Formic Acid	R	C
Gasoline	R	R
Glycerine	R	R
Gold Cyanide	R	R
Hexane	R	R
Hydrobromic Acid	R	R
Hydrochloric Acid	R	R
Hydrocyanic Acid	R	R
Hydrofluoric Acid	N	N
Hydrofluosilicic Acid	N	N
Hydrogen Peroxide	R	C
Hydrogen Sulfide Gas, Dry or Wet	R	R
Iron Chloride, Nitrate, Sulfate	R	R
Isopropyl Ether	N	N
Kerosene	R	-
Lactic Acid	R	R
Lead Acetate, Nitrate	R	R
Linseed Oil	R	R
Magnesium Chloride, Nitrate, Sulfate	R	R
Magnesium Hydroxide, to 25%	R	R
Maleic Acid	R	R
Mercuric Acetate	R	R
Methyl Acetate	N	N
Methyl Alcohol	R	C
Methyl Ethyl Ketone	N	N
Methyl Sulfate	C	N
Mineral Oil	R	R
Mineral Spirits	R	R
Muriatic Acid	R	R
Nickel Chloride, Nitrate, Sulfate	R	R
Nitric Acid, to 20%	R	R
Nitric Acid, 20% to 40%	C	N
Nitric Acid, above 40%	N	N
Nitrobenzene	N	N
Oleic Acid	R	R
Oxalic Acid	R	R
Perochloric Acid, to 30%	R	N
Phenol, to 5%	R	R
Phosphoric Acid	R	R
Phosphorous Acid	R	R
Phosphorous Trichloride	N	N
Phthalic Acid	R	R
Picric Acid, to 10%	R	R
Potassium Bicarbonate, Carbonate	R	R
Potassium Chloride, Nitrate, Sulfate	R	R
Potassium Cyanide	R	C
Potassium Ferricyanide, Ferrocyanide	R	R
Potassium Hydroxide, to 25%	R	R

	80°F	H
Potassium Hydroxide, above 25%	C	N
Pyridine	N	N
Rochelle Salt	R	R
Salicylic Acid	R	R
Silver Nitrate	R	R
Sodium Acetate	R	R
Sodium Bicarbonate, Carbonate	R	R
Sodium Chloride, Nitrate, Sulfate	R	R
Sodium Cyanide, 10%	R	R
Sodium Hydroxide, to 25%	R	R
Sodium Hydroxide, 25% to 50%	C	C
Sodium Hypochlorite, to 15%	R	R
Sodium Hypochlorite, above 15%	R	C
Sodium Sulfide, Sulfite, Thiosulfate	R	R
Soya Oil	R	R
Stearic Acid	R	R
Sulfur Dioxide Gas, Dry or Wet	R	R
Sulfur Trioxide Gas, Dry	R	N
Sulfur Trioxide Gas, Wet	N	N
Sulfuric Acid, to 50%	R	R
Sulfuric Acid, 50% to 80%	C	N
Sulfurous Acid, to 10%	R	R
Tannic Acid	R	R
Tartaric Acid	R	R
Tin Chloride, Sulfate	R	R
Toluene	C	N
Trichloroethylene	N	N
Trisodium Phosphate	R	R
Tung Oil	R	R
Urea	R	R
Xylene	N	N
Zinc Chloride, Nitrate, Sulfate	R	R

KEY (6-03²)

- R - Recommended
- N - Not Recommended
- C - Conditional. May be serviceable if the contaminant is immediately removed or washed off the surface.
- H - Up to temperature limitations of the cement. When the chemical boils below this point, resistance is shown to the boiling point.

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.