

PRODUCT DESCRIPTION

Stonlux ESD is a three-component pigmented liquid rich self-levelling conductive epoxy flooring system, applied at either 2 or 3mm thickness. Stonlux ESD cures to a hard aesthetically pleasing surface that exhibits excellent impact and chemical resistance, as well as outstanding static control properties.

USES

Stonlux ESD flooring system can be used when static electricity must be controlled. It is especially applicable in electronics manufacturing, packaging, assembly and test facilities, and in installations of highly sensitive electronic equipment. Since Stonlux ESD is seamless and easy to maintain, it is ideal for clean environments. Stonlux ESD is also perfect for static control applications which require good chemical, impact and abrasion resistance.

SYSTEM OPTIONS

Moisture Barrier:

To ensure long-term adhesion to concrete slabs in the absence of a proper vapour barrier, the use of Stonprime 786 OPR system is required with strict adherence to application instructions as indicated on the product data sheet.

Substrate Primer:

To fill substrate voids and detect the possibility of "outgassing", the use of SL Primer is essential. If blowholes are detected in the primer, they must be skimmed level with Pro-Struct 30/35NS Quickset. It is vital that the substrate has been properly sealed and is free of blowholes before the conductive / dissipative system overlayment is applied on top.

Conductive / Dissipative Primer:

Depending on static control requirements, either ATM or ATK Primer must be applied over the primed substrate with strict adherence to application instructions indicated in the respective product data sheets.

Cove Base:

To provide for an integral seal at the joint between the floor and the wall, Stonshield CR-980 Cove Bases in heights from 5 to 15cm may be specified.

PACKAGING, COVERAGE AND COLOUR RANGE

Primers: 20 Litre kit SL Primer Parts A, B & C – 60 to 70m²/kit (± 300 microns)

For conductive systems: 5 Litre kit ATK Primer Parts A and B – 40 to 45m²/kit (± 125 microns); or

For dissipative systems: 5 Litre kit ATM Primer Parts A and B – 40 to 45m²/kit (± 125 microns)

Note: SL Primer is necessary for both conductive and dissipative systems.

Stonlux ESD:

Stonlux ESD is packaged in 10 litre kits consisting of 3 components: Part A, B & C. A 10 litre kit will cover ± 5m² at 2mm thick and 3.33m² at 3mm thick.

NOTE: Coverage rates shown are theoretical. Actual coverage rates may vary. Make necessary allowances for the condition of the surface to be coated, working conditions, waste, spillage, experience level and skill of the installers, etc.

SHELF LIFE

Refer to individual components for shelf life.

REFERENCE SAMPLE

Stonlux ESD is available in 12 standard colours. Refer to the Stonlux colour chart. Custom colours are available upon request.

STORAGE CONDITIONS:

Store all components of Stonlux ESD between 16°C to 32°C in dry conditions. Avoid excessive heat and do not freeze.

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(Stonlux ESD)

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TYPICAL PROPERTIES AT 25°C

Tensile Strength (ASTM D-638)	13.1 MPa
Flexural Strength (ASTM D-790)	26.7 MPa
Flexural Modulus of Elasticity (ASTM D-790)	3.6 x 10 ³ MPa
Hardness (ASTM D-2440, Shore D)	80 to 85
Bond Strength (ASTM D-4541)	> 2.7 MPa (100% concrete failure)
Indentation (MIL-D-3134F)	Pass
Abrasion Resistance (ASTM D-4060, CS-17)	0.1mg max weight loss
Coefficient of Friction (Dry*) (ASTM F-1679)	0.81
Flammability (ASTM D-635)	Self-extinguishing Extent of burning 6mm max
Thermal Coefficient of Linear Expansion (ASTM C-531)	5.1 x 10 ⁻⁵ /mm°C
Water Absorption (ASTM C-413)	0.2%
Heat Resistance Limitation	Continuous: 60°C Intermittent: 93°C
Cure Rate	16 Hours surface cure 48 Hours traffic 7 Days full cure
Pot Life	20 to 30 Minutes
Application Temperature Range	16°C to 30°C
Dew Point	Substrate to be 2°C above dew point
VOC	27g/litre

NOTE: The above physical properties were measured in accordance with the referenced standards. Samples of the actual floor system, including binder and filler, were used as test specimens. All sample preparation and testing is conducted in a laboratory, values obtained on the field applied materials may vary.

STATIC CONTROL PROPERTIES

Surface Resistance (ESD-S7.1) <1.0 Megaohms (conductive)
1 to 1000 Megaohms (dissipative)

Body Voltage Generation (ESD STM97.2) <100 Volts

Electrostatic Discharge (ESD) flooring has a variety of applications from microchip manufacturing to military ordinance. Therefore, each facility might have unique resistance requirements based on their individual ESD programs. It is important to identify the resistance requirements and test method used for each project prior to installing any ESD flooring.

Electrical Testing: Once the ATK / ATM Primer is tack-free, it must be tested for proper conductivity. Point-to-point and point-t-ground readings must be taken.

The floor must also be tested after application of Stonlux ESD. Once the Stonlux ESD is tack-free, point-to-point and point-to-ground readings should be taken.

PLACEMENT GUIDELINES

SCOPE OF WORKS (BOQ)

Apply Stonlux ESD as a 2 to 3mm seamless, self-levelling, anti-static epoxy flooring system.

TEMPERATURE

Apply Stonlux ESD only in temperatures ranging between 16°C and 30°C.

SUBSTRATE PREPARATION

Remove all oils, grease and other contaminants by scrubbing with CarboClean 252 and rinsing with clean running potable water to obtain a water break-free surface. Allow to dry. If grinders are used to remove thin coatings, reduce or smooth the surface profiles, it will not give a surface pattern suitable for coatings unless followed by etching or vacublasting. The roughened surface should have a texture similar to 80-grit sandpaper, minimum tensile strength of 2 MPa and moisture content of 5% maximum. Refer to surface preparation methods for additional surface preparation requirements.

PRIMING AND PATCHING

Using a rubber squeegee, apply two coats of SL Primer wet-on-wet to achieve a spread rate of approximately 3 to 3.5m²/litre. Remove all ponded resin and squeegee lines before allowing the primer to cure. Do not backroll. If blowholes are detected in the primer, they should be skimmed level with Pro-Struct 30/35NS Quickset. Allow SL Primer to cure for 6 to 7 hours at 25°C and apply either ATK or ATM Primer within 16 hours of priming the substrate. If the SL Primer exceeds the 16 hours, it must be lightly sanded with 100-grit sandpaper and vacuumed to ensure an adequate bond.

Once the substrate has been properly primed and is free of voids and contaminants, either ATK or ATM Primer can be applied following the application guidelines stipulated in their respective product data sheets. Please refer to the ATK and ATM Primer product data sheets for additional information regarding the installation of conductive bridges across joints and grounding plates.

TESTING PRIMER

Once the ATK / ATM Primer is tack-free, it must be tested for proper conductivity. Point-to-point and point-to-ground readings must be taken.

ATK Primer (conductive) – all values must fall below 0.5 megaohms

ATM Primer (dissipative) – all values must fall between 1 to 500 megaohms

MIXING

Under no circumstances are the supplied kits to be split. The content of the components in a kit are to be thoroughly mixed before use. Using an impeller fitted to variable speed drill, premix the contents of the base component until the material looks uniform. Empty the entire contents of the activator into the base component and mix thoroughly for 2 minutes. Pour in the Part C aggregate and mix for a further minute. Do not aerate the mix or mix by hand.

APPLICATION

Using a 6mm notched rake, evenly apply Stonlux ESD at a theoretical coverage of 0.5m²/litre to achieve a dry film thickness of 2mm (2 litres/m²). Wearing spiked shoes, spike the material with spiked rollers for a period not exceeding 20 minutes to increase the flow, level the material and de-aerate the product. Allow to cure for 16 hours at 25°C before recutting joints. Do not cut through the installed copper wire bridges, conductivity between adjacent slabs will be compromised. Fill the depth of the joint with Pro-Struct 748 non-moving joint sealant and allow to cure for a minimum of 24 hours.

CONDITIONING

After the Stonlux ESD overlayment has cured a minimum of 48 hours, the floor must be conditioned using a megaohm meter (high range ohm meter) at 1000 volts along with two 500mm long squeegee type probes placed 50mm apart. The entire area of the floor must be conditioned by applying the voltage across the surface.

ELECTRICAL TESTING

Once the Stonlux ESD has been conditioned, it must be tested for proper conductivity. Point-to-point and point-to-ground readings must be taken.

- Conductive Systems: all values must fall below 1 megaohm
- Dissipative Systems: all values must fall between 1 and 1000 megaohms

RECOMMENDATIONS

- DO NOT attempt to install material if temperature of components and substrate are not within 16°C to 30°C. The cure time and application properties of the material are severely affected.
- DO NOT use water or steam in the vicinity of the application. Moisture can seriously affect the working time and other properties.
- Protect areas from dust and isolate access. Contamination between layers will affect the final appearance.
- Avoid contact with all liquid Parts A and B as they may cause skin and/or eye irritation. Workmen should cover hands with rubber gloves.
- Use only with adequate ventilation.

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NOTES

- Procedures for maintenance of the flooring system during operation are described in "StonCor Cleaning Procedures".
- Specific information regarding chemical resistance is available in the Chemical Resistance Guide.
- Material safety data sheets are available on request.
- A staff of technical service engineers is available to assist with product application or to answer questions related to Stonhard products.
- Requests for technical literature or service can be made through local sales representatives and offices, or corporate offices located worldwide.

COLD CONDITIONS

Low temperatures decrease flow, delay set and affect water resistance and final appearance. Materials should be conditioned for 16 hours at 21°C to 27°C; heaters should be utilised to warm floors.