# GUIDELINE SPECIFICATION
# for
# HEF-CQ (COLOR QUARTZ)
# 1/16 TO 1/4 INCH BROADCAST SYSTEM
# WITH FLEXIBLE MEMBRANE

**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. Hallemite Product Line.**

**RBC Industries, Inc.**
**Hallemite® 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 of 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.**

**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 CQ – Color Quartz 1/16 to 1/4 Inch Broadcast 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-CQ – Color Quartz 1/16 to 1/4 Inch Broadcast System with Flexible Membrane is comprised of the following installation sequence and materials dependant on thickness and on level of chemical resistance required:**

## 1/16" SYSTEM

| INSTALLATION SEQUENCE | LEVEL 1 | LEVEL II | LEVEL III |
|---|---|---|---|
| *Primer | HEF Elasto-Flex | HEF Elasto-Flex | HEF Elasto-Flex |
| Bond Coat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Broadcast Aggregate | Color Quartz | Color Quartz | Color Quartz |
| Grout and Lockcoat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Optional Clear Topcoats | 1. HEF UV Clear<br>2. Orange Peel Topcoat HEF UV OP Clear | 1. HEF CRD Clear Amber | 1. HEF CRA Clear Amber<br>2. Polyester Aliphatic Urethane HU 1186 Clear |

## 1/8" SYSTEM

| INSTALLATION SEQUENCE | LEVEL 1 | LEVEL II | LEVEL III |
|---|---|---|---|
| *Primer | HEF Elasto-Flex | HEF Elasto-Flex | HEF Elasto-Flex |
| Bond Coat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Broadcast Aggregate | Color Quartz | Color Quartz | Color Quartz |
| Grout and Lockcoat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Broadcast Aggregate | Color Quartz | Color Quartz | Color Quartz |
| Lockcoat Topcoat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Optional Clear Topcoats | 1. HEF UV Clear<br>2. Orange Peel Topcoat HEF UV OP Clear | 1. HEF CRD Clear Amber | 1. HEF CRA Clear Amber<br>2. Polyester Aliphatic Urethane HUF 1186 Clear |

## 1/4" SYSTEM

| INSTALLATION SEQUENCE | LEVEL 1 | LEVEL II | LEVEL III |
|---|---|---|---|
| *Primer | HEF Elasto-Flex | HEF Elasto-Flex | HEF Elasto-Flex |
| Bond Coat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Mortar Aggregate | Aggregate Blend | Aggregate Blend | Aggregate Blend |
| Groutcoat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Broadcast Aggregate | Color Quartz | Color Quartz | Color Quartz |
| Groutcoat/Lockcoat | HEF UV Clear | HEF CRD Clear Amber | HEF CRA Clear Amber |
| Optional Clear Topcoats | 1. HEF UV Clear<br>2. Orange Peel Topcoat HEF UV OP Clear | 1. HEF CRD Clear Amber | 1. Standard Topcoat HEF CRA Clear Amber<br>2. Polyester Aliphatic Urethane HUF 1186 Clear |

***NOTE: WOVEN FABRIC CAN BE ADDED TO THE FLEXIBLE MEMBRANE.**

**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, Birmington, 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 $55^0$F and $90^0$F 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 $60^0$F. 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)**

| | |
|---|---|
| **ASTM C 307** | **Standard Test Method for Tensile Strength of Chemical-Resistant Mortars, Grouts and Monolithic Surfaces** |
| **ASTM C 579** | **Standard Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts, Monolithic Surfacings and Polymer Concrete** |
| **ASTM D 570** | **Standard Test Method for Water Absorption of Plastics** |
| **ASTM D 635** | **Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics** |
| **ASTM D 638** | **Standard Test Method for Tensile Strength Properties of Rigid Plastics** |
| **ASTM D 695** | **Compressive Properties of Rigid Plastics** |
| **ASTM D 2240** | **Standard Test Method for Rubber Property – Durometer Hardness – Shore D** |
| **ASTM D 4060** | **Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser** |
| **ASTM D 4541** | **Standard Test Method for Determining Bond Strength** |
| **ASTM G 21** | **Standard Test Method for Determining Resistance of Synthetic Polymer Materials to Fungi (Microorganisms)** |
| **MIL D 3134** | **Military Specification for Material to withstand an Impact Shock Load** |