
**GUIDELINE SPECIFICATION
for
HEF-DIELECTRIC
GREY AMAZITE™ or RED AMAZITE
ELECTRICAL INSULATING FLOORING SYSTEM**

The specification information below is intended for use by architects, engineers and other specifiers in defining the requirements of an epoxy fluid applied flooring and wall coating system utilizing RBC Industries, Inc., Hallemitte Product Line.

RBC Industries, Inc.
Hallemitte® Product Line
1 Weingeroff Blvd.
Cranston, RI 02910
800-272-7752
401-941-0150 Fax

PART 1 – GENERAL

- 1.01 SCOPE** – The specialty contractor shall furnish all materials, tools, equipment, appliances, transportation, labor and supervision required to install the epoxy flooring system.
- 1.02 SUBMITTALS**
- A. Manufacturer’s Data:** Contractor shall submit the manufacturer’s system data sheet(s) and surface preparation instructions for each product and system.
 - B. Maintenance Instructions:** Contractor shall submit copies of manufacturer’s written instructions for recommended maintenance practices.
 - C. Samples:** Contractor shall submit representative samples for approval prior to commencement of work. Samples shall be submitted to show product and system color and texture.
 - D. Warranty:** Contractor shall submit a sample of their written Warranty prior to execution of work. The Warranty shall be for one year. The Warranty shall be effective from the date of “majority of completion”.

1.03 PRE-QUALIFICATION

- A. Contractor Qualification – The Specialty Flooring Contractor shall be an approved installer of RBC Industries, Inc., Hallemite Product Line with at least five years of experience in installing resinous flooring.**
- B. Workman’s Qualification – Workmen engaged in the installation shall have successfully completed a program of instruction in the methods of installation required. The curriculum shall include identification of potential installation problems, safe handling of materials and proper installation techniques. The lead installer shall have installed epoxy flooring systems for a minimum of five years.**

1.04 RELATED MATERIALS – NEW and EXISTING CONCRETE

- A. Concrete Finish – Smooth trowel, soft broom, or wood float finish.**
- B. Curing Compound – Avoid the use of liquid curing compounds, sealers, hardeners, or other surface bond breaking materials when ever possible. If used, additional surface preparation may be required.**
- C. Minimum Cure Time – Minimum cure time for new PCC is 28 days (fly ash is 56 days).**
- D. Vapor Barrier – To avoid the loss of bond (between the epoxy and the concrete substrate) caused by hydrostatic pressure a functional vapor barrier is recommended under concrete slab on grade.**
- E. The concrete substrate should be flat or sloped-to-drain. (As an example, the epoxy topping will follow the contour concrete, if sloping to drain is desired an underlayment may be required.)**

PART 2 – MATERIALS and EQUIPMENT

2.1 EPOXY, AGGREGATE and INSTALLATION STEPS

HEF Dielectric – Grey or Red Amazite Electrical Insulating Flooring System.

2.2 PRODUCTS and INSTALLATION SEQUENCE

Approved Manufacturer:

**RBC Industries, Inc.
Hallemite Product Line
1 Weingeroff Blvd.
Cranston, RI 02910
(P) 800-272-7752**

Approved Materials:

HEF Dielectric – Grey or Red Amazite Electrical Insulating Flooring System is comprised of the following installation sequence and materials dependant on thickness and on level of volts required:

INSTALLATION SEQUENCE	LEVEL I 1/8" THICKNESS (50,000 VDC)	LEVEL II 1/4" THICKNESS (58,000 VDC)	LEVEL III 1/2" THICKNESS (88,000)
Optional Primer	HEF Grey or Red Amazite	HEF Grey or Red Amazite	HEF Grey or Red Amazite
Bond Coat	HEF Grey or Red Amazite	HEF Grey or Red Amazite	HEF Grey or Red Amazite
Slurry Aggregate	Aggregate Blend	Aggregate Blend	Aggregate Blend
Broadcast Aggregate	Flint Silica #12 or Equal	Flint Silica #12 or Equal	Flint Silica #12 or Equal
Grout Coat		HEF Grey or Red Amazite	HEF Grey or Red Amazite
Slurry Aggregate		Aggregate Blend	Aggregate Blend
Broadcast Aggregate		Flint Silica #12 or Equal	Flint Silica #12 or Equal
Grout Coat			HEF Grey or Red Amazite
Slurry Aggregate			Aggregate Blend
Broadcast Aggregate			Flint Silica #12 or Equal
Optional Topcoat	HEF Grey or Red Amazite	HEF Grey or Red Amazite	HEF Grey or Red Amazite

FIELD TEST FLOOR (ASTM D 149) AFTER INSTALLATION

- 2.3 INSTALLATION PROCEDURES** – Detailed installation procedures are proprietary and available only to RBC Industries, Inc. approved specialty flooring contractors of the Hallemite Product Line.
- 2.4 IRREGULAR SURFACES**
- 2.4.1 Spalled Concrete** – Uneven spalled concrete surfaces should be “smoothed” with Hallemite Cove Paste and Farring Compound (or equal), which is a cab-o-sil filled thin patching material.
- 2.4.2 Slope-to-Drain** – Concrete substrates that are not properly sloped to drains, trenches or sumps should be properly sloped with Hallemite HEF-OL (Overlay) System.
- 2.4.3 Membrane** – Elasto-Flex™ is an optional fluidproof and crack dampening flexible epoxy membrane that can be placed prior to placing the epoxy flooring system to stop water and other fluids from penetrating cracks in the concrete substrate. In addition, the membrane will minimize “reflexive” cracking of the epoxy topping. (See Hallemite system sheet HEF-FM (Flexible Membrane)).

PART 3 – SURFACE PREPARATION

- 3.1 GENERAL** – Surface to be bonded must be clean and sound which in all cases requires preparation.
- 3.2 SURFACE EVALUATION** – Surface evaluation is critical and should be done prior to placement of the epoxy flooring system. The following tests can be used to evaluate the substrate condition and the effectiveness of the surface preparation.

- 3.2.1 **STRENGTH** – The direct tensile strength of the concrete substrate surface may be determined by a pipe cap pull-off test (ACI 503R) or a commercially available adhesion tester (Elcomter Adhesion Tester Module 106 – Elcometer Inc. P.O. Box 1203, Birmingham, MI 48012). The strength of the concrete substrate after surface preparation should be a minimum of 180 psi.
- 3.2.2 **CONTAMINANTS** – The presence of grease, wax, oil or other bond breaking substances may be detected by dropping a small quantity of muriatic acid onto the concrete surface. No reaction indicates that contaminants are present, and they must be removed.
- 3.3 **CONCRETE SURFACE CLEAN PROCEDURES** – (See Hallemite Surface Preparation Information)
- 3.3.1 Grease, wax and oil contaminants may be removed by scrubbing with an industrial grade detergent or degreasing compound followed with gritblasting or an approved method of mechanical removal.
- 3.3.2 Weak or deteriorated concrete must be removed to sound concrete by bush hammering, gritblasting, scarifying, waterblasting or other approved methods of mechanical removal.
- 3.3.3 Dirt, dust, laitance and curing compounds are removed by gritblasting, sanding, or other approved methods of mechanical removal. Acid etching should only be used when NO other practical surface preparation method exists. Acid etching may not remove wax curing compounds. (See Hallemite Surface Preparation Information Appendix A)
- 3.3.4 Gritblasting and mechanical removal should be followed by sweeping and vacuuming. If compressed air cleaning is used, the air must be oil-free (removal of oilier may be required).

PART 4 - APPLICATION TECHNIQUE

- 4.1 **INSTALLATION** – Materials are to be installed per the proprietary installation guidelines. If “Unknown Site Conditions” exist, the Specialty Contractor may have to alter the installation instructions because of “problems” with the concrete substrate.
- 4.2 **STORAGE and PRECONDITIONING** – Store material between 55⁰F and 90⁰F in a dry condition and out of direct sunlight. Cure time will lengthen, and viscosity will increase as temperature drops. If necessary, precondition material to above 60⁰F. Hot material will have a drop in viscosity and corresponding decrease in working time.

PART 5 – SYSTEM DATA SHEET REPERENCES

5.1 TEST DATA

AMERICAN SOCIETY OF TESTING and MATERIALS (ASTM)

Physical Property	Test Method	Result
Tensile Strength, min	ASTM D 638	2,000 psi
Tensile Strength, min	ASTM C 307	1,000 psi
Compressive Strength, min	ASTM D 695	8,500 psi
Compressive Strength, min	ASTM D 579	9,,000 psi
Bond Strength, min To Concrete	ASTM D 4541	>400 psi
Shear from Steel Plate	MIL D 3134	1,050 psi

AMERICAN SOCIETY OF TESTING and MATERIALS (ASTM) - Continued

Physical Property	Test Method	Result
Impact Strength	ASTM D 279A Gardener Tube Falling Cylinder	80 in-lbs
Impact Strength	MIL D 3134 No Chipping, Cracking or Delaminating	Passing
Hardness	ASTM D 2240 Shore D	65 @ 24 hours 75 @ 7 days
Hardness, Aggregate	MOH'S Mineral Scale	6.5 – 7.0
Elevated Temperature	MIL D 3134	No Slip or Flow
Electrical Conductivity		Non-Conductive
Flexural Strength	ASTM C 580 7 days @ 77°F	2,080 psi
Flexural Strength	ASTM D 790	5.5 x 10⁵
Thermal Shock		Passed 3 Cycles 48 Hours @ 10°F 3 Minutes @ 212°F Shockwater 33°F
Linear Expansion	ASTM D 696	2 x 10⁻⁵
Indentation	MIL D 3134	.025 Max
Abrasion Resistance	ASTM D 4060 Tabor Abrader C 17 1000Gram Load, 1000 Cycles	0.5 gr
Coefficient of Friction Smooth	ASTM D 2047	0.7
Water Absorption	ASTM C 413 7 days @ 77°F	0.03%
Flammability	ASTM D 635	Self Extinguishing
Flame Spread NFPA-101	ASTM E 84	Class B
Anti-Microbial Resistance	ASTM G 21	Passes
Toxicity		Non-Toxic USDA Approved
VOC Content		Zero