



MasterShield LSC/B-41
100% Solids
Light-Stabilized Epoxy Coating System
For Aircraft Hangars

DIVISION 09 96 56 - EPOXY COATINGS

1. GENERAL

1.1 SUMMARY

This specification covers the installation of a 100% solids, light-stable, non-yellowing epoxy coating system designed to protect concrete, masonry, and polymeric surfaces in aircraft or maintenance hangars. The system also mitigates moisture vapor transmission and chemical degradation that can occur at the interface of concrete slab and impermeable polymer floor coverings.

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 LSC/B-41 as manufactured by Polymerica, Inc.

Wide range of colors are available.

2.2 DESCRIPTION / PROPERTIES

MasterShield LSC/B-41 shall be installed at a nominal 41 mils thickness consisting of:

(a) MasterShield MVP 100% solids moisture vapor passivator @ 16 mils

COMPONENT PERFORMANCE CHARACTERISTICS	
Compressive Strength (ASTM C-579) @ 7 days	5,300 psi.
@ 28 days	5,800 psi.
Tensile Strength (ASTM C-307)	1,700 psi.
Flexural Strength (ASTM C-580)	2,800 psi.
Bond Strength (ACI Comm # 403)	350 psi. concrete fails
Thermal Coefficient of Expansion (ASTM D-696)	0.000025 inch
Thermal Shock Resistance (ASTM C-884)	passes
Water Absorption (ASTM C-413)	0.1%
Flammability (ASTM D-635)	Self-extinguishing
Impact Resistance (MIL D-3134F)	16 foot pounds concrete fractures
Indentation (MIL D-3134F)	No indentation
Hardness (Shore D, ASTM D-2240)	75 - 85
Abrasion Resistance (ASTM C-5178)	156 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Water Vapor Transmission (ASTM E96-95)	9.75 x 10 ⁻⁴
Water Vapor Permeance (ASTM E96-95)	6.67 x 10 ⁻⁷

(b) 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)
Slant Shear Strength	2,100 psi.
Impact Resistance (MIL D-3134F)	16 foot pounds (concrete fractures)
Indentation (MIL D-3134F)	No indentation

(c) MasterShield LSC 100% solids light-stabilized coating @ 10 mils

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 (Shore D, ASTM D-2240)	79
Abrasion Resistance (ASTM D-4060)	33 - 38 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Service Temperature	175°F (immersion), 225 °F (dry heat)
Yellowing Index (ASTM D-1925)	20 @ 1,200 hrs.
Gloss Retention (ASTM G-53)	100 @ 1,200 hrs.

(d) Optional final coat of MasterShield LSC-LD 100% solids light-dissipating coating overall or to designate walking areas @ 5 mils

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) **PRIMER** - Primer shall be MasterShield MVP Moisture Vapor Passivator. Components shall be mixed according to manufacturer's directions, applied with a half-moon notched squeegee, then back-rolled with a 3/8" nap roller until uniform. Application rate shall be a minimum of 16 mils DFT , or 100 square feet per mixed gallon. Consult Polymerica Product Data for details.
- (b) **SANDING** - Sanding is generally required to eliminate imperfections between coats. 100 grit or finer paper shall be used. Floor shall be vacuumed and tack wiped before proceeding with subsequent coats.
- (c) **FIRST COATING** - Coating shall be MasterShield IEC. Components shall be squeegee-applied, then back-rolled with a good quality short nap roller according to manufacturer 's directions. Application rate shall be 10 mils DFT , or 160 square feet per mixed gallon. Allow to cure overnight, sand surface, and tack wipe prior to applying second coat.
- (d) **TEXTURE (OPTIONAL)** - For textured surfaces, Aluminum Oxide or silica sand shall be broadcast into wet IEC. 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 primer to cure. Excess broadcast shall be swept of f floor before

proceeding with next coat. Note that coarse aggregate will require additional coating.

- (e) **SECOND COATING** - Coating shall be MasterShield LSC, a light-stabilized 100% solids epoxy coating. Components shall be squeegee-applied, then back-rolled with a good quality short nap roller according to manufacturer's directions. Application rate shall be 10 mils DFT, or 160 square feet per mixed gallon. Allow to cure overnight, sand surface, and tack wipe prior to applying third coat.
- (f) **THIRD COATING (OPTIONAL)** - Coating shall be MasterShield LSC-LD, a light-dissipating 100% solids epoxy topcoat. Components shall be squeegee-applied, then back-rolled with a good quality short nap roller according to manufacturer's directions. Application rate shall be 5 mils DFT, or 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.

- (g) **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:

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