



Atlas Minerals & Chemicals, Inc.



DATA SHEET

7-700PI (10-01²)

FLEXKLAD E-70

DESCRIPTION

FLEXKLAD E-70 is a corrosion resistant, flexible, high solids epoxy coating. FLEXKLAD E-70 may be applied without a primer to properly prepared concrete and carbon steel substrates by roller, squeegee or brush.

TYPICAL USES

FLEXKLAD E-70 is an ideal floor, wall and carbon steel coating for environments that experience frequent thermal expansion-contraction or vibration. The durable easy to apply coating system is excellent for foot or light fork lift traffic areas or as a topcoat over monolithic floor toppings exposed to chemical splash and spill environments. The versatile coating can be furnished with a variety of easy-to-clean finishes that are well suited for food processing, mechanical equipment rooms, chemical storage rooms, light manufacturing-assembly areas and warehouse environments.

CHEMICAL RESISTANCE

FLEXKLAD E-70 is resistant to splash and spills of many acids, alkalies, salts, oils, greases and food chemicals. Refer to the chemical resistance chart for specific information.

METHOD OF INSTALLATION

FLEXKLAD E-70 is designed to be applied with a roller, squeegee or brush over concrete or carbon steel substrates. FLEXKLAD E-70 is typically applied from 5 mils (0.13 mm.) to 10 mils (0.25 mm.) per coat on horizontal surfaces and 5 mils (0.13 mm.) on vertical surfaces. Slip resistant floor finishes are achieved by broadcasting ATLAS® AGGREGATE into the wet basecoat and sealed with a second coat of FLEXKLAD E-70.

AVAILABLE COLORS

FLEXKLAD E-70 is available in red, gray and white.

PACKAGING AND COVERAGE

FLEXKLAD E-CONCRETE PRIMER

1-1/2-Gallon Unit (12 lb. 14 oz. [5.8 kg.]) Consisting of:

One - 1-gal. can of Resin (6 lb. 7 oz. [2.9 kg.])

One - 1-gal. can of Hardener (6 lb. 7 oz. [2.9 kg.])

Coverage: Approx. 300 sq. ft. (27.9 m²) per unit

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
% Solids	ATLAS	96 to 98%
Temperature Resistance, as a Coating over Concrete* Continual Intermittent	ATLAS	140°F (60°C) 200°F (93°C)
Abrasion Resistance, Taber CS-17 wh., 1 kg., 1,000 cyc. Smooth Finish	ASTM C501	78
Hardness, Shore D	ASTM D2240	65-70
Elongation	ASTM D638	22-32%

*When applied over an epoxy monolithic floor topping, temperature resistance may vary.

FLEXKLAD E-70

1-3/4-Gal. Unit (17 lb. 7 oz. [7.9 kg.]) Consisting of:

One - 1-gal. can of Resin (11 lb. [5.0 kg.])

One - 1-gal. can of Hardener (6 lb. 7 oz. [2.9 kg.])

8-3/4-Gal. Unit (87 lb. 3 oz. [39.5 kg.]) Consisting of:

One - 5-gal. pail of Resin (55 lb. [24.9 kg.])

Five - 1-gal. cans of Hardener (6 lb. 7 oz. [2.9 kg.]) ea.

COVERAGE OF THE FLEXKLAD E-70

Unit Size	5 mils	10 mils	Over Aggregate
1-3/4-Gallon	569 sq. ft.	284 sq. ft.	218 sq. ft.
8-3/4-Gallon	2,845 sq. ft.	1,422 sq. ft.	1,094 sq. ft.

ATLAS AGGREGATE No. 8 (Fine Finish)

One - bag (100 lb. [45.4 kg.])

Coverage broadcast to excess: Approx. 500 sq. ft. (46.5 m²) per bag

Coverage light broadcast: Approx. 2,000 sq. ft. (186 m²) per bag

ATLAS AGGREGATE No. 2 (Coarse Finish)

One - bag (100 lb. [45.4 kg.])

Coverage broadcast to excess: Approx. 500 sq. ft. (46.5 m²) per bag

Coverage light broadcast: Approx. 2,000 sq. ft. (186 m²) per bag

SURFACE PREPARATION

FLEXKLAD E-70 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.

Carbon Steel: Metal surfaces should be grit blasted to a SSPC-SP5 or 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 FLEXKLAD E-70 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, FLEXKLAD E-CONCRETE PRIMER and FLEXKLAD E-70 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.

FLEXKLAD E-CONCRETE PRIMER

FLEXKLAD E-CONCRETE PRIMER is not required if the FLEXKLAD E-70 is to be applied to properly prepared new and cured concrete substrates or grit blasted carbon steel substrates as described in the Surface Preparation Data Sheet, PS-30. FLEXKLAD E-CONCRETE PRIMER must be applied to all other conditions of concrete substrates after proper surface preparation.

TYPICAL WORKING & DRYING TIMES OF THE FLEXKLAD E-CONCRETE PRIMER

Temperature	Working Time	Minimum Drying Time	Maximum Drying Time
65°F (18°C)	40 min.	14 hours	48 hours
75°F (24°C)	30 min.	6 hours	36 hours
85°F (29°C)	20 min.	4 hours	24 hours

MIX RATIO CHART - FLEXKLAD E-CONCRETE PRIMER

FLEXKLAD E-CONCRETE PRIMER	Weight	Volume
FLEXKLAD E-CONCRETE PRIMER Resin	6 lb. 7 oz. (2.9 kg.)	90 fl. oz. (2.7 liters)
FLEXKLAD E-CONCRETE PRIMER Hardener	6 lb. 7 oz. (2.9 kg.)	101 fl. oz. (3.0 liters)
Batch Size	12 lb. 14 oz. (5.8 kg.)	191 fl. oz. (5.6 liters)

MIX RATIO CHART - FLEXKLAD E-70

FLEXKLAD E-70	Weight	Volume
FLEXKLAD E-70 Resin	11 lb. (5.0 kg.)	127 fl. oz. (3.8 liters)
FLEXKLAD E-70 Hardener	6 lb. 7 oz. (2.9 kg.)	101 fl. oz. (3.0 liters)
Batch Size	17 lb. 7 oz. (7.9 kg.)	228 fl. oz. (6.7 liters)

MIXING AND APPLICATION OF THE FLEXKLAD E-CONCRETE PRIMER

Stir the contents of the individual resin and hardener containers prior to blending. 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. During mixing, move the mixing blade in circular and up and down motions scraping all sides and the bottom of the mixing container.

- Combine the contents of the cans of FLEXKLAD E-CONCRETE PRIMER Resin and Hardener in a suitable mixing container. Mix thoroughly for two minutes as described above.
- Apply FLEXKLAD E-CONCRETE PRIMER with a brush or short nap 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 FLEXKLAD E-70. 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.

MIXING OF THE FLEXKLAD E-70

Stir the contents of the individual resin and hardener containers prior to blending. 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. During mixing, move the mixing blade in circular and up and down motions scraping all sides and the bottom of the mixing container.

1-3/4-Gallon Unit (17 lb. 7 oz. [7.9 kg.]):

- Combine the contents of the 1-gallon can (11 lb. [5.0 kg.]) of FLEXKLAD E-70 Resin with the 1-gallon can (6 lb. 7 oz. [2.9 kg.]) of FLEXKLAD E-70 Hardener in a clean, dry plastic or metal container.
- Mix thoroughly for two minutes as described above.

8-3/4-Gallon Unit (87 lb. 3 oz. [39.5 kg.]):

The following mixing instructions are for a batch size of 1-3/4 gallons (6.7 liters) or 17 lb. 7 oz. (7.9 kg.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

TYPICAL WORKING & DRYING TIMES OF THE FLEXKLAD E-70

Temperature	Working Time	Support Foot Traffic	Maximum Drying Time*
65°F (18°C)	60 min.	24 hours	60 hours
75°F (24°C)	40 min.	12 hours	48 hours
85°F (29°C)	25 min.	9 hours	32 hours

*Maximum Drying Time listed is for drying time between recoats

- Combine 127 fluid ounces (3.8 liters) of FLEXKLAD E-70 Resin and 101 fluid ounces (3.0 liters) of FLEXKLAD E-70 Hardener in a clean, dry plastic or metal container.
- Mix thoroughly for two minutes as described above.

APPLICATION OF THE FLEXKLAD E-70

FLEXKLAD E-CONCRETE PRIMER is not required if the FLEXKLAD E-70 is to be applied to properly prepared new and cured concrete substrates or grit blasted carbon steel substrates as described in the Surface Preparation Data Sheet, PS-30. FLEXKLAD E-CONCRETE PRIMER must be applied to all other conditions of concrete substrates after proper surface preparation.

Smooth Coating (no aggregate) over Concrete or Carbon Steel*:

- Determine substrate conditions. If recommended, apply FLEXKLAD E-CONCRETE PRIMER with a short nap roller as described in "Mixing and Application of the FLEXKLAD E-CONCRETE PRIMER". The primed surface should be tacky or dry before applying the FLEXKLAD E-70.
- Apply a 10 mil (0.25 mm.) coat of FLEXKLAD E-70 with a medium nap roller.
- After FLEXKLAD E-70 can support foot traffic, apply a second 10 mil (0.25 mm.) coat of FLEXKLAD E-70 with a flat rubber squeegee or short nap roller.

Slip Resistant Coating over Concrete or Carbon Steel*:

- Determine substrate conditions. If recommended, apply FLEXKLAD E-CONCRETE PRIMER with a short nap roller as described in "Mixing and Application of the FLEXKLAD E-CONCRETE PRIMER". The primed surface should be tacky or dry before applying the FLEXKLAD E-70.
- Apply a 10 mil (0.25 mm.) coat of FLEXKLAD E-70 with a medium nap roller.
- Within 10 minutes, broadcast ATLAS AGGREGATE into the wet FLEXKLAD E-70. The aggregate can be broadcast in a range from light to excess. The amount of aggregate and size of aggregate will determine the finished texture.
- After the FLEXKLAD E-70 can support foot traffic, vacuum or sweep to remove any unbonded aggregate.

- Apply a second 10 mil (0.25 mm.) coat of FLEXKLAD E-70 with a flat rubber squeegee or short nap roller.

***Note:** If the FLEXKLAD E-CONCRETE PRIMER or FLEXKLAD E-70 is allowed to dry for longer than the maximum drying time, the surface must be sanded and cleaned before proceeding to the next step.

Topcoat over an Epoxy Monolithic Floor Topping**:

- Apply a 5 mil (13 mm.) coat of FLEXKLAD E-70. Spread with a flat rubber squeegee or the edge of a steel trowel.
- Immediately back roll with a short nap roller.
- Fill any pinholes or other defects with a second application of FLEXKLAD E-70.

Slip Resistant Surface over an Epoxy Monolithic Floor Topping**:

- Apply a 10 mil (0.25 mm.) coat of FLEXKLAD E-70 with a medium nap roller.
- Within 10 minutes, broadcast ATLAS AGGREGATE into the wet FLEXKLAD E-70. The aggregate can be broadcast in a range from light to excess. The amount of aggregate and size of aggregate will determine the finished texture.
- After the FLEXKLAD E-70 can support foot traffic, vacuum or sweep to remove any unbonded aggregate.
- Apply a second 10 mil (0.25 mm.) coat of FLEXKLAD E-70 with a flat rubber squeegee or short nap roller.

****Note:** Apply a topcoat or slip resistant surface of FLEXKLAD E-70 within 48 hours of the application of the epoxy monolithic floor topping. If FLEXKLAD E-70 is to be applied over the epoxy monolithic floor topping that has been installed for more than 48 hours, the topping surface must first be sanded, cleaned and primed with FLEXKLAD E-CONCRETE PRIMER. Apply the primer as described in "Mixing and Application of the FLEXKLAD E-CONCRETE PRIMER". If the FLEXKLAD E-CONCRETE PRIMER or FLEXKLAD E-70 are allowed to dry for longer than the maximum drying time, the surface must be sanded and cleaned before proceeding to the next step.

OPTIONAL SURFACE FINISHES

SMOOTH: If a smoother, less textured surface is required, apply additional coats of FLEXKLAD E-70 with a short nap roller until desired finish is attained.

SCRATCH-RESISTANT: An optional coat of UREKLAD 210 can be applied for added scratch resistance. For packaging, mixing and application of UREKLAD 210, refer to Data Sheet 7-603PI.

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 coating system, as manufactured by Atlas Minerals & Chemicals, Inc. shall be FLEXKLAD E-70, a high solids epoxy coating with a minimum of 22% elongation as determined by ASTM D638.

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 FLEXKLAD E-70* (7-700PI)

Acetic Acid, to 5%	G
Acetic Acid, to 10%	F
Acetic Acid, 10% to 50%	C
Acetone	C
Alum or Aluminum Sulfate	E
Ammonium Chloride, Nitrate, Sulfate	E
Ammonium Hydroxide, 10% to 30%	G
Aniline	N
Animal Oils	C
Bakery Products	G
Barium Chloride, Sulfate	E
Beer	E
Benzene	C
Benzene Sulfonic Acid, 10%	G
Benzoic Acid	G
Black Liquor	G
Boric Acid	G
Bromine Water	C
Butter	C
Butyl Acetate	C
Butyl Alcohol	C
Butyric Acid	C
Calcium Chloride, Nitrate, Sulfate	E
Calcium Hydroxide	G
Calcium Hypochlorite	F
Carbonated Water	E
Casein	G
Cheese, all	G
Chlorine, Dry or Wet	F
Chlorine Water	G
Chloroacetic Acid, to 10%	C
Chloroform	N
Chromic Acid, 5% to 10%	C
Cider	F
Citric Acid, to 10%	G
Citrus Fruits	G
Coffee	E
Copper Chloride, Nitrate, Sulfate	G
Corn Oil	G
Corn Syrup	G
Egg Yolk	E
Ethyl Acetate	C
Ethyl Alcohol	G
Ethyl Ether	F
Ethylene Dichloride	N
Ethylene Glycol	G
Fatty Acids	C
Ferric Chloride, Nitrate, Sulfate	G

Fluosilicic Acid	C
Formaldehyde	G
Formic Acid, 10%	F
Fruit Extracts	F
Fruit Juices	F
Gasoline	G
Glucose	F
Glycerine	G
Grape Juice	F
Horse Radish	E
Hydrobromic Acid, to 20%	G
Hydrochloric Acid, to 20%	E
Hydrochloric Acid, 20% to 37%	G
Hydrofluoric Acid, to 20%	C
Hydrofluoric Acid, 20% to 70%	N
Hydrofluosilicic Acid	C
Hydrogen Peroxide	F
Hypochoorous Acid, to 5%	F
Ice Cream	E
Jams & Jellies	F
Jet Fuel	G
Kerosene	G
Ketchup	G
Lactic Acid, to 5%	G
Lactic Acid, 5% to 10%	F
Lactic Acid, above 10%	C
Lard	C
Linseed Oil	F
Lux Liquid	E
Magnesium Chloride, Nitrate, Sulfate	G
Magnesium Hydroxide	G
Maleic Acid, 25%	C
Malt	G
Malt Liquors	G
Margarine	C
Methyl Alcohol	G
Methyl Ethyl Ketone	N
Methylene Chloride	N
Milk	E
Mineral Oil	E
Mineral Spirits	G
Molasses	F
Muriatic Acid	G
Mustard	G
Nickel Chloride, Nitrate, Sulfate	G
Nitric Acid, to 5%	F
Nitric Acid, 5% to 10%	C
Oleic Acid	C

Olive Oil	C
Oxalic Acid	G
Pectin	G
Perchloroethylene	C
Petroleum	G
Phend, to 5%	C
Phosphoric Acid, to 25%	E
Phosphoric Acid, 25% to 50%	G
Phosphoric Acid, above 50%	C
Pickles	E
Picric Acid, to 5%	G
Potassium Bicarbonate, Carbonate	E
Potassium Chloride, Nitrate, Sulfate	E
Potassium Hydroxide, to 25%	G
Potassium Hydroxide, 25% to 50%	F
Salad Oils	C
Salicylic Acid	G
Shortening	C
Silver Nitrate	G
Skydrol	G
Smokehouse Residues	F
Sodium Bicarbonate, Carbonate	E
Sodium Bisulfate, Sulfate	E
Sodium Chloride, Nitrate, Phosphate	E
Sodium Hydroxide, 25% to 50%	F
Sodium Hypochlorite	F
Sodium Sulfide, Sulfite	G
Sodium Thiosulfate	G
Soft Drink Concentrates	C
Soft Drinks	G
Soups	E
Soya Oil	C
Stearic Acid	G
Sugar, Saturated Solution	F
Sulfuric Acid, 20% to 50%	C
Sulfuric Acid, above 50%	C
Sulfurous Acid	G
Syrup	C
Tannic Acid	G
Tartaric Acid	G
Tea	E
Toluene	F
Toluene Sulfonic Acid	F
Tomato Juice	G
Trichloroethylene	C
Trisodium Phosphate	G
Tung Oil	F
Turpentine	G

Urea E

Urine G

Vegetable Oil C

Vinegar G

Water, Distilled E

Water, Fresh E

Water and Sewage G

Wine G

Xylene F

Yeast E

Zinc Chloride, Nitrate, Sulfate E

(10-01)

*Acceptable for short term exposure per ASTM D1308, 72 hour exposure.

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.

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 FLEXKLAD E-70 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.