



## CHEMPRUF 2411 SERIES

### ChemPruf 2411 Lining System ChemPruf 2411 AO Lining System

#### DESCRIPTION

CHEMPRUF 2411 SERIES of linings are highly chemical resistant fabric reinforced lining systems. Applied to concrete and steel substrates, the CHEMPRUF 2411 SERIES Lining Systems are composed of a **novolac vinyl ester** resin, an inert filled basecoat, fabric reinforcement and an inert filled topcoat. The 1/8" (3.2 mm.) linings can be used in immersion service to 180°F (82°C) and in intermittent service to 210°F (99°C).

The CHEMPRUF 2411 SERIES is designed for primary or secondary containment applications for tanks, trenches, containment dikes, absorbers, scrubbers and floors. The CHEMPRUF 2411 SERIES 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 2411 Lining System provides excellent resistance to bleaches, sodium hypochlorite, a wide range of organic solvents, organic acids and oxidizing and non-oxidizing acids. CHEMPRUF 2411 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 2000 SERIES Chemical Resistance Chart, 4-2000, for specific information.

**ChemPruf 2411** is a silica filled basecoat and topcoat with an intermediate layer of fiberglass reinforcement system.

**ChemPruf 2411 AO** is a silica filled basecoat, an intermediate layer of fiberglass reinforcement and an aluminum oxide filled topcoat system. This abrasion resistant system is preferred for service conditions with abrasive slurries, high velocity air containing particulate matter or environments exposed to flourides, flouride salts and sodium hydroxide.

#### CHEMPRUF 2411 SERIES Consists of: PRIMER

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

#### PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE 2411
Density, Composite	ASTM C905	117 lb./cu. ft. (1.87 g./cc.)
Tensile Strength, Composite 7 days @ 77°F (25°C)	ASTM D638	3,000 psi. (20.7 MPa)
Compressive Strength, Mortar 7 days @ 77°F (25°C)	ASTM C579	10,000 psi. (68.9 MPa)
Flexural Strength, Composite 7 days @ 77°F (25°C)	ASTM C580	5,000 psi. (34.5 MPa)
Coefficient of Thermal Expansion, Composite in./in./°F (cm./cm./°C)	ASTM C531	1.5 x 10 <sup>-5</sup> (2.7 x 10 <sup>-5</sup> )
Temp. Resistance, Composite Immersion Continual, °F (°C) Immersion Intermittent, °F (°C) Dry Heat, °F (°C)		180°F (82°C) 210°F (99°C) 330°F (166°C)
Hardness, Barcol		45
Cure Rate @ 77°F (25°C), Max. Chemical Resistance		7 days

#### BASECOAT / TOPCOAT

**ChemPruf 2410**, a novolac vinyl ester resin and silica filler, trowel applied at a nominal thickness of 1/16" (1.6 mm.).

**ChemPruf 2410 AO**, a novolac vinyl ester resin and aluminum oxide filler, trowel applied at a nominal thickness of 1/16" (1.6 mm.).

#### REINFORCING FABRIC

**ChemPruf 10 oz. Reinforcing Fabric**, 10 oz./sq. yd. (339 g./m<sup>2</sup>) woven fiberglass reinforcing fabric

#### SATURANT

**ChemPruf 2410 Saturant**, a novolac vinyl ester resin, roller applied to the reinforcing fabric.

#### SMOOTHING LIQUID

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

#### FINISHER\* (OPTIONAL)

**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.

\*Depending on service conditions, ATLAS may recommend use of an optional finisher.

## AVAILABLE COLORS

**ChemPruf 2410** is available in natural and gray.

**ChemPruf 2410 AO** is available in brown.

**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 2411 Lining System Installation Instructions (I-4-2411)
- ChemPruf 2411 AO Lining System Installation Instructions (I-4-2411AO)
- 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)

## 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 2410.

**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 1/16" (1.6 mm.) WFT basecoat. Imbed the ChemPruf Fabric and roll into the wet basecoat. Apply ChemPruf 2410 saturant with a medium nap roller. Allow saturant coat to harden.

3. Trowel apply a 1/16" (1.6 mm.) WFT topcoat. Smooth with a short nap roller lightly wetted with ChemPruf VE Smoothing Liquid. Allow to harden.
4. If ATLAS recommends use of an optional finisher, apply ChemPruf 410 or ChemPruf 141 with a short nap roller. Depending on service conditions, two coats may be required.

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

## INSPECTION

1. Inspect lining for imperfections after basecoat, fabric and saturant have 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 2411 and ChemPruf 2411 AO Lining Systems applied to concrete substrates requires ChemPruf VE Primer with ATLAS® Carbon Powder.

## MEMBRANE

When the ChemPruf 2411 Lining Systems are 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 2411 Lining Systems have 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 2411 Series as manufactured by Atlas Minerals & Chemicals, Inc.

**ChemPruf 2411 Lining System**, a novolac vinyl ester resin lining system. The lining system shall consist of a silica filled basecoat and topcoat, each trowel applied at a nominal thickness of 1/16" (1.6 mm.), with an intermediate layer of 10 oz./yd<sup>2</sup> (339 g./m<sup>2</sup>) fiberglass fabric reinforcement. Service conditions as determined by the manufacturer may require the application of the optional ChemPruf 410 or ChemPruf 141.

**ChemPruf 2411 AO Lining System**, a novolac vinyl ester resin lining system. The lining system shall consist of a silica filled basecoat and aluminum oxide filled topcoat each trowel applied at a nominal thickness of 1/16" (1.6 mm.), with an intermediate layer of 10 oz./yd<sup>2</sup> (339 g./m<sup>2</sup>) fiberglass fabric reinforcement. Service conditions as determined by the manufacturer may require the application of the optional ChemPruf 410 or ChemPruf 141.

**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 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 VE Primer Resin and Hardener, ChemPruf 2400 Resin and Hardener, ChemPruf 400 Resin and Hardener and ChemPruf VE Smoothing Liquid have a shelf life of approximately three months. ChemPruf 2000 S Powder, ChemPruf 2000 AO Powder, ATLAS Carbon Powder and ChemPruf 10 oz. Reinforcing Fabric can be stored indefinitely.

**MAINTENANCE**

Should the liner be damaged in any way, it can be repaired by thoroughly cleaning and reapplying the ChemPruf 2411 Series 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 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.**