RUST-OLEUM®

4700 SYSTEM
ULTRAPLEX™ SD SL
SELF-LEVELING ESD CONTROL EPOXY FLOOR COATING

DESCRIPTION AND USES

UltraPlex™ SD SL is a 90 mil, self-leveling seamless floor coating, designed to meet the electrostatic discharge requirements of a wide variety of industrial flooring needs. As a total system, including Prime & Seal™ Primer or Penetrating Prime & Seal™ Primer and UltraPlex ™ ESD, UltraPlex™ SD SL provides 105 mils of protection.

UltraPlex SD 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 SD SL coating is ideally suited for electronic assembly areas, areas for automatic guided vehicles, computer control rooms and clean rooms.

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.

FEATURES AND BENEFITS

- Electrostatic dissipative: Designed for areas where electrostatic charge build-up hinders productivity. (1 megohm to 1,000 megohms or 1.0×10^6 to 1.0×10^9 megohms) at 100 volts based on ASTM F150 test method.
- Chemical resistant: Offers resistance to a variety of acids, alkalis, and solvents. UltraPlex SD SL has chemical resistance equal to OverKote. Refer to the Product Recommendation Guide.
- Durability: UltraPlex SD SL provides a wear surface for protection where conductive tile just isn't enough.
- Maintenance: UltraPlex SD SL is nonporous and of extreme high density. It resists gritting and traffic soil, will not support bacterial growth, will not hold odors and is easily mopped clean. UltraPlex will not dust.
- Monolithic: Its monolithic construction provides a wall-to-wall or joint-to-joint seamless floor.
- Tough: Has high resistance to impact. May be used in wet areas. Resists water erosion without moisture absorption.

PACKAGING

UltraPlex SD 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).

COLORS

4700 System 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
236943	Natural
236945	National Blue
236947	Light Green
236949	Safety Yellow
236951	Tile Red
236953	Black
236955	Dunes Tan
236957	Dark Gray
236959	Light Gray
236961	Navy Gray
236963	White
241756	Super Light Gray

SURFACE PREPARATION

Preparation of the existing concrete is the most important step in the installation of an UltraPlex SD 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 shot blasting, and grinding are used to prepare the floor. Prior to the application of an UltraPlex floor, 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.

PRODUCT APPLICATION

All edges are taped with a double layer of duct tape or ⅛ inch foam tape. Every attempt should be made to terminate the floor at walls and doors to eliminate gradation problems at any edge. UltraPlex SD SL must be terminated at a properly keyed or chased area. Consult Technical Service for assistance.

PRIMERS

Successive single coats of Prime & Seal Primer and Primer ESD are required to be applied to the properly prepared concrete surface with a rubber squeegee then rolled with a short nap roller. Rate of application will vary depending on the surface roughness and porosity.

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.

NOTE: Consult Rust-Oleum Technical Data Sheets for mixing instructions for the primers.

The primers should be allowed to “set” prior to the placement of UltraPlex SD SL floor topping. This is an important step in order to insure a safe, pinhole free base for the UltraPlex SD SL. Primer setting time will vary with ambient temperature. At 75°F, primer set time will be approximately 8 to 10 hours per coat.

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 SD 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 add one container of fibers to the center of the vortex and mix for one additional minute. (Excessive mixing will induce air bubbles). **Do not over mix**.

PRODUCT APPLICATION (cont.)

APPLICATION

Immediately pour the mixture on the floor. Use a screed rake 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 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 Instructions bulletin. Place 3M #3050 male grounding connectors in the material at predetermined locations at the rate of one per 1,000 sq. ft. After the floor has cured, 3M #3040 ground leads are connected at these points. Copper foil is also acceptable for use as grounding straps. 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.

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 SD 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 SD SL.

If there are any questions on the use of this product, please consult Rust-Oleum Technical Service department.

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: 80-85

ELECTRICAL PROPERTIES

SURFACE RESISTANCE

(ESD) 1 to 1,000 megohms @ 100 volts ASTM F-150

RUST-OLEUM®

TECHNICAL DATA

4700 SYSTEM ULTRAPLEX™ SD SL SELF-LEVELING ESD CONTROL EPOXY FLOOR COATING

PHYSICAL PROPERTIES

		4700 SYSTEM ULTRAPLEX™ SD SL SELF-LEVELING ESD CONTROL EPOXY FLOOR COATING
Resin Type		Polyamine Converted Epoxy
Pigment Type		Varies depending on color
Solvents		Benzyl Alcohol
Weight*	**Per Gallon**	11.6-11.7 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		8 mils Prime & Seal Primer or Penetrating Prime & Seal Primer 8 mils ESD Primer 90 mils UltraPlex SD SL
Wet Film to Achieve DFT		8 mils Prime & Seal Primer or Penetrating Prime & Seal Primer 8 mils ESD Primer 90 mils UltraPlex SD SL
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		25-30 minutes. Higher temperatures and larger quantities of activated material will significantly reduce pot life. Pour material onto floor immediately after mixing.
Dry Times at 70-80°F (21-27°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

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