



REZKLAD® E-135S / REZKLAD® E-135SC

DESCRIPTION

REZKLAD E-135S and REZKLAD E-135SC are high performance, high solids, acid and solvent resistant, spray applied toppings.

TYPICAL USES

REZKLAD E-135S and REZKLAD E-135SC are recommended for spray application on horizontal, vertical and overhead, concrete and steel surfaces. They can be used for floors, walls, ceilings, sumps, trenches and dikes where excellent chemical resistance and physical characteristics are required. Aggressive environments such as 98% sulfuric acid or hydrofluoric/nitric acid blends in metal processing industries are environments that are ideal for REZKLAD E-135S or REZKLAD E-135SC. The combination of excellent chemical and wear resistance are ideal for areas of rolling traffic, such as chemical production floors and truck unloading areas.

CHEMICAL RESISTANCE

REZKLAD E-135S offers resistance to inorganic acid solutions of 98% sulfuric acid, concentrated hydrochloric acid, concentrated phosphoric acid, 20% nitric acid and 30% chromic acid. It is resistant to organic solvents such as toluene, xylene and benzene, as well as dilute alkalis, alkaline hypochlorite solutions and intermittent exposure to many dilute organic acids, such as 10% acetic acid, 10% lactic acid and 10% citric acid. REZKLAD E-135SC provides additional resistance to inorganic acid solutions of 70% hydrofluoric acid, fluoroboric acid, fluorides, 50% sodium hydroxide and hydrofluoric/nitric acid blends. Refer to the chemical resistance chart for specific information.

METHOD OF INSTALLATION

REZKLAD E-135S and REZKLAD E-135SC are designed for spray application at thicknesses of 1/8" (3.2 mm.) to 3/16" (4.8 mm.) for horizontal surfaces. For vertical and overhead surfaces, as well as immersion service, two 1/16" (1.6 mm.) applications are recommended to achieve a 1/8" (3.2 mm.) minimum thickness.

AVAILABLE COLORS

Standard colors of REZKLAD E-135S are gray and red. REZKLAD E-135SC is available in black only.

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE	
		E-135S	E-135SC
Density	ASTM C905	122 lb./cu. ft. (1.95 g./cc.)	84 lb./cu. ft. (1.35 g./cc.)
Bond Strength, 7 days @ 77°F (25°C)		Concrete Fails	
Tensile Strength, 7 days @ 77°F (25°C)	ASTM C307	1,900 psi. (13.1 MPa)	1,400 psi. (9.7 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C579	12,000 psi. (82.7 MPa)	8,400 psi. (57.9 MPa)
Flexural Strength, 7 days @ 77°F (25°C)	ASTM C580	4,500 psi. (31.0 MPa)	2,900 psi. (20.0 MPa)
Flexural Modulus of Elasticity	ASTM C580	1.6 x 10 ⁶ psi. (11,000 MPa)	5.2 x 10 ⁵ psi. (3,600 MPa)
Coefficient of Thermal Exp., in./in./°F (cm./cm./°C)	ASTM C531	3.2 x 10 ⁻⁵ (5.8 x 10 ⁻⁵)	2.8 x 10 ⁻⁵ (5.0 x 10 ⁻⁵)
Water Absorption	ASTM C413	0.1%	0.3%
Temperature Resistance Continual Intermittent		140°F (60°C) 175°F (79°C)	140°F (60°C) 175°F (79°C)
Linear Shrinkage	ASTM C531	0.1%	0.3%
Hardness, Shore D-2		80-85	70-80
Abrasion Resistance, Taber CS-17 wh., 1 kg., 1,000 cyc.	ASTM C501	72 mg. weight loss	168 mg. weight loss
Flammability Extent of Burn	ASTM D635	Self-extinguishing 9 mm.	
Impact Resistance, 1/8" (3.2 mm.) thick, unbonded	Gardner Tester	26 in. lb.	18 in. lb.

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 m²) 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 m²) per unit

PACKAGING - REZKLAD E-135S

40 lb. (18.1 kg.) Unit Consisting of:

One - 1-gal. can of Resin (6 lb. [2.7 kg.])

Two - 1-qt. cans of Hardener (1 lb. 6 oz. [624 g.]) ea.

One - bag of Powder (31 lb. 4 oz. [14.2 kg.])

240 lb. (108.9 kg.) Unit Consisting of:

One - 5-gal. pail of Resin (36 lb. [16.3 kg.])

Two - 1-gal. cans of Hardener (8 lb. 4 oz. [3.7 kg.]) ea.

Six - bags of Powder (31 lb. 4 oz. [14.2 kg.]) ea.

REZKLAD S CLEANER

One - 5-gal. pail (40 lb. [18.1 kg.])

One pail is required each time the spray equipment is cleaned.

ESTIMATING OF THE REZKLAD E-135S

Thickness	40 lb. (18.1 kg.)	240 lb. (108.9 kg.)
1/8"	31 sq. ft.	180 sq. ft.
3/16"	20 sq. ft.	120 sq. ft.

SURFACE PREPARATION

REZKLAD E-135S and REZKLAD E-135SC can be applied to concrete and metal surfaces. The substrate must be structurally sound, clean, dry and free of all contaminants such as sealers, curing compounds, coatings, oil, dirt, dust and water. Previously applied coatings or paint must be removed.

Concrete: Finished concrete must be free of ridges, protrusions, fins, mortar splatter and have a tight, laitance-free steel trowel finish. Abrasive grit blasting or acid washing are recommended surface preparation methods. A finish similar to the profile of 100 to 120 grit sandpaper is suggested.

Metals: Metal surfaces should be grit blasted to a NACE #1 white metal blast cleaned surface finish. When grit blasting is not practical, clean by wire brushing or with abrasive paper and wash with degreasing solvent such as xylene.

For additional information, refer to Surface Preparation, Data Sheet PS-30.

TEMPERATURE DURING APPLICATION

Store REZKLAD E-135S, REZKLAD E-135SC 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, REZKLAD E-135S, REZKLAD E-135SC and REZKLAD E-CONCRETE PRIMER are between 60°F (16°C) and 85°F (29°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 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 at 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 REZKLAD E-135S or REZKLAD E-135SC.

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 & 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 OF THE REZKLAD E-135S

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.

Set up a mixing station convenient to the installation location. Freshly mixed material must be constantly placed in the spray machine hopper to ensure continual application. A delay in application of 1/2 hour or more at 77°F (25°C) will require all equipment to be thoroughly cleaned. This delay is shorter at higher temperatures.

First batch: REZKLAD E-135S should be mixed as described below. However, only 25 lb. (11.3 kg.) of REZKLAD S Powder should be added at Step (b.) to allow for proper wetting out of the hose.

40 lb. (18.1 kg.) Unit:

- Combine the contents of the 6 lb. (2.7 kg.) can of REZKLAD E-135S Resin with the two 1 lb. 6 oz. (624 g.) cans of REZKLAD E-135S Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 31 lb. 4 oz. (14.2 kg.) bag of REZKLAD S Powder.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

240 lb. (108.9 kg.) Unit:

- Combine 77 fluid ounces (2.29 liters) of REZKLAD E-135S Resin and 42 fluid ounces (1.25 liters) of REZKLAD E-135S Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 31 lb. 4 oz. (14.2 kg.) bag of REZKLAD S Powder.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

Note: The amount of powder may be varied slightly to obtain the desired consistency and to improve flow characteristics. Decreasing the powder component will decrease the estimated coverage.

MIX RATIO CHART - REZKLAD E-135S

REZKLAD E-135S	Weight	Volume
REZKLAD E-135S Resin	6 lb. (2.7 kg.)	77 fl. oz. (2.29 liters)
REZKLAD E-135S Hardener	2 lb. 12 oz. (1.2 kg.)	42 fl. oz. (1.25 liters)
REZKLAD S Powder	31 lb. 4 oz. (14.2 kg.)	31 lb. 4 oz. (14.2 kg.) bag
Batch Size	40 lb. (18.1 kg.)	0.33 cu. ft. (9.3 liters)

APPLICATION OF THE REZKLAD E-135S / REZKLAD E-135SC

REZKLAD E-135S and REZKLAD E-135SC are applied to surfaces which have been primed with REZKLAD E-CONCRETE PRIMER.

REZKLAD E-135S and REZKLAD E-135SC are recommended to be applied using Quikspray® Machine Model #1025E. This machine is available for rental from ATLAS. Separate "Operating Instructions" are available upon request and are supplied with the unit.

For floors, REZKLAD E-135S and REZKLAD E-135SC are applied at thicknesses of 1/8" (3.2 mm.) to 3/16" (4.8 mm.). For walls and overhead surfaces, as well as immersion service, two 1/16" (1.6 mm.) applications are applied to achieve a 1/8" (3.2 mm.) minimum thickness without sagging. The first coat must be allowed to dry before applying the second coat. Refer to the "Typical Setting Times" chart for specific information.

Note: Nearby surfaces not scheduled for application of the REZKLAD E-135S or REZKLAD E-135SC should be draped to protect against overspray.

FINISH OF THE REZKLAD E-135S / REZKLAD E-135SC

The normal finish of REZKLAD E-135S and REZKLAD E-135SC offers slip resistance. For a smoother surface, roll the coated surface with ethanol, while it is still wet. Wet a short nap roller with ethanol, shake to remove any excess, as this will hinder setting, and roll the surface just long enough to achieve the desired finish. If a coarse finish is desired, apply a second coat at less than 1/8" (3.2 mm.) thickness.

TYPICAL SETTING TIMES OF THE REZKLAD E-135S / REZKLAD E-135SC

Temperature	Setting Time	Support Foot Traffic
65°F (18°C)	16 hours	48 hours
75°F (24°C)	12 hours	24 hours
85°F (29°C)	8 hours	16 hours

REZKLAD E-135SC**PACKAGING - REZKLAD E-135SC****21 lb. 6 oz. (9.7 kg.) Unit Consisting of:**

One - 1-gal. can of Resin (6 lb. [2.7 kg.])
Two - 1-qt. cans of Hardener (1 lb. 6 oz. [624 g.]) ea.
One - bag of Powder (12 lb. 10 oz. [5.7 kg.])

128 lb. 4 oz. (58.2 kg.) Unit Consisting of:

One - 5-gal. pail of Resin (36 lb. [16.3 kg.])
Two - 1-gal. cans of Hardener (8 lb. 4 oz. [3.7 kg.]) ea.
Three - bags of Powder (25 lb. 4 oz. [11.5 kg.]) ea.

ESTIMATING OF THE REZKLAD E-135SC

Thickness	21 lb. 6 oz. (9.7 kg.)	128 lb. 4 oz. (58.2 kg.)
1/8"	24 sq. ft.	140 sq. ft.
3/16"	16 sq. ft.	90 sq. ft.

MIXING OF THE REZKLAD E-135SC

Mixing of the components should be done with a KOL type mixer with a 5-gallon capacity. The mixing speed should be between 60 to 75 RPM.

Set up a mixing station convenient to the installation location. Freshly mixed material must be constantly placed in the spray machine hopper to ensure continual application. A delay in mixing or application

of 1/2 hour or more at 77°F (25°C) will require all equipment to be thoroughly cleaned. This delay is shorter at higher temperatures.

First batch: REZKLAD E-135SC should be mixed as described below. However, only 9 lb. (4.1 kg.) REZKLAD SC Powder should be added at Step (b.) for the 21 lb. 6 oz. (9.7 kg.) unit and only 9 lb. (4.1 kg.) REZKLAD SC Powder at Step (c.) for the 128 lb. (58.2 kg.) unit to allow for proper wetting out of the hose.

21 lb. 6 oz. (9.7 kg.) Unit:

- Combine the contents of the 6 lb. (2.7 kg.) can of REZKLAD E-135S Resin with the two 1 lb. 6 oz. (624 g.) cans of REZKLAD E-135S Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 12 lb. 10 oz. (5.7 kg.) bag of REZKLAD SC Powder.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

128 lb. 4 oz. (58.2 kg.) Unit:

- Into two clean and dry 5-gallon pails, divide the contents of one of the 25 lb. 4 oz. (11.5 kg.) bags

MIX RATIO CHART - REZKLAD E-135SC

REZKLAD E-135SC	Weight	Volume
REZKLAD E-135S Resin	6 lb. (2.7 kg.)	77 fl. oz. (2.29 liters)
REZKLAD E-135S Hardener	2 lb. 12 oz. (1.2 kg.)	42 fl. oz. (1.25 liters)
REZKLAD SC Powder	12 lb. 10 oz. (5.7 kg.)	1/2 of 25 lb. 4 oz. (11.5 kg.) bag
Batch Size	21 lb. 6 oz. (9.7 kg.)	0.25 cu. ft. (7.1 liters)

of REZKLAD SC Powder into two equal parts by volume.

- Combine 77 fluid ounces (2.29 liters) of REZKLAD E-135S Resin and 42 fluid ounces (1.25 liters) of REZKLAD E-135S Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 1/2 bag, 12 lb. 10 oz. (5.7 kg.), of REZKLAD SC Powder, as prepared in Step (a).
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

Note: The amount of powder may be varied slightly to obtain the desired consistency and improve flow characteristics. Decreasing the powder component will decrease the estimated coverage.

STORAGE AND SHELF LIFE

REZKLAD E-135S Resin must be stored at temperatures above 50°F (10°C) to prevent crystallization. Uncrystallized resin is a slightly opaque, amber-colored liquid while crystallized resin has a milky, translucent appearance. If crystals form, heat slowly to 120°F (49°C) and stir until crystals dissolve. Cool before using. This will not affect the chemical or physical properties of the finished product. Store all other 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.

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 if the material has begun to harden. Fully hardened material will have to be removed by mechanical means.

REZKLAD S Cleaner is used to clean the Quikspray® Machine. Detailed information is available in the "Operating Instructions".

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

PRODUCT SPECIFICATION

The system shall be REZKLAD E-135S or REZKLAD E-135SC as manufactured by Atlas Minerals &

Chemicals, Inc. The topping shall be spray applied and be resistant to organic and inorganic acids and organic solvents and provide abrasion and wear resistance.

PRECAUTIONS

Contact with certain concentrated acids may cause the surface of REZKLAD E-135S to change color. This color change will not affect the chemical resistance.

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.

Note: Atlas makes it a practice to continuously update and enhance our CCM (Corrosion Resistant Construction Materials) products. This may result in slight discrepancies between our printed Data Sheets and the current version. For the most recent version of any Data Sheet, please visit our Web site at www.atlasmin.com

CHEMICAL RESISTANCE OF REZKLAD® E-135S / REZKLAD® E-135SC (3-109PI)

Acetic Acid, to 10%	E
Acetic Acid, 10% to 50%	C
Acetone	F
Alum or Aluminum Sulfate	E
Ammonium Chloride, Nitrate, Sulfate	E
Ammonium Hydroxide, to 30%	E
Aniline	C
Animal Oils	C
Bakery Products	C
Barium Chloride, Sulfate	E
Beer	E
Benzene	E
Benzene Sulfonic Acid, 10%	E
Benzoic Acid	E
Black Liquor	E
Boric Acid	E
Bromine	C
Butter	C
Butyl Acetate	E
Butyl Alcohol	E
Butyric Acid	C
Calcium Chloride, Nitrate, Sulfate	E
Calcium Hydroxide	E
Calcium Hypochlorite	G
Carbonated Water	E
Casein	G
Cheese, all	G
Chlorine, Dry	G
Chlorine, Wet	F
Chlorine Water	E
Chloroacetic Acid, to 10%	C
Chloroform	C
Chromic Acid, to 30%	E
Cider	F
Citric Acid, to 10%	E
Citrus Fruits	F
Coffee	E
Copper Chloride, Nitrate, Sulfate	E
Corn Oil	C
Corn Syrup	C
Egg Yolk	E
Ethyl Acetate	G
Ethyl Alcohol	E
Ethyl Ether	E
Ethylene Dichloride	C
Ethylene Glycol	E
Fatty Acids	C
Ferric Chloride, Nitrate, Sulfate	E

Fluoroboric Acid	EA
Fluosilicic Acid	EA
Formaldehyde	G
Formic Acid, 10%	F
Fruit Extracts	F
Fruit Juices	G
Gasoline	E
Glucose	F
Glycerine	G
Grape Juice	G
Horse Radish	F
Hydrobromic Acid, to 20%	E
Hydrochloric Acid, to 36%	E
Hydrofluoric Acid, to 20%	GA
Hydrofluoric Acid, 20% to 70%	CA
Hydrofluosilicic Acid	EA
Hydrogen Peroxide	G
Hypochlorous Acid, to 5%	E
Ice Cream	E
Jams & Jellies	F
Jet Fuel	E
Kerosene	E
Ketchup	F
Lactic Acid, to 10%	E
Lactic Acid, above 10%	F
Lard	C
Linseed Oil	F
Lux Liquid	E
Magnesium Chloride, Nitrate, Sulfate	E
Magnesium Hydroxide	E
Maleic Acid, 25%	C
Malt	F
Malt Liquors	F
Margarine	C
Methyl Alcohol	G
Methyl Ethyl Ketone	G
Methylene Chloride	N
Milk	E
Mineral Oil	E
Mineral Spirits	E
Molasses	F
Muriatic Acid	E
Mustard	F
Nickel Chloride, Nitrate, Sulfate	E
Nitric Acid, to 20%	E
Nitric Acid, 20% to 30%	F
Oleic Acid	C
Olive Oil	G

Oxalic Acid	G
Pectin	E
Perchloroethylene	E
Petroleum	E
Phenol, to 5%	C
Phosphoric Acid	G
Pickles	E
Picric Acid, to 5%	E
Potassium Chloride, Nitrate, Sulfate	E
Potassium Hydroxide, to 25%	E
Potassium Hydroxide, 25% to 50%	G
Salad Oils	G
Salicylic Acid	G
Shortening	C
Silver Nitrate	E
Skydrol	E
Smokehouse Residues	F
Sodium Bicarbonate, Carbonate	E
Sodium Bisulfate, Sulfate	E
Sodium Chloride, Nitrate, Phosphate	E
Sodium Hydroxide, to 25%	E
Sodium Hydroxide, 25% to 50%	EA
Sodium Hypochlorite	G
Sodium Sulfide, Sulfite	E
Sodium Thiosulfate	E
Soft Drink Concentrates	F
Soft Drinks	G
Soups	E
Soya Oil	C
Stearic Acid	F
Sugar, Saturated Solution	F
Sulfuric Acid, to 80%	E
Sulfuric Acid, 80% to 93%	G
Sulfuric Acid, 93% to 98%	F
Sulfurous Acid	E
Syrup	F
Tannic Acid	F
Tartaric Acid	F
Tea	E
Toluene	E
Toluene Sulfonic Acid	G
Tomato Juice	F
Trichloroethylene	E
Trisodium Phosphate	E
Tung Oil	C
Turpentine	G
Urea	E
Urine	E

KEY

E - Excellent

G - Good

F - Fair

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.

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 REZKLAD E-135S / E-135SC 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. Contact with certain concentrated acids may cause the surface of REZKLAD E-135S to change color. This color change will not affect the chemical resistance. 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.