



Atlas Minerals & Chemicals, Inc.



DATA SHEET

4-1410PI (8-19)
Supersedes 4-1410PI (5-01²)

CHEMPRUF® 1410 Lining System

DESCRIPTION

CHEMPRUF 1410 Lining System is a glass flake reinforced lining system applied at a thickness of 60 mils (1.5 mm.) to 90 mils (2.3 mm.). Applied to concrete and steel substrates, the CHEMPRUF 1410 Lining System is composed of a **novolac vinyl ester** resin and inert fillers with glass flake reinforcement. The lining system can be used in immersion service to 180°F (82°C) and in intermittent service to 210°F (99°C).

The CHEMPRUF 1410 Lining System is designed for primary or secondary containment applications for tanks, trenches, containment dikes, absorbers, scrubbers and floors. The CHEMPRUF 1410 Lining System may be used as a lining or as a membrane in conjunction with chemically resistant brick sheathing. When used as a membrane, the lining can be used at higher process temperatures.

CHEMICAL RESISTANCE

The CHEMPRUF 1410 Lining System provides excellent resistance to bleaches, sodium hypochlorite, a wide range of organic solvents, organic acids and both oxidizing and non-oxidizing acids. CHEMPRUF 1410 Lining System is specifically resistant to glacial acetic acid, chromic acid to 20%, nitric acid to 40%, sulfuric acid to 75%, benzene, methyl ethyl ketone and styrene. Refer to the CHEMPRUF 1000 SERIES Chemical Resistance Chart, 4-1000, for specific information.

ChemPruf 1410 Lining System is a 30 mil (0.8 mm.) to 45 mil (1.1 mm.) trowel applied flake filled basecoat and topcoat of ChemPruf 1410 with a roll applied finisher of ChemPruf 410 or ChemPruf 141.

CHEMPRUF 1410 LINING SYSTEM Consists of: PRIMER

ChemPruf VE Primer, a two-component, brush or roller applied penetrating primer.

BASECOAT / TOPCOAT

ChemPruf 1410, a novolac vinyl ester resin, flake filled basecoat and topcoat each trowel applied at 30 mils (0.8 mm.) to 45 mils (1.1 mm.).

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Tensile Strength, 7 days @ 77°F (25°C)	ASTM D638	2,800 psi (19.3 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C579	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	9.11 x 10 ⁵ psi (6,300 MPa)
Heat Deflection Temperature	ASTM D648	239°F (115°C)
Temperature Resistance Immersion, Continual Immersion, Intermittent Dry Heat	—	180°F (82°C) 210°F (99°C) 330°F (166°C)
Hardness, Barcol	—	38
Cure Rate @ 77°F (25°C) Max. Chemical Resistance	—	7 days

SMOOTHING LIQUID

ChemPruf VE Smoothing Liquid, a one-component, roller applied material used to smooth the basecoat and topcoat surface.

FINISHER

ChemPruf 410, a two-component novolac vinyl ester resin, brush or roller applied sealer.

ChemPruf 141, a two-component, flake filled novolac vinyl ester resin, brush or roller applied sealer.

AVAILABLE COLORS

ChemPruf 1410 is available in white and gray.

ChemPruf 410 is available in white and gray.

ChemPruf 141 is available in white and gray.

ADDITIONAL INFORMATION

For specific information pertaining to Surface Preparation, Packaging or Mixing and Application, refer to the following ATLAS literature:

- Surface Preparation Data Sheet (PS-30)
- ChemPruf 1410 Lining System Installation Instructions (I-4-1410)
- ChemPruf 141 Data Sheet (4-141PI)
- Lining System Termination Drawing (4-3000DG)
- Termination at Drain Drawing (4-3001DG)
- Control Joint & Structural Crack Drawing (4-3003DG)
- Horizontal / Vertical Transition Drawing (4-3004DG)
- Pipe Outlets Drawing (4-3005DG)

NOTE: ATLAS makes it a practice to continuously update and enhance our CCM (Corrosion Resistant Construction Materials) products. For the most recent version of any Data Sheet, please visit our Web site at www.atlasmin.com.

SURFACE PREPARATION

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: The prepared concrete substrate shall have a minimum tensile strength of 250 psi. (1.72 MPa). Concrete surface must be sufficiently cured and comply with moisture testing as prescribed by ACI Test Method 515 R-16 "Dryness of Surface".

Concrete surfaces should be grit blasted to a finish similar to the profile of 100 to 120 grit sandpaper. Cracks in the concrete substrate 1/16" (1.6 mm.) wide or greater must be opened to a minimum 1/4" (6.4 cm.) cleaned, primed and filled with ChemPruf 1410.

Carbon Steel: Metal surfaces should be grit blasted to a SSPC-SP5 or NACE #1 white metal blast cleaned surface finish. Profile height must be 3 (0.076 mm.) to 4 mils (0.102 mm.).

TEMPERATURE DURING APPLICATION

Store all materials referred to in this Data Sheet at 70°F (21°C) to 80°F (27°C) for 24 hours prior to use. Minimum temperature for installation is 65°F (18°C). Do not apply when the relative humidity is greater than 75% or the substrate temperature is less than 5°F (3°C) above the dew point.

APPLICATION

1. Apply ChemPruf VE Primer with a brush or roller.
2. Trowel apply a 30 mil (0.8 mm.) to 45 mil (1.1 mm.) WFT basecoat of ChemPruf 1410. Roll the surface with a short nap paint roller wetted with ChemPruf VE Smoothing Liquid to orient the flake filler, compact the basecoat and to remove trowel marks. Allow to harden.
3. Trowel apply a 30 mil (0.8 mm.) to 45 mil (1.1 mm.) WFT topcoat of ChemPruf 1410. Roll the surface with a short nap paint roller wetted with ChemPruf VE Smoothing Liquid to orient the flake filler, compact the topcoat and to remove trowel marks. Allow to harden.
4. Apply ChemPruf 410 or ChemPruf 141 with a short nap roller. Depending on service conditions, two coats may be required.

Protect uncured primer, basecoat, topcoat and finisher coat(s) from moisture contamination until minimum cure time is attained.

INSPECTION

1. Inspect lining for imperfections after basecoat has hardened. Repair defects and imperfections prior to application of the topcoat.
2. When specified or required, spark test for pinholes using 100 volts per mil (0.025 mm.) of lining thickness. Spark testing of ChemPruf 1410 Lining System applied to concrete substrates requires ChemPruf VE Primer with ATLAS® Carbon Powder.

MEMBRANE

When the ChemPruf 1410 Lining System is to be used as a membrane with chemical resistant masonry sheathing, a release agent, such as silicone or paste wax, must be applied to the surface of the lining system. Apply the release agent after the ChemPruf 1410 Lining System has attained the minimum drying time. The use of a release agent allows the masonry sheathing to move independent of the lining system.

PRODUCT SPECIFICATION

The lining system shall be ChemPruf 1410 Lining System as manufactured by Atlas Minerals & Chemicals, Inc.

ChemPruf 1410 Lining System, a novolac vinyl ester resin flake filled basecoat and topcoat, each trowel applied at a nominal thickness of 30 mils (0.8 mm.) to 45 mils (1.1 mm.). Service conditions as determined by the manufacturer may require the application of ChemPruf 410 or ChemPruf 140.

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 Safety Data Sheets and government regulations.

STORAGE AND SHELF LIFE

Store all materials in a cool, dry environment and out of direct sunlight. Store all CHEMPRUF Resins and Hardeners and CHEMPRUF VE SMOOTHING LIQUID at a temperature between 40°F (4°C) and 60°F (16°C) and protect from freezing. In unopened original containers, CHEMPRUF 1410, CHEMPRUF 410 and CHEMPRUF 141 Resin and Hardener have a shelf life of approximately three months. CHEMPRUF VE PRIMER Resin and Hardener and CHEMPRUF VE SMOOTHING LIQUID have a shelf life of approximately five months. CHEMPRUF FINISHER ADDITIVE has a shelf life of approximately nine months.

MAINTENANCE

Should the liner be damaged in any way, it can be repaired by thoroughly cleaning and reapplying the ChemPruf 1410 Lining System.

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 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.**



Atlas Minerals & Chemicals, Inc.



Installation Instructions

I-4-1410 (8-19)
Supersedes I-4-1410 (10-02³)

CHEMPRUF[®] 1410 Lining System

DESCRIPTION

CHEMPRUF 1410 Lining System consists of a 30 mil (0.8 mm.) to 45 mil (1.1 mm.) trowel applied basecoat and topcoat of CHEMPRUF 1410 with a roll applied finishing coat of CHEMPRUF 410 or CHEMPRUF 141, Installation Instructions (I-4-141).

ESTIMATED COVERAGE

CHEMPRUF VE PRIMER

1-Gallon Unit 200 ft² (18.6 m²)
5-Gallon Unit..... 1,100 ft² (102 m²)

CHEMPRUF VE CONDUCTIVE PRIMER

1-Gallon Unit 120 ft² (11.1 m²)
5-Gallon Unit..... 660 ft² (61.3 m²)
ATLAS[®] Carbon Powder* 2,300 ft² (213.7 m²)
*Per pail for Conductive Primer

CHEMPRUF 1410 (Basecoat / Topcoat)

5-Gallon Unit
Total System @ 60 mils (1.5 mm.) ... 118 ft² (11.0 m²)
Basecoat @ 30 mils (0.8 mm.) 236 ft² (21.9 m²)
Topcoat @ 30 mils (0.8 mm.) 236 ft² (21.9 m²)

Total System @ 90 mils (2.3 mm.) 78 ft² (7.3 m²)
Basecoat @ 45 mils (1.1 mm.) 157 ft² (14.6 m²)
Topcoat @ 45 mils (1.1 mm.) 157 ft² (14.6 m²)

CHEMPRUF VE SMOOTHING LIQUID

1-Gallon 400 ft² (37.2 m²)
5-Gallon 2,000 ft² (185 m²)

CHEMPRUF 410

1-Gal. Unit @ 5 mils (0.13 mm.) 300 ft² (27.9 m²)
5-Gal. Unit @ 5 mils (0.13 mm.) 1,628 ft² (151 m²)

CHEMPRUF FINISHER ADDITIVE*

One - 4 oz. (113 g.) can per 1-gallon unit CHEMPRUF 410
One - 20 oz. (567 g.) can per 5-gallon unit CHEMPRUF 410 or 5-gallon unit CHEMPRUF 1410
*Combined with the final coat of CHEMPRUF 410 or final coat of CHEMPRUF 1410 if CHEMPRUF 410 is not specified.

Note: All references to application thickness and coverage per unit in this Installation Instructions are WFT (wet film thickness). Material estimating quantities may vary depending on project conditions and application techniques. Material quantities are theoretical and do not include a safety factor.

PACKAGING

CHEMPRUF VE PRIMER

1-Gal. Unit (8 lb. [3.6 kg.]) Consisting of:

One - 1-gal. can CHEMPRUF VE PRIMER Resin (7 lb. 13 oz. [3.5 kg.])
One - bottle CHEMPRUF VE PRIMER Hardener (2.5 oz. [71 g.])

5-Gal. Unit (43 lb. 14 oz. [19.9 kg.]) Consisting of:

One - 5-gal. pail CHEMPRUF VE PRIMER Resin (43 lb. [19.5 kg.])
One - bottle CHEMPRUF VE PRIMER Hardener (14 oz. [397 g.])

ATLAS CARBON POWDER (for Conductive Primer)

5-gal. pail (38 lb. [17.2 kg.])

CHEMPRUF 1410 (Basecoat / Topcoat)

5-Gal. Unit (50 lb. 14 oz. [23.1 kg.]) Consisting of:

One - 5-gal. pail CHEMPRUF 1410 Resin (50 lb. [22.7 kg.])
One - bottle CHEMPRUF 1410 Hardener (14 oz. [397 g.])

CHEMPRUF VE SMOOTHING LIQUID

1-gal. can (7 lb. 4 oz. [3.3 kg.])
5-gal. pail (36 lb. 4 oz. [16.4 kg.])

CHEMPRUF 410 (Finisher)

1-Gallon Unit (8 lb. 10 oz. [3.9 kg.]) Consisting of:

One - 1-gal. can CHEMPRUF 410 Resin (8 lb. 8 oz. [3.9 kg.])
One - bottle CHEMPRUF 410 Hardener (2 oz. [57 g.])

5-Gal. Unit (46 lb. 11 oz. [21.2 kg.]) Consisting of:

One - 5-gal. pail CHEMPRUF 410 Resin (46 lb. [20.9 kg.])
One - bottle CHEMPRUF 410 Hardener (11 oz. [312 g.]) ea.

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CHEMPRUF FINISHER ADDITIVE

4 oz. [113 g.] can

1-qt. can (1 lb. 4 oz. [567 g.]

AVAILABLE COLORS**CHEMPRUF 1410** is available in white and gray.**CHEMPRUF 410** is available in white and gray.**SURFACE PREPARATION**

CHEMPRUF 1410 Lining System can be applied to concrete and steel 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 is recommended. Where impractical, chemical preparation by acid washing is acceptable. A finish similar to the profile of 100 to 120 grit sandpaper is suggested.

The prepared concrete substrate shall have a minimum tensile strength of 250 psi. (1.72 MPa).

Concrete surface must be sufficiently cured and comply with moisture testing as prescribed by ACI Test Method 515 R-16 "Dryness of Surface".

Carbon Steel: Metal surfaces should be grit blasted to a SSPC-SP5 or NACE #1 white metal blast cleaned surface finish. Profile height must be 3 (0.076 mm.) to 4 mils (0.102 mm.).

The primer will hold the finish on carbon steel for approximately two weeks at relative humidity of 75%. Should flash rusting occur at any time before CHEMPRUF 1410 basecoat is applied, the surface must be grit blasted again and reprimed.

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

TEMPERATURE / HUMIDITY DURING APPLICATION

Store all materials referred to in this Installation Instructions 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 CHEMPRUF 1410 Lining System components 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.

Do not apply when the relative humidity is greater than 75% or the substrate temperature is less than 5°F (3°C) above the dew point.

CONSTRUCTION DETAILS

For additional information on Construction Details, refer to the following ATLAS literature:

- Surface Preparation Data Sheet (PS-30)
- Horizontal / Vertical Transition Drawing (4-3004DG)
- Structural Crack Drawing (4-3006DG)

- Control Joint Drawing (4-3003DG)
- Lining System Termination Drawing (4-3000DG)
- Termination at Drain Drawing (4-3001DG)
- Pipe Outlets Drawing (4-3005DG)

Protect uncured primer, basecoat, topcoat and finisher coat(s) from moisture contamination until minimum cure time is attained.

When applying CHEMPRUF 1410 Lining System directly to a latex modified concrete substrate, apply a barrier coat of CHEMPRUF TIE-COAT (4-90PI) before applying CHEMPRUF VE PRIMER.

Do not apply the CHEMPRUF 1410 Lining System to substrates that flex.

INSTALLATION EQUIPMENT AND SUPPLIES*

- KOL type mixer & Jiffy type mixer
- 5-gallon (18.9 liter) plastic or metal containers
- Cement finishing, margin & pointing trowels
- Short (3/16" to 1/4") & medium (3/8") nap paint rollers
- Paint brushes
- Rubber & cotton gloves
- Organic respirator, Safety goggles
- Electric grinder
- Scissors, measuring tape, chalk line, felt tip marker

*The safety equipment listed above is the minimum required to install the CHEMPRUF 1410 Lining System. The installer must provide any equipment necessary to comply with existing federal, state, local and customer safety regulations.

APPLICATION OF THE CHEMPRUF 1410 LINING SYSTEM

1. **Primer:** All substrates must be primed with CHEMPRUF VE PRIMER. Apply CHEMPRUF VE PRIMER with a brush or medium nap roller. Do not allow puddling. Work CHEMPRUF VE PRIMER into the pores of concrete substrates.

The primed surface should be tacky or dry before applying CHEMPRUF 1410 basecoat. 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.

Conductive Primer: When the CHEMPRUF 1410 Lining System is applied to concrete substrates, spark testing of the lining may be specified or required. Apply CHEMPRUF VE PRIMER with ATLAS CARBON POWDER. Stir the mixed components frequently during the application to avoid settlement of the carbon powder. Apply as described above.

Temperature	CHEMPRUF VE PRIMER		
	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

2. **Basecoat:** Trowel apply a basecoat of CHEMPRUF 1410 at a thickness of 30 mils (0.8 mm.) to 45 mils (1.1 mm.) with a plaster's or concrete finishing trowel. Immediately roll the surface of the CHEMPRUF 1410 basecoat with a short nap roller lightly wetted with CHEMPRUF VE SMOOTHING LIQUID. Before rolling, shake the wet roller to remove excess CHEMPRUF VE SMOOTHING LIQUID. Use only enough smoothing liquid to prevent picking up of the basecoat. Excess smoothing liquid may cause the lining to remain soft. Rolling orients the flake filler, compacts the basecoat and removes trowel marks.

Allow the basecoat to harden sufficiently so that the surface will not be disturbed before continuing with the topcoat application.

If the basecoat is allowed to dry for longer than the maximum drying time, the surface must be sanded, cleaned and reprimed before applying the CHEMPRUF 1410 topcoat.

3. **Inspection:** Inspect lining for imperfections after basecoat has hardened. Repair defects and imperfections prior to application of the topcoat. When specified or required, spark test for pinholes using 100 volts per mil (0.025 mm.) of lining thickness. Spark testing of CHEMPRUF 1410 Lining System applied to concrete substrates requires CHEMPRUF VE PRIMER with ATLAS CARBON POWDER.

4. **Topcoat:** Trowel apply a topcoat of CHEMPRUF 1410 at a thickness of 30 mils (0.8 mm.) to 45 mils (1.1 mm.) with a plaster's or concrete finishing trowel. Immediately roll the surface of the CHEMPRUF 1410 topcoat with a short nap roller lightly wetted with CHEMPRUF VE SMOOTHING LIQUID as described in Step (2.). Allow the CHEMPRUF 1410 topcoat to harden sufficiently so that the surface will not be disturbed before continuing with the finisher coat.

Note: Refer to the "Special Mixing Instructions" for the CHEMPRUF 1410 topcoat if the finisher is not specified.

If the CHEMPRUF 1410 topcoat is allowed to dry for longer than the maximum drying time, the surface must be sanded, cleaned and reprimed before applying the finisher.

CHEMPRUF 1410 (Basecoat / Topcoat)

Temperature	Working Time	Minimum Drying Time	Maximum Drying Time
65°F (18°C)	30 min.	8 hours	24 hours
75°F (24°C)	20 min.	5 hours	24 hours
85°F (29°C)	15 min.	4 hours	16 hours

5. **Finisher:** If specified, apply a 5 mil (0.13 mm.) coat of CHEMPRUF 410 with a short nap roller. If CHEMPRUF 141 is specified, refer to Installation Instructions, I-4-141. Depending on service conditions, two coats may be required.

If the CHEMPRUF 410 is allowed to dry for longer than the maximum drying time, the surface must be sanded, cleaned and reprimed before applying a second finisher coat.

CHEMPRUF 410

Temperature	Working Time	Minimum Drying Time	Maximum Drying Time
65°F (18°C)	35 min.	12 hours	24 hours
75°F (24°C)	30 min.	8 hours	24 hours
85°F (29°C)	25 min.	7 hours	16 hours

MEMBRANE

When applying a masonry sheathing over the CHEMPRUF 1410 Lining System, a release agent must be applied to the surface of the lining system. The use of a release agent allows the masonry sheathing to move independent of the lining system. Silicone or paste wax can be applied after the maximum drying time.

MIXING OF THE CHEMPRUF VE 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.

1-Gallon Unit of CHEMPRUF VE PRIMER

The following mixing instructions are for a batch size of 0.9 gallons (3.5 liters). Estimated coverage of the batch size is 200 ft² (18.6 m²). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

- Combine the contents of the 7 lb. 13 oz. (3.5 kg.) can of CHEMPRUF VE PRIMER Resin with the contents of the 2.5 oz. (71 g.) bottle of CHEMPRUF VE PRIMER Hardener.
- Mix thoroughly for two minutes as described above.

5-Gallon Unit of CHEMPRUF VE PRIMER

The following mixing instructions are for a batch size of 0.9 gallons (3.5 liters) or 8 lb. (3.6 kg.). Estimated coverage of the batch size is 200 ft² (18.6 m²). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

- Combine 116 fluid ounces (3.45 liters) of CHEMPRUF VE PRIMER Resin with 2.4 fluid ounces (71 ml.) CHEMPRUF VE PRIMER Hardener* in a suitable mixing container.
*2.4 fluid ounces equals 4.7 tablespoons.
- Mix thoroughly for two minutes as described above.

MIX RATIO OF THE CHEMPRUF VE PRIMER

	by Weight	by Volume
CHEMPRUF VE PRIMER Resin	100	100
CHEMPRUF VE PRIMER Hardener	2	2.1

Conductive Primer

- Mix the CHEMPRUF VE PRIMER Resin and Hardener as described above.
- Add 1 lb. 15 oz. (879 g.) or approximately 36 fluid ounces (1.1 liters) of ATLAS CARBON POWDER. Mix thoroughly for approximately two minutes. During application, stir the mixed components frequently to avoid settlement of the carbon powder.

MIX RATIO OF THE CONDUCTIVE PRIMER

	by Weight	by Volume
CHEMPRUF VE PRIMER Resin	100	100
CHEMPRUF VE PRIMER Hardener	2	2.1
ATLAS CARBON POWDER	25	31

MIXING OF THE**CHEMPRUF 1410 (Basecoat / Topcoat)**

Note: Refer to the “Special Mixing Instructions” for the CHEMPRUF 1410 topcoat if a finishing coat of CHEMPRUF 410 is not specified.

Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be with a KOL type mixer with a 5-gallon capacity. Mixing speed should be between 60 and 75 RPM.

5-Gallon Unit of CHEMPRUF 1410

The following mixing instructions are for a batch size of 25 lb. 7 oz. (11.5 kg.) or 0.30 ft³ (8.4 liters). Estimated coverage of the batch size is 118 ft² (11.0 m²) @ 30 mils (0.8 mm.) or 78 ft² (7.3 m²) @ 45 mils (1.1 mm.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

- Evenly divide the contents of the 50 lb. (22.7 kg.) pail of CHEMPRUF 1410 Resin into two equal parts by volume and place in the 5-gallon capacity mixer. The mixing container should contain 25 lb. (11.3 kg.) or approximately 2 gallons and 32 fluid ounces (8.5 liters) of CHEMPRUF 1410 Resin.
- Add 6.7 fluid ounces (199 ml.) of CHEMPRUF 1410 Hardener* and mix thoroughly for two minutes as described above.
*6.7 fluid ounces equals 13.3 tablespoons.

MIX RATIO OF THE CHEMPRUF 1410 (Basecoat / Topcoat)

	by Weight	by Volume
CHEMPRUF 1410 Resin	100	100
CHEMPRUF 1410 Hardener	1.75	2.3

MIXING OF THE CHEMPRUF 410 (Finisher)

Add CHEMPRUF FINISHER ADDITIVE to the final coat of CHEMPRUF 410. If a single coat is specified, apply CHEMPRUF 410 mixed with CHEMPRUF FINISHER ADDITIVE.

Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components may 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-Gallon Unit of CHEMPRUF 410

The following mixing instructions are for a batch size of 0.9 gallons (3.6 liters). Estimated coverage of the batch size is 300 ft² (27.9 m²) @ 5 mils (0.13 mm.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

Coat(s) without CHEMPRUF FINISHER ADDITIVE

- Combine the contents of the 8 lb. 8 oz. (3.9 kg.) can of CHEMPRUF 410 Resin with one 2 oz. (57 g.) bottle of CHEMPRUF 410 Hardener in a suitable mixing container.
- Mix thoroughly for two minutes as described above.

Final Coat with CHEMPRUF FINISHER ADDITIVE

- Combine the 8 lb. 8 oz. (3.9 kg.) can of CHEMPRUF 410 Resin with one 4 oz. (113 g.) can of CHEMPRUF FINISHER ADDITIVE in a suitable mixing container and mix thoroughly for two minutes.
- Add the 2 oz. (57 g.) bottle of CHEMPRUF 410 Hardener and mix thoroughly for two minutes as described above.

5-Gallon Unit of CHEMPRUF 410

The following mixing instructions are for a batch size of 1.0 gallons (3.8 liters) or 9 lb. 5 oz. (4.2 kg.). Estimated coverage of the batch size is 325 ft² (30.2 m²) @ 5 mils (0.13 mm.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

Coat(s) without CHEMPRUF FINISHER ADDITIVE

- Combine 128 fluid ounces (3.79 liters) of CHEMPRUF 410 Resin with 2.1 fluid ounces (63 ml.) CHEMPRUF 410 Hardener.
*2.1 fluid ounces equals 4.2 tablespoons.
- Mix thoroughly for two minutes as described above.

Final Coat with CHEMPRUF FINISHER ADDITIVE

- Combine 128 fluid ounces (3.79 liters) of CHEMPRUF 410 Resin with 4.3 fluid ounces (127 ml.) of CHEMPRUF FINISHER ADDITIVE* and mix thoroughly for two minutes.
*4.3 fluid ounces equals 8.5 tablespoons.
- Add 2.1 fluid ounces (63 ml.) CHEMPRUF 410 Hardener* and mix thoroughly for two minutes as described above.
*2.1 fluid ounces equals 4.2 tablespoons.

MIX RATIO OF THE CHEMPRUF 410

	by Weight	by Volume
CHEMPRUF 410 Resin	100	100
CHEMPRUF 410 Hardener	1.5	1.7
CHEMPRUF FINISHER ADDITIVE	2.7	3.4

SPECIAL MIXING INSTRUCTIONS**CHEMPRUF 1410 (Topcoat)****If a finishing coat of CHEMPRUF 410 is not specified**

Stir the contents of the individual resin and hardener containers prior to blending. Mixing of the components should be with a KOL type mixer with a 5-gallon capacity. Mixing speed should be between 60 and 75 RPM.

1-Gallon Unit of CHEMPRUF 1410

The following mixing instructions are for a batch size of 9 lb. 9 oz. (4.3 kg.) or 0.11 ft³ (3.1 liters). Estimated coverage of the batch size is 44 ft² (4.1 m²) @ 30 mils (0.8 mm.) or 29 ft² (2.7 m²) @ 45 mils (1.1 mm.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

- Combine the 9 lb. 6 oz. (4.3 kg.) can of CHEMPRUF 1410 Resin with one 4 oz. (113 g.) can of CHEMPRUF FINISHER ADDITIVE in a suitable mixing container and mix thoroughly for two minutes.
- Add the 2.65 oz. (75 g.) bottle of CHEMPRUF 1410 Hardener and mix thoroughly for two minutes as described.

5-Gallon Unit of ChemPuf 1410

The following mixing instructions are for a batch size of 26 lb. 1 oz. (11.8 kg.) or 0.30 ft³ (8.4 liters). Estimated coverage of the batch size is 118 ft² (11.0 m²) @ 30 mils (0.8 mm.) or 78 ft² (7.3 m²) @ 45 mils (1.1 mm.). Proportionally increase or decrease component quantities to attain larger or smaller batch sizes.

- Evenly divide the contents of the 50 lb. (22.7 kg.) pail of CHEMPRUF 1410 Resin into two equal parts by volume and place in the 5-gallon capacity mixer. The mixing container should contain 25 lb. (11.3 kg.) or approximately 2-gallons and 32 fluid ounces (8.8 liters) of CHEMPRUF 1410 Resin.
- Add 10.8 fluid ounces (318 ml.) CHEMPRUF FINISHER ADDITIVE* and mix thoroughly for two minutes.
- Add 6.7 fluid ounces (199 ml.) CHEMPRUF 1410 Hardener* and mix thoroughly for two minutes as described above.

*10.8 fluid ounces equals 21.2 tablespoons.

*6.7 fluid ounces equals 13.3 tablespoons.

MIX RATIO OF THE CHEMPRUF 1410 (Topcoat)

(If finisher is not specified)

	by Weight	by Volume
CHEMPRUF 1410 Resin	100	100
CHEMPRUF 1410 Hardener	1.75	2.3
CHEMPRUF FINISHER ADDITIVE	2.5	3.7

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 Safety Data Sheets and government regulations.

STORAGE AND SHELF LIFE

Store all materials in a cool, dry environment and out of direct sunlight. Store all CHEMPRUF Resins and Hardeners and CHEMPRUF VE SMOOTHING LIQUID at a temperature between 40°F (4°C) and 60°F (16°C) and protect from freezing. In unopened original containers, CHEMPRUF 1410 Resin and Hardener and CHEMPRUF 410 Resin and Hardener have a shelf life of approximately three months. CHEMPRUF VE PRIMER Resin and Hardener and CHEMPRUF VE SMOOTHING LIQUID have a shelf life of approximately five months. CHEMPRUF FINISHER ADDITIVE has a shelf life of approximately nine months and ATLAS CARBON POWDER can be stored indefinitely.

MAINTENANCE

Should the lining be damaged in any way, it can be repaired by thoroughly cleaning and reapplying the CHEMPRUF 1410 Lining System. Mix and apply in accordance with the instructions provided in this Installation Instructions sheet.

- Determine all areas that have been damaged.
- Grind or sand to expose the substrate 1" (25.4 mm.) to 2" (50.8 mm.) beyond the damaged area.
- Grind or sand the surface of the CHEMPRUF 1410 Lining System. Taper the CHEMPRUF Lining to expose 2" (50.8 mm.) to 4" (101.6 mm.) of each layer of the CHEMPRUF 1410 Lining System.
- Clean and remove all debris from Step (2.) and Step (3.).
- Apply CHEMPRUF TIE-COAT, Data Sheet 4-90PI, to the exposed tapered edges of the CHEMPRUF 1410 Lining System. Allow the CHEMPRUF TIE-COAT to dry.
- Apply CHEMPRUF VE PRIMER to the substrate and exposed tapered edges of the CHEMPRUF 1410 Lining System.
- Apply the CHEMPRUF 1410 basecoat. Allow to harden.
- Apply the CHEMPRUF 1410 topcoat.
- Apply CHEMPRUF 410 or CHEMPRUF 141 if specified.

REZKLAD® VE PRIMER and ATLASTACRETE® VE PRIMER are substitutes for CHEMPRUF VE PRIMER.

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 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.**