

Seaboard Asphalt Products Company

EF-400 Modified Emulsion

**Seaboard Modified
EF-400 Emulsion Coating
is a latex modified
asphalt emulsion and is
100% ASBESTOS-FREE.**

Used as a protective coating for a variety of applications on asphalt, metal, and masonry surfaces, and foam surfaces.

Seaboard Asphalt Products Company
3601 Fairfield Road • Baltimore, MD 21226
(410) 355-0330
www.seaboardasphalt.com



Features and Benefits

Seaboard Asphalt Products Company

EF-400

Waterproofing

TECHNICAL DATA SPECIFICATIONS

EF-400 SEABOARD MODIFIED EMULSION COATING SPRAYABLE GRADE FORMULA

Description: Seaboard Modified Emulsion Coating is a latex modified asphalt emulsion and is 100% ASBESTOS-FREE. This material is an asphalt emulsion with colloids and polymers to formulate a waterproof coating.

Uses: Seaboard Modified Emulsion Coating is used as a protective coating for a variety of applications on asphalt, metal, and masonry surfaces, and foam surfaces.

Limitations: DO NOT ALLOW material to freeze. DO NOT THIN material.

Application: Seaboard Modified Emulsion Coating must be applied to a surface that is free from all foreign matter. This material should remain dry until it has cured. This material can be applied by brush, squeegee, or spray equipment and should yield a coverage rate of 25 square feet per gallon.

Storage: Seaboard Modified Emulsion Coating must be kept from freezing.

COMPOSITION:

Asphalt	CAS 8052-42-4
Water	CAS 7732-18-5
Polymers	CAS Mixture
Clay	CAS 14808-60-7
Pigment Disperser	CAS Mixture

This information is to assist customers in determining if this product is suitable for the proposed application, and to satisfy themselves as to the suitability of the contents. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from law or patent implied.

Color.....	Black
Solids (%) (ASTM-C-1250).....	64±3% Min by Weight
Density	8.1 lbs/gal±4 (0.92 G/cm ²)
Application.....	Airless Spray, Brush
Cure Time	4-24 Hours
Elongation.....	800% Minimum
Adhesion to Concrete	Excellent
Low Temperature Flexibility	Flexible to -10° F
Water Vapor Permeance.....	<0.13 Perms
Air Permeability (ASTM-E-2178).....	<0.001CFM/ft ²
Liquid Water Absorbtion.....	<0.5% by weight
Resistance to Degradation.....	Excellent
Bacterial Attack	No Degradation
Algal Attack.....	No Degradation
Fungal Attack.....	No Degradation
Resistance to chemical attacks.....	Very Resistant to acid, salts
Re-Emulsification	None



Testing Results

Testing provided by:
Momentum Technologies, Inc
(full report available by request)

Physical Testing for: Seaboard Asphalt

For Accreditation by: ICC AC-29

Sample ID: EF 400 **Report #:** ESR-1490

Date: December 12, 2005

Sample: Received 9/15/05 Logged in as MTI-050826

Testing Provided: Analysis of a water-based, below grade waterproofing coating for compliance with the performance requirements of ICC AC-29 acceptance criteria.

Testing Dates: November 03, 2005 - December 15, 2005

Sample Selection: Sample was selected at the manufacturing site by an IAS accredited inspection agency in accordance with AC-85 section 3.1

Project ID: TX03L5A

1.0 Hydrostatic Pressure over Cracks

by: Table 1 of ICC AC-29 (Feb 2004) - ASTM C 1306

Sample Thickness ± 5 mils ICC Requirement: Fifty percent of lowest value received.

Sample	Result
--------	--------

Rapid Test: 0.0575in pass @ 7.5 psi for 15 minutes

Long Term: 0.0575in pass @ 5 psi for 48 hours

Result: EF400 achieves a pass value of 3.75psi in the rapid test and a pass value of 2.5psi in the long term test, when tested in accordance with ASTM C 1306 per Table 1 of ICC AC-29

2.0 Low-Temperature Flexibility and Crack Bridging

by: Table 1 of ICC AC-29 (Feb 2004) - ASTM C836, Section 6.7

Temperature of Test: The testing was conducted at -26°C .

ICC Requirement: No cracking or loss of adhesion.

Sample	Result
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1 No Cracking or Loss of Adhesion

2 No Cracking or Loss of Adhesion

3 No Cracking or Loss of Adhesion

4 No Cracking or Loss of Adhesion

5 No Cracking or Loss of Adhesion

Result: EF400 meets the requirements of ICC AC-29, Table (ASTM C836, section 6.7) for low-temperature flexibility and crackbridging.

3.0 Adhesion Strength to Poured Concrete

by: Table 1 of ICC AC-29 (Feb 2004) - ASTM C836, Section 6.10

Requirement: 1lbf/in. on surfaces desired

Sample	Result
--------	--------

1 15.808 lbf/in

2 13.728 lbf/in

3 10.182 lbf/in

Average 13.239 lbf/in

Result: EF400 meets the requirements of ICC AC-29, Table 1 (ASTM C836, Section 6.10) for adhesion strength to poured concrete.

3.1 Adhesion Strength to Masonry

by: Table 1 of ICC AC-29 (Feb 2004) - ASTM C386, Section 6.10

Requirement: 1 lbf/in. on surfaces desired

Sample	Result
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1 14.166 lbf/in

2 14.150 lbf/in

3 7.960 lbf/in

Average 12.092 lbf/in

Result: EF400 meets the requirements of ICC AC-29, Table 1 (ASTM C386m Section 6.10) for adhesion strength to masonry.

Testing Results (continued)

4.0 Resistance to Water

by Table 1 of ICC AC-29 (Feb 2004) ASTM D2939, Section 15

Requirement: No blistering or re-emulsification

Sample	Result
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1 No Blistering or Re-Emulsification

2 No Blistering or Re-Emulsification

3 No Blistering or Re-Emulsification

Result: EF400 meets the requirements of ICC AC-29 (ASTM D2939, Section 15) for resistance to water.

5.0 Remain in place during application

by Table 1 of ICC AC-29 (Feb 2004) ASTM C836, Section 6.9)

Thickness of Testing: Sample was tested at a wet thickness of 60 mils.

ICC Requirement: As recommended by manufacturer ± 5 mils

Result: EF400 meets the requirements of ICC AC-29, Table 1 (ASTM D2939, Section 15) for the ability to remain in place during application. The final thickness after 24 hours was 0.0162 in.

6.0 Water Vapor Permeance

by Table 1 of ICC AC-29 (Feb 2004) ASTM E96, Water Method

Requirement: Maximum 1 perm

Sample	Result
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Average 0.138 perms

Result: EF400 meets the requirements of ICC AC-29, Table 1 (ASTM E96, Water Method) for Water Vapor Permeance.

7.0 Extensibility after heat aging

by Table 1 of ICC AC-29 (Feb 2004) ASTM C836, Section 6.12

ICC Requirement: $\frac{1}{4}$ inch, no cracking

Sample	Result
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1 Pass $\frac{1}{4}$ inch stretch with no cracking

2 Pass $\frac{1}{4}$ inch stretch with no cracking

3 Pass $\frac{1}{4}$ inch stretch with no cracking

Result: EF400 meets the requirements of AC 29, Table 1 (ASTM C836, Section 6.12) for extensibility after heat aging.

Conclusion: EF 400 passes the requirements of ICC AC-29 Table 1 for acceptance criteria of a cold, liquid applied, below grade, exterior damp proofing or waterproofing material.

ES Report

ICC Evaluation Service, Inc. www.icc-es.org

ESR-1490 subject to re-evaluation in two years. Full copy available upon request.

Division: 07 - Thermal and Moisture Protection

Section 07140 - Fluid Applied Waterproofing

Report Holder: Seaboard Asphalt Products Company

Evaluation Subject:

LN-16 Clippership Polymer Modified and EF-400 Seaboard Modified Emulsion Foundation Coating

1.0 Evaluation Scope

Compliance with the following codes:

- 2006 International Building Code® (IBC)
- 2006 International Residential Code® (IRC)

Properties Evaluated:

Foundation Waterproofing

2.0 Uses

EF-400 Seaboard Modified Emulsion Foundation Coating is a spray or fluid applied waterproofing membrane applied to the exterior of foundation walls of concrete masonry units or cast-in-place concrete construction.

3.0 Description

EF-400 Seaboard Modified Emulsion Foundation Coating is a latex modified asphalt coating. The membrane has a resistance to hydrostatic pressure of 2.0psig (14kPa) when tested over a $\frac{1}{16}$ inch wide (1.6mm) crack in accordance with ASTM C 1306. The coating is supplied in 1-gallon (3.8 L) cans, 5-gallon (18.9 L) pails, 55-gallon (208 L) drums,

275 gallon (1041 L) totes and bulk containers, and has an indefinite shelf life. Manufacturer's recommended storage temperature range is between 70°F and 140°F (21°C and 60°C).

4.0 Installation

EF-400 Seaboard Modified Emulsion Foundation Coating is brush, roller or spray applied in two coats to the exterior verticle surfaces of below grade foundation walls of either cast-in-place concrete or concrete masonry unit construction.

The air temperature for application must be a minimum of 40°F (4.4°C) (there is no maximum temperature limit). The coating shall be applied in two equal coats to a minimum total wet film thickness of 60 mils (0.060 inch) (1.52mm), which cures to a minimum total dry film thickness of 40 mils (0.040 inch) (1.02mm). The coating shall be allowed to cure for a period of 4 to 24 hours, depending on ambient temperature, before any backfill is placed against the wall.

The surface to which the coating is applied must be structurally sound, clean, and dry, and free of dust, mud, loose mortar, sand, soil, frost, or other loose materials. Additionally, there must be no fins, metal projections or any substance that will prevent bonding of the coating membranes to the surface. Voids in concrete, tie holes and honeycombed areas in the foundation wall must be filled with non-shrinking grout is used for filling voids, the grout must be allowed to cure before the membrane is applied. Concrete and parged masonry surfaces must be cured and dry prior to application of the liquid water-proofing membrane.

Protection boards shall be provided to protect the waterproofing when backfill contains angular stone or other sharp objects.

5.0 Conditions of Use

EF-400 Seaboard Modified Emulsion Foundation Coating described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions.

5.1 Installation shall comply with this report, the manufacturer's published installation instructions and the applicable code. If there is a conflict between the installation instructions and this report, this report shall govern.

5.2 The coatings are limited to applications on the exterior verticle surfaces of below grade foundation walls.

5.3 Joints and penetrations of the walls to which the coatings are to be applied must be made watertight in accordance with the requirements of the applicable code.

5.4 This report is limited to an evaluation of the coatings applied to the minimum thickness stated in Section 4.0 of this report.

5.5 Application of the coating on uncured ("green") concrete is outside the scope of this report.

6.0 Evidence Submitted

Data in accordance with the ICC-ES Acceptance criteria for Cold, Liquid-applied, Below-grade, Exterior Damp-proofing and Waterproofing Materials (AC29), dated February 2004 (editorially revised January 2008).

7.0 Identification

Containers of EF-400 Seaboard Modified Emulsion Foundation Coating as described in this report shall be identified by a label bearing the manufacturer's name (Seaboard Asphalt Products Company) and address, product name and the evaluation report number. (ESR-1490)

Warranty Information

RESIDENTIAL LIMITED 10 YEAR WARRANTY

Seaboard Asphalt Products Company provides a Limited 10-Year Warranty for EF-400 Modified Emulsion Foundation Coating (the EF-400). EF-400 is a single component asphalt Emulsion foundation waterproof coating for use

throughout the year and throughout the seasons. This Limited Warranty is measured from the date of the completion of the application of the Product.

This Limited Warranty is for all first consumer purchases of a single story foundation: (1) single family detached residences, (2) multi-family units with separate unit ownership, or (3) multi-family residences with single ownership,

which has had EF-400 applied in accordance with product directions and specifications, to the vertical walls of the buildings poured concrete, single story foundation. This Limited Warranty covers the specified persons single-story

foundation from water leakage and seepage through the areas of single story foundations coated by the EF-400 under normal use.

Should EF-400 permit water or seepage into the residence. Seaboard will provide replacement of EF-400 or repair the coating in the area in question as the resolution. Seaboard will have the sole option to select the best method

for resolution of the leakage or seepage. Seaboard will be responsible for the cost of any replacement product of EF-400 required and, if necessary, pay for labor costs of re-coating the area in question within a reasonable time. The

total responsibility of Seaboard during the life of this Limited Warranty shall not exceed the lesser of (1) Two Dollars (\$2.00) per square foot of foundation wall covered with EF-400 and requiring repair, or (2) a total of Two

Thousand Five Hundred Dollars (\$2,500.00).

Seaboard excludes responsibility for certain costs and expenses. Seaboard is not responsible for removing or replacing any obstacles that affect or may affect repair or contribute to damage. Seaboard is not responsible for

removing or replacing soil, trees, grass, or other landscaping. Seaboard is not responsible for removing or replacing any obstacles on the interior or exterior of the wall which may include, but are not limited to steps, garage or garage

floors, patio or patio floors, decks, etc. Seaboard is not responsible for removing or replacing interior wall furnishings or fixtures, which may include, but are not limited to, carpeting, furniture, wall hangings, wallboard, etc.

The Limited Warranty excludes water leakage or seepage and wall damage that is in whole or part caused by: (1) cracks or defects greater than 1/16" which may include, but are not limited to, structural defects of the walls, footings

or foundations, etc. of the structure irrespective of the cause; (2) damage to the coating membrane from backfilling which may include, but is not limited to stone in the backfill, construction debris, etc.; (3) improper drainage above,

below or around the building or the foundation walls resulting from improper construction methods and methods not meeting or exceeding those of the local construction codes at the time of the application of EF-400; (4) defective or

inadequate interior, exterior or interior/exterior drainage systems; (5) insufficient grading that does not slope away from the structure sufficiently to drain water away or that results in the grade line extending above the EF-400 application

line, which can allow for water to penetrate above the coated area; (6) insufficient hydrostatic resistance at the exterior base of the foundation wall or across any floor within the foundation walls, which can allow for water to penetrate

and migrate through joints where the floor meets the walls or into the structure through basement floors or drains; (7) defective or inadequately functioning gutters and downspouts; (8) interior condensation on foundation walls or

interior finish; (9) intrusions or alterations of the waterproofed walls after installation of EF-400; such as cables, ducts, opening for pipes, etc.; (10) use of expansion joints in the design of the structure of the wall; or (11) construction

techniques that allow for entrance of water above, below or behind the wall coated with EF-400; or (12) failure to follow all required installation and application requirements including, but not limited to, failure to allow required cure time

before leakage or seepage when a wall coated with EF-400 is in contact with any other surface including, but not limited to, backfill, soil, protection board, or foundation drainage systems. Seaboard is not responsible for leakage or

seepage due to the installation of any object with may penetrate the surface.

This Limited Warranty only applies to the installation or application of

EF-400 by an authorized contractor approved by Seaboard.

THIS LIMITED WARRANTY EXCLUDES ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS. NOT OTHER WARRANTIES OTHER THAN THOSE EXPRESSLY PROVIDED FOR HEREIN ARE GIVEN. THIS LIMITED WARRANTY EXCLUDES ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR BREACH OF ANY WRITTEN OR IMPLIED WARRANTY MADE WITH REGARD TO EF-400. AN EXAMPLE OF

THIS WOULD BE THAT SEABOARD WILL NOT TAKE RESPONSIBILITY FOR ANY DAMAGES YOU MIGHT SUSTAIN THAT ARE RELATED TO LEAKAGE OR SEEPAGE OF WATER, DAMAGE TO THE STRUCTURE OR ITS CONTENTS,

OR ANY PERSONAL INJURY, OR FOR COST OF REPAIR OR REPLACEMENT OF EF-400 OTHER THAN THAT SPECIFICALLY PROVIDED UNDER THIS LIMITED WARRANTY.

REGISTRATION

PLEASE COMPLETE THE FOLLOWING INFORMATION WITHIN (30) DAYS OF THE INSTALLATION OF EF-400 MODIFIED EMULSION FOUNDATION COATING AND RETURN

TO SEABOARD ASPHALT PRODUCTS COMPANY AT 3601 FAIRFIELD ROAD, BALTIMORE, MARYLAND 21226.

BUILDER WATERPROOFING CONTRACTOR:

BUILDING ADDRESS: ADDRESS:

CITY: STATE: ZIPCODE: DATE OF WATERPROOFING INSTALLATION:

SQUARE FOOTAGE OF AREA COATED: DATE OF BACKFILLING:

DISTRIBUTOR:

ADDRESS:

248816 Homeowner (white) Builder (green) Contractor (canary) Distributor (pink) Seaboard (goldenrod) M-05

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throughout the year and throughout the seasons. This Limited Warranty is measured from the date of the completion of the application of the Product. Seaboard will provide replacement of EF-400 or repair the coating in the area in question as the resolution. Seaboard will have the sole option to select the best method

for resolution of the leakage or seepage. Seaboard will be responsible for the cost of any replacement product of EF-400 required and, if necessary, pay for labor costs of re-coating the area in question within a reasonable time. The

total responsibility of Seaboard during the life of this Limited Warranty shall not exceed the lesser of (1) Two Dollars (\$2.00) per square foot of foundation wall covered with EF-400 and requiring repair, or (2) a total of Two

Thousand Five Hundred Dollars (\$2,500.00).

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removing or replacing soil, trees, grass, or other landscaping. Seaboard is not responsible for removing or replacing any obstacles on the interior or exterior of the wall which may include, but are not limited to steps, garage or garage

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or foundations, etc. of the structure irrespective of the cause; (2) damage to the coating membrane from backfilling which may include, but is not limited to stone in the backfill, construction debris, etc.; (3) improper drainage above,

below or around the building or the foundation walls resulting from improper construction methods and methods not meeting or exceeding those of the local construction codes at the time of the application of EF-400; (4) defective or

inadequate interior, exterior or interior/exterior drainage systems; (5) insufficient grading that does not slope away from the structure sufficiently to drain water away or that results in the grade line extending above the EF-400 application

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BUILDING ADDRESS: ADDRESS:

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248816 Homeowner (white) Builder (green) Contractor (canary) Distributor (pink) Seaboard (goldenrod) M-05



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