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 electrically conductive and anti-spark requirements of a wide variety of industrial flooring needs. As a total system, including Prime & Seal™ Primer and Primer™ 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, 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 application equipment available prior to beginning application of this product.

FEATURES AND BENEFITS

- Electrostatic dissipative: Designed for areas where electrostatic charge build-up hinders productivity. (1 megohm to 1,000 megohms at 100 V based on ASTM F 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.
- Anti-Spark: Meets the requirements for spark resistant floor topping.
- 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 exceptionally 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

Twelve standard colors are available. Virtually any color can be furnished upon request. (Refer to the Rust-Oleum color chart.)

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

CONCRETE 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 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. When UltraPlex™ SD SL must be terminated in an open area, bevel the edge after cure to eliminate a rough edge.

PRIMERS

Successive single coats of Prime & Seal™ Primer and Primer™ ESD are required to be applied to the properly prepared concrete surface with a steel or 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.
Primer ESD 200 sq. ft./gal.

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 5 to 6 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, therefore **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.

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 24 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.

MATERIAL SAFETY DATA SHEET

Material 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 our 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: $2.5 \times 10^{(-5)}$ 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: 85

ELECTRICAL PROPERTIES

SURFACE RESISTANCE
(EC) 25,000 ohms to 1 megohm @ 500 volts - NFPA 99 test
(ESD) 1 to 1,100 megohms @ 100 volts ASTM F-150

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
Solvents		Benzyl Alcohol
Weight*	**Per Gallon**	11.5-11.7 lbs.
	Per Liter	1.38-1.40 kg
Solids*	**By Weight**	100%
	By Volume	100%
Volatile Organic Compounds*		<30 g/l (0.25lbs./gal.)
Recommended Dry Film Thickness (DFT) Per Coat		90 mils
Wet Film to Achieve DFT		90 mils
Theoretical Coverage at 1 mil DFT (25µ)		1604 sq.ft./gal. (39.5 m^2/l)
Practical Coverage at Recommended DFT (assumes 15% material loss)		70 sq. ft./gal.
Mixing Ratio		2.8:1.0 Base to Activator (by volume)
Induction Period		
Pot Life @ 70-80°F (21-27°C) & 50% Relative Humidity		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 77°F (25°C) and 50% Relative Humidity	**Foot traffic**	16-24 hours
	Full traffic	48 hours
	Recoat	12-16 hours
Shelf Life		1 year
Safety Information	**Flash Point**	>212°F (100°C)
	Warning!	**CAUSES NOSE, THROAT, EYE AND SKIN ITTITATION. CAUSES EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. MAY CAUSE ASTHMA, SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES. FOR INDUSTRIAL OR COMMERCIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. SEE PRODUCT MATERIAL SAFETY DATA SHEET (MSDS) AND LABEL WARNINGS FOR ADDITIONAL SALFETY INFORMATION.**

***Activated Material**

The technical data ad suggestions for use contained herein are correct to the best of our knowledge, and offered in good faith. The statements of this literature do not constitute a warranty, express, or implied, as to the performance of these products. As conditions and use of our materials are beyond our control, we can guarantee these products only to conform to our standards of quality, and our liability, if any, will be limited to replacement of defective materials. All technical information is subject to change without notice.

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