

RUST-OLEUM®

4700 SYSTEM ULTRAPLEX™ C SL

SELF-LEVELING CONDUCTIVE EPOXY FLOOR COATING

DESCRIPTION AND USES

UltraPlex™ C SL is a 90 mil, self-leveling seamless floor coating, designed to meet the electrically conductive and anti-spark requirements of a wide variety of industrial flooring needs. The total coating system, including the required Prime & Seal™ Primer or Penetrating Prime & Seal™ Primer and the UltraPlex™ EC/SD Primer will provide 105 mils of protection.

UltraPlex C SL is a two component epoxy resin polymer, and cycloaliphatic curative with conductive elements to provide the required degree of conductivity. An attractive, long-lasting, and easily maintained floor is the result of thorough quality control of materials as well as proven formulations for specific needs. UltraPlex C SL coating is ideally suited for electronic assembly areas, paint plants, paint spray areas, areas for automatic guided vehicles, computer control rooms, clean rooms and pyrotechnic processing and storage areas.

This CPS Type II product is typically installed by factory trained contractors. Be sure you are fully aware of all application procedures and have all the required equipment available prior to beginning the installation of this product. Refer to the Application Guide for UltraPlex ESD System prior to starting coating application.

PRODUCT FEATURES AND BENEFITS

- Electrically Conductive (EC): Designed for areas requiring low resistance (25,000 ohms to 1 megohm at 500 volts, based on NFPA 99 test method).
- Chemical resistant: Offers resistance to a variety of acids, alkalis, and solvents. UltraPlex C SL has chemical resistance equal to 8200 System OverKote series. Refer to the Product Recommendation Guide.
- Anti-Spark: Meets the requirements for spark resistant floor topping.
- Durability: UltraPlex C SL provides a wear surface for protection where conductive tile just isn't enough.
- Maintenance: UltraPlex C SL is nonporous and of extreme high density. It resists gritting and traffic soil, will not hold odors and is easily mopped clean. UltraPlex C SL will not dust.
- Monolithic: Its monolithic construction provides a wall-to-wall or joint-to-joint seamless floor.
- Tough: Has high resistance to impact.

PRODUCTS

4700 System UltraPlex C SL is available in only one kit size: 70 sq. ft. at 90 mils (3.93 gallons of liquid, plus fibers to be added on site). UltraPlex C SL is available in twelve standard colors. Custom colors are available upon request. (Refer to the Rust-Oleum color chart.)

70 sq. ft. Kit	DESCRIPTION
236918	Natural
236921	National Blue
236923	Light Green
236925	Safety Yellow
236927	Tile Red
236929	Black
236931	Dunes Tan
236933	Dark Gray
236935	Light Gray
236937	Navy Gray
236939	White
241754	Super Light Gray
236941	Custom

PRODUCT APPLICATION

SURFACE PREPARATION

Preparation of the existing concrete is the most important step in the installation of an UltraPlex C SL Epoxy Floor Coating.

All grease, oil and other contamination must be removed. The surface of the concrete must be clean and rough to enable the epoxy based polymer to achieve maximum bond. Mechanical methods, including steel shot blasting, and grinding are used to prepare the floor. Prior to the application of an UltraPlex floor, the concrete should be at least 28 days old and have 200 psi tensile strength. See Technical Data Sheet for Prime & Seal Primer or Penetrating Prime & Seal Primer for proper application of primer.

Contact Rust-Oleum Technical Service for assistance. Curing compounds should be limited to those types which can be removed by mechanical preparation of the surface. Existing control and expansion joints should be carefully analyzed to ensure that proper application will provide the maximum monolithic seamless floor.

All edges are taped with a double layer of duct tape or 1/8" foam tape. Every attempt should be made to terminate the floor at walls and doors to eliminate gradation problems at any edge. A chase or keyed retainer must be placed at the terminated or exposed edges. See chase details in the Flooring Solutions catalog No. 304629 or contact Technical Service for assistance.

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PRODUCT APPLICATION (cont.)

PRIMERS

Application of two different primers is required for UltraPlex C SL to properly perform. First, the bare concrete must be primed with either Prime & Seal Primer or Penetrating Prime & Seal Primer. The second primer is UltraPlex EC/SD Primer. This is a conductive primer and must be installed with proper continuity to a ground source. Read the Technical Data Sheets for these primers before proceeding.

Expected coverage rates will be:

Prime & Seal Primer 150-200 sq.ft./gal.

Penetrating Prime & Seal Primer 200 sq.ft./gal.

UltraPlex Primer ESD 160 sq.ft./gal.

The primers should be allowed to "set" prior to the placement of UltraPlex C SL floor topping. This is an important step in order to insure a safe, pinhole free base for the UltraPlex C SL. Primer setting time will vary with ambient temperature. At 75°F, primer set time will be approximately 10 to 12 hours per coat.

GROUND CONNECTION

The UltraPlex C SL must have good electrical continuity to ground in order to properly perform as a conductive coating system.

If the connection to ground is done using copper foil strips, they should be placed into the UltraPlex EC/SD Primer just after it is applied and while it is wet.

If the connection to ground is done using 3M #3050 male grounding connectors, then they should be placed into the UltraPlex C SL coating while it is still wet.

A connection to ground should be made at a rate of one for every 1,000 sq ft of floor area. Predetermined locations for grounding should be made prior to application of the coating. If there are any questions about correct grounding procedures, contact Technical Service for addition information.

MIXING

Note: Before starting, ensure that the material, concrete surface, and the ambient air **MUST** be a minimum of 70°F; maximum of 90°F. Mixing of UltraPlex C SL must be done using an ECSL M-60 mixer. After pre-mixing the part A for 30 seconds to assure color consistency, pour part B into the mixer. Make sure to pour Part B while the ECSL mixer is running and mix for 2 minutes. Then slowly add one container of fibers to the center of the vortex and mix for one additional minute. Make sure the fibers are adequately dispersed mixed with no clumps of fibers remaining. **DO NOT OVER MIX.** Excessive mixing will induce air bubbles.

PRODUCT APPLICATION (cont.)

APPLICATION

Immediately pour the mixture on the floor. Use a screed rake (set at 1/8 inch) to spread the material, assuring proper coverage (70 sq. ft. kit at 90 mils). Then use a spike roller, suitable for ESD control coatings, to ensure release of any entrapped air and align fibers.

The alignment of the fibers is essential for the conductive performance of the coating. A specific two directional procedure must be used. The direction, speed and frequency of rolling are extremely critical to the floor's final electrical properties. Be sure to comply with the detailed rolling procedures in the Application Guide for UltraPlex ESD System. If there are any questions about correct spike roller procedures, contact Technical Service for addition information.

If using the 3M #3050 male grounding connectors are used, place them in the material at predetermined locations at the rate of one per 1,000 sq. ft. After the floor has cured, complete the ground connection using the 3M #3040 ground leads. Refer to the Application Guide for UltraPlex ESD System or contact Rust-Oleum Technical Service for assistance.

CLEAN UP

Xylene can be used to remove material from equipment if it is cleaned before the material has started to set up; otherwise, stronger solvents such as methylene chloride will be necessary.

TESTING

After cure, approximately 48 hours, surface resistivity should be tested for confirmation with job specifications. (Refer to the UltraPlex Specification Guide.) Final readings should be taken after 5 days.

SAFETY

UltraPlex C SL contains amine curing agents. Avoid skin contact. In case of eye contact or ingestion, contact a physician immediately. In case of skin sensitivity to these materials, use protective clothing and gloves.

SAFETY DATA SHEET

Safety Data Sheets are available. It is strongly recommended that they be read by all persons handling UltraPlex C SL.

If there are any questions on the use of this product, please consult our technical service department.

RUST-OLEUM®**4700 SYSTEM ULTRAPLEX™ C SL**
SELF-LEVELING CONDUCTIVE EPOXY FLOOR COATING**PERFORMANCE CHARACTERISTICS****COMPRESSIVE STRENGTH**

METHOD: ASTM C579

TYPICAL VALUE: 10,700 psi

FLEXURAL STRENGTH

METHOD: ASTM C580

TYPICAL VALUE: 3,600 psi

TENSILE STRENGTH

METHOD: ASTM C307

TYPICAL VALUE: 2,500 psi

BOND STRENGTH TO CONCRETE

METHOD: ASTM D4541

TYPICAL VALUE: Exceeds tensile strength of concrete
(concrete fails first)**TABER ABRASION**

METHOD: ASTM 4060, CS 17

TYPICAL VALUE: Loss/1000 cycles = 69 mg.

LINEAR COEFFICIENT OF THERMAL EXPANSION

METHOD: ASTM C531

TYPICAL VALUE: 2.5×10^{-5} in./in./°F**IMPACT RESISTANCE**

METHOD: MIL-D-3134J

TYPICAL VALUE: Satisfactory per 3.15

COEFFICIENT OF FRICTION

METHOD: ASTM D2047

TYPICAL VALUE: 0.6 minimum

FILM HARDNESS, SHORE D

METHOD: ASTM D2240

TYPICAL VALUE: 83

SURFACE RESISTANCE

METHOD: NFPA 99 test

TYPICAL VALUE: (EC) 25,000 megohms @ 500 volts

SURFACE RESISTANCE(EC) 25,000 ohms to 1 megohm @ 500 volts – NFPA 99
(test)

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PHYSICAL PROPERTIES

		4700 SYSTEM ULTRAPLEX C SL
Resin Type		Polyamine Converted Epoxy
Pigment Type		Varies depending on color
Solvents		Benzyl Alcohol
Weight*	Per Gallon	11.55-11.65 lbs.
	Per Liter	1.38-1.40 kg
Solids*	By Weight	100%
	By Volume	100%
Volatile Organic Compounds*		<160 g/l (1.33 lbs./gal.)
Recommended Dry Film Thickness (DFT) Per Coat		90 mils
Wet Film to Achieve DFT		90 mils
Practical Coverage at Recommended DFT (assumes 15% material loss)		70 sq.ft./kit
Mixing Ratio		2.8:1 base to activator by volume
Induction Period		None
Pot Life @ 70-80°F (21-27°C) & 50% Relative Humidity		Pour material onto floor immediately after mixing.
Dry Times at 70°F (21°C) and 50% Relative Humidity	Foot Traffic	24 hours
	Light Traffic	48 hours
	Full Traffic	72 hours
Shelf Life		2 months from date of manufacture
Flash Point		>200°F (93°C)
Safety Information		For additional information, see SDS

Calculated values are shown and may vary slightly from the actual manufactured material.

*Activated material

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