



Atlas Minerals & Chemicals, Inc.



DATA SHEET

5-55PI (2-26)
Supersedes 5-55PI (8-19)

RED FURNANE® SETTING BED / SETTING BED VERTICAL GRADE

DESCRIPTION

RED FURNANE SETTING BED is a corrosion resistant, bond coat for wall or floor tile, pavers and brick.

TYPICAL USES

RED FURNANE SETTING BED is used by tilesetters and bricklayers to bond masonry tile or brick to a substrate. RED FURNANE SETTING BED is used as the bond coat over Portland cement concrete, sand cement and latex or epoxy modified leveling beds with ceramic tile, quarry tile, brick pavers and granite. It is compatible with most resin or cement based grouts or mortars.

RED FURNANE SETTING BED VERTICAL GRADE is a modified formulation to facilitate the application and installation of ceramic or quarry tile to vertical surfaces.

PACKAGING

RED FURNANE SETTING BED

32 lb. 10 oz. (14.8 kg.) Unit Consisting of:

- One - 1-gal. can of Resin (7 lb. 9 oz. [3.4 kg.])
- One - 1-pt. can of Hardener (14 oz. [397 g.])
- One - bag of Powder (24 lb. 3 oz. [11.0 kg.])

171 lb. 3 oz. (77.7 kg.) Unit Consisting of:

- One - 5-gal. pail of Resin (40 lb. 11 oz. [18.5 kg.])
- One - 1-gal. can of Hardener (4 lb. 8 oz. [2.0 kg.])
- Three - bags of Powder (42 lb. [19.1 kg.]) ea.

17,255 lb. (7,826.8 kg.) Unit Consisting of:

- Nine - 55-gal. drums of Resin (445 lb. [201.8 kg.])
- One - 55-gal. drum of Hardener (440 lb. [199.6 kg.])
- 305 - bags of Powder (42 lb. [19.1 kg.]) ea.

RED FURNANE SETTING BED VERTICAL GRADE

37 lb. [16.8 kg.] Unit Consisting of:

- One - 1-gal. can of Resin (7 lb. 9 oz. [3.4 kg.])
- One - 1-pint can of Hardener (14 oz. [397 g.])
- One - bag of Vertical Grade Powder
(28 lb. 9 oz. [13.0 kg.])

PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	TYPICAL VALUE
Density	ASTM C905	112 lb./cu. ft. (1.79 g./cc.)
Bond Strength, 7 days @ 77°F (25°C)		Concrete Fails
Tensile Strength, 7 days @ 77°F (25°C)	ASTM C307	2,000 psi. (13.7 MPa)
Compressive Strength, 7 days @ 77°F (25°C)	ASTM C579	10,000 psi. (68.9 MPa)
Flexural Strength, 7 days @ 77°F (25°C)	ASTM C580	4,000 psi (27.6 MPa)
Coefficient of Thermal Exp., in./in./°F (cm./cm./°C)	ASTM C531	3.0 x 10 ⁻⁵ (5.4 x 10 ⁻⁵)
Water Absorption	ASTM C413	0.2%

SURFACE PREPARATION

Concrete should be cured for a minimum of 28 days in accordance with American Concrete Institute (ACI) recommended concrete practices. Surface moisture may inhibit the bond of the RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE. Moisture testing of the concrete substrate by ACI 515 R-16 "Dryness of Surface" is an acceptable practice. Securely tape the edges of a 4' x 4' film of PVC or PE to the surface at several locations on the floor surface. Allow the film to remain on the concrete for a minimum of 16 hours. Remove the film. If there is visible moisture or darkening of the concrete, the slab is too wet and additional drying is required. The substrate must be structurally sound, clean, dry and free of all contaminants such as sealers, curing compounds, coatings, oil, dirt and dust. The finished substrate 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, but not always required, surface preparation methods. When these methods are used, a finish similar to the profile of 100 to 120 grit sandpaper is suggested.

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

TEMPERATURE DURING APPLICATION

Store RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE 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

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.

ESTIMATING TABLES

RED FURNANE SETTING BED

3/32" Nominal Thickness Square Feet per Unit		1/8" Nominal Thickness Square Feet per Unit	
32 lb. 10 oz. Unit	171 lb. 3 oz. Unit	32 lb. 10 oz. Unit	171 lb. 3 oz. Unit
35 sq. ft.	190 sq. ft.	32 sq. ft.	170 sq. ft.

RED FURNANE SETTING BED VERTICAL GRADE

3/32" Nominal Thickness Square Feet per Unit		1/8" Nominal Thickness Square Feet per Unit	
37 lb. Unit		37 lb. Unit	
41 sq. ft.		31 sq. ft.	

Material estimating quantities may vary depending upon job conditions and application techniques. Material quantities above are theoretical and do not include a safety factor.

ESTIMATING - BACK BUTTERING GROOVED TILE

For 3/32" thickness setting bed: No. of units estimated x 0.4 = No. of additional units for back buttering.

For 1/8" thickness setting bed: No. of units estimated x 0.3 = No. of additional units for back buttering.

the temperature of the substrate, air, masonry units and RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE are between 60°F (16°C) and 85°F (29°C).

Minimum temperature for installation is 60°F (16°C).

MIXING OF THE RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE

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.

RED FURNANE SETTING BED**32 lb. 10 oz. (14.8 kg.) Unit:**

- Combine the contents of the 1-gallon can (7 lb. 9 oz. [3.4 kg.]) of RED FURNANE Resin with the 1-pint can (14 oz. [397 g.]) of RED FURNANE Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 24 lb. 3 oz. (10.9 kg.) bag of RED FURNANE Powder.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

171 lb. 3 oz. (77.6 kg.) Unit:

- Evenly divide the contents of one of the 42 lb. (19.1 kg.) bags of RED FURNANE Powder into two equal parts by volume using two clean, dry 5-gallon pails.
- Combine 93 fluid ounces (2.8 liters) of RED FURNANE Resin with 12.0 fluid ounces (0.36 liters) of RED FURNANE Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add a 1/2 bag of RED FURNANE Powder, 21 lb. (9.5 kg.), as prepared in Step (a.).
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

RED FURNANE SETTING BED VERTICAL GRADE**37 lb. (16.8 kg.) Unit:**

- Combine the contents of the 1-gallon can (7 lb. 9 oz. [3.4 kg.]) of RED FURNANE Resin with the 1-pint can (14 oz. [397 g.]) of RED FURNANE Hardener in the 5-gallon capacity mechanical mixer. Mix thoroughly for approximately two minutes.
- Slowly add the 28 lb. 9 oz. (13.0 kg.) bag of RED FURNANE VERTICAL GRADE Powder.
- Mix the combined components for approximately two minutes or until all the powder is thoroughly dispersed.

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

APPLICATION OF THE RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE

Apply RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE with a 3/16" V-notched trowel held at a 45 degree angle. Place a sufficient amount of RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE to provide a continuous bond coat to the specified thickness. Do not apply more material than can be covered in 30 to 40 minutes at 75°F (24°C) or before the mortar begins to set. Refer to the "Typical Working & Setting Times" chart.

When using the Tiler's method of installation, grouting can proceed after the RED FURNANE SETTING BED can support foot traffic.

APPLICATION OF WALL TILE

Apply RED FURNANE SETTING BED VERTICAL GRADE to the wall. Press the tile into the setting bed to achieve maximum contact. Maintain accurate joint alignment and spacing with tile spacers.

MIX RATIO CHART – RED FURNANE SETTING BED

RED FURNANE SETTING BED	Weight	Volume
RED FURNANE Resin	6 lb. 13 oz. (3.1 kg.)	93 fl. oz. (2.8 liters)
RED FURNANE Hardener	12 oz. (340 g.)	12 fl. oz. (0.36 liters)
RED FURNANE Powder	21 lb. (9.5 kg.)	1/2 of 42 lb. (19.1 kg.) bag
Batch Size	28 lb. 8 oz. (13.0 kg.)	0.25 cu. ft. (7.0 liters)

TYPICAL WORKING & SETTING TIMES OF THE RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE

Temperature	Working Time	Support Foot Traffic
60°F (16°C)	55 minutes	12 hours
75°F (24°C)	45 minutes	10 hours
85°F (29°C)	25 minutes	8 hours

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. 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 system shall be RED FURNANE SETTING BED / SETTING BED VERTICAL GRADE 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 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.**