



DIVISION 09 96 56 - EPOXY COATINGS

1. GENERAL

1.1 SUMMARY

This specification covers the installation of a slip-resistant 100% solids industrial epoxy broadcast coating system which can be used to protect concrete in light industrial or commercial applications.

1.2 WORK INCLUDED

Furnish all labor and materials to prepare surface and install system in accordance with the following specifications.

1.3 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

1.4 DELIVERY, STORAGE, AND HANDLING

The materials shall be delivered to the job site in the original factory sealed containers bearing the product name, color, manufacturer's lot number, and precautionary labels. All products shall be manufactured or supplied by Polymerica, Inc. Materials are to be stored in a dry, enclosed area, protected from exposure to moisture, and maintained at a temperature between 60° F and 85° F.

1.5 INSTALLER QUALIFICATIONS

The installer shall be an established firm regularly engaged in the installation of polymeric flooring systems, with a minimum of five (5) years experience in successfully applying the same or similar systems. The installer shall be financially responsible, and able to supply references of jobs of a similar nature completed within the last five years. Where applicable, applicator shall be approved in writing by the materials manufacturer.

1.6 PROJECT CONDITIONS

- (a) Concrete substrate shall have cured thirty (30) days prior to application. If curing compounds have been used, they must be mechanically removed. Concrete shall be level to 1/8" in 10', have a steel troweled finish, and be free of grease or laitance.
- (b) Concrete subfloors on or below grade shall be adequately waterproofed beneath and at the perimeter of the slab. Substrate interior relative humidity must be below 75%, as measured by a Protimeter, and / or calcium chloride test results must not exceed 5.0 pounds per 1,000 square feet per 24 hours. Reference Polymerica Technical Bulletin SP-C for details on these tests.
- (c) General Contractor shall supply utilities including electric, water, and finished lighting. An air and substrate temperature of between 60° F and 85° F, and a relative humidity of 50% or less shall be maintained during installation and curing. In some cases, low temperature curing agents can be specified for temperatures between 40°F and 60°F.
- (d) Job area shall be free of other trades during installation and curing.

1.7 SUBMITTALS

The installer shall submit a finished sample of the product, color, and texture specified, along with complete product data, and Material Safety Data Sheets. All performance properties and cautions contained therein shall be considered part of this specification.

2. PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS / PRODUCTS

MasterShield IEC-125 Industrial Epoxy Coating System as manufactured by Polymerica, Inc.
Wide range of colors are available.

2.2 DESCRIPTION / PROPERTIES

MasterShield IEC-125 coating system shall be installed at a nominal 1/8" thickness consisting of:

- (a) MasterSpec EPS 100% solids pigmented epoxy primer at 8 - 10 mils

COMPONENT PERFORMANCE CHARACTERISTICS	
Tensile Strength (ASTM D-638)	8,500 psi.
Elongation (ASTM D-638)	5.5%
Adhesion (ASTM D-4541)	
to metal	2,500 psi.
to concrete	350 psi. (concrete fails)
Hardness (Shore D, ASTM D-2240)	75
Abrasion Resistance (ASTM D-4060)	35 - 40 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Service Temperature	160°F (immersion), 185°F (dry heat)
Slant Shear Strength	2,100 psi.

- (b) Two (2) applications of MasterShield IEB 100% solids industrial epoxy coating @ 8 - 10 mils each

COMPONENT PERFORMANCE CHARACTERISTICS	
Tensile Strength (ASTM D-638)	8,500 psi.
Elongation (ASTM D-638)	5.5%
Adhesion (ASTM D-4541)	
to metal	2,500 psi.
to concrete	350 psi. (concrete fails)
Hardness (Shore D, ASTM D-2240)	80
Abrasion Resistance (ASTM D-4060)	35 - 40 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Service Temperature	160°F (immersion), 185°F (dry heat)

- (c) An application of MasterShield IEC 100% solids industrial epoxy coating @ 10 mils

COMPONENT PERFORMANCE CHARACTERISTICS	
Tensile Strength (ASTM D-638)	8,500 psi.
Elongation (ASTM D-638)	5.5%
Adhesion (ASTM D-4541)	
to metal	2,500 psi.
to concrete	350 psi. (concrete fails)
Hardness (Shore D, ASTM D-2240)	80
Abrasion Resistance (ASTM D-4060)	35 - 40 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Service Temperature	160°F (immersion), 185°F (dry heat)

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- (d) an application of MasterShield CRF 100% solids chemically-resistant, slip-resistant finish coat

COMPONENT PERFORMANCE CHARACTERISTICS	
Tensile Strength (ASTM D-638)	7,400 psi.
Elongation (ASTM D-638)	2.5%
Adhesion (ASTM D-4541)	
to metal	2,600 psi.
to concrete	350 psi. (concrete fails)
Hardness (ASTM D-2240)	79 (Shore D)
Abrasion Resistance (ASTM D-4060)	19.0 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Service Temperature	175°F (immersion), 225°F (dry heat)
Slip Index (ASTM F-609)	greater than 8.0

- (e) Two (2) applications medium-grade silica aggregate, broadcast to excess

2.3 PACKAGING

All materials shall be factory weighed and packaged from a single source manufacturer.

2.4 SUBSTITUTIONS

No substitutions shall be allowed.

3. EXECUTION

3.1 EXAMINATION

With installer present, the substrate shall be examined for compliance with requirements for installation tolerances and other conditions affecting performance. (Reference Section 1.6) Proceed with installation only after unsatisfactory conditions including levelness tolerances have been corrected.

3.2 PREPARATION

- (a) The concrete shall be prepared by mechanical means such as shot blasting or scarification with an integral dust collection system. Any spalled or deteriorated concrete shall be removed and filled back to the original surface with TrowelMaster MCG or TrowelMaster IES. Consult Polymerica Bulletin SP-C and Product Data Sheets for complete details.
- (b) All cracks shall be routed out to 1/4" minimum in width and depth and filled with an elastomeric joint compound. Consult Polymerica Bulletin SP-D for details.

3.3 INSTALLATION

- (a) **MOISTURE VAPOR PASSIVATOR (IF REQUIRED)** - Should MVT or slab internal relative humidity exceed limits outlined in section 1.6, the slab shall be treated with MasterShield MVP, applied at a minimum of 30 mils DFT in compliance with manufacturer's directions. High MVT or RH readings may require an application of this product greater than the 30 mil minimum. Consult Polymerica Technical Department.
- (b) **WATERPROOFING (OPTIONAL)** - Should waterproofing the substrate be desirable, areas shall be treated with MasterProof EWM (substitute MasterProof PEM for service temperatures below 32°F) waterproofing system, applied at a minimum of 25 mils DFT in compliance with manufacturer's directions.
- (c) **PRIMER** - Primer shall be MasterSpec EPS Pigmented. Components shall be squeegee-applied, then back-rolled with a short nap roller. Application rate shall be 8 - 10 mils DFT, or 160 - 200 square feet per gallon as required to fill substrate profile.
- (d) **BASE COAT** - Base coat shall be MasterShield IEB-Pigmented. Components shall be squeegee-applied, then back-rolled with a good quality short nap roller according to manufacturer's directions. Application rate shall be 8 - 10 mils DFT, or 160 - 200 square feet per mixed gallon. Proceed immediately to next step.
- (e) **FIRST BROADCAST** - For texture, silica sand shall be broadcast into wet IEB-P. As both abrasive particle size and broadcast density will have a bearing on the texture of the finished product, end-user shall require submittals from contractor. Allow system to cure. Excess broadcast shall be swept off floor before proceeding with next coat. Note that coarse aggregate will require additional coating.
- (f) **BODY COAT** - Body coat shall be MasterShield IEB-Pigmented. Components shall be squeegee-applied, then back-rolled with a good quality short nap roller according to manufacturer's directions. Due to a rougher surface,

application rate shall be 75 - 100 square feet per gallon. Proceed immediately to next step.

- (g) **SECOND BROADCAST** - The procedure outlined in step (e) for broadcast aggregate shall be repeated.
- (h) **GROUT COAT** - Coating shall be MasterShield IEC, applied in the same manner as body coat. Expected yield shall again be 75 - 100 square feet per mixed gallon.
- (i) **FINAL COAT** - Final coat shall be MasterShield CRF. Components shall be squeegee-applied, then back-rolled east to west, then north to south with a good quality short nap roller. Application rate shall be 5 - 6 mils, or 260 - 320 square feet per mixed gallon. Allow to cure overnight for foot traffic and 24 hours at 70°F for vehicular traffic.

NOTE TO SPECIFIER: A variety of final coats are available which can provide protection against strong UV rays or sunlight, or function in extreme chemical service. Other final coat choices can provide an orange peel finish, various gloss levels, or varying degrees of slip resistance. Please consult with Polymerica Technical Department for assistance.

- (j) **CLEAN-UP** - All trash and debris shall be properly disposed of and arrangements shall be made to remove all unused material from the job site.

3.4 DETAILS

- (a) **INTEGRAL COVE BASE** - Where specified, a cove base shall be installed integral with the floor in 2", 4", or 6" heights.
- (b) **EXPANSION AND ISOLATION JOINTS** - Where the flooring system covers an expansion or isolation joint in the substrate, installer shall sawcut a joint into the finished cured floor and fill with JointMaster EJC (substitute JointMaster PJC for service temperatures below 32°F) in accordance with manufacturer's directions. Where the flooring system covers non-working control joints, the above procedure shall be followed, and the joint filled with JointMaster CJC.

3.5 PROTECTION

The General Contractor shall be responsible for protection of the finished floor from damage by subsequent trades.

The preceding specifications have been prepared as a guideline for most applications. Product specification is of vital importance to the successful completion of a project. Should you have any questions, please call our Technical Department.

For additional information, visit our web site:

www.polymerica.com

or email us at:

info@polymerica.com

GSMSIEC125-120905

800.762.1678

www.polymerica.com

