

### PRODUCT DESCRIPTION

Stonclad ESD is a four-component, conductive, spark-proof epoxy mortar system. The system consists of an epoxy resin, amine curing agent, selected graded non-silica aggregates and conductive elements. It is sealed with a black conductive epoxy sealer. The system is conductive and spark-proof throughout. The standard thickness for Stonclad ESD is a nominal 6 mm. Stonclad ESD cures to an extremely hard, conductive, sparkproof, impact resistant surface that exhibits excellent abrasion, wear and chemical resistance.

### USES, APPLICATIONS

Stonclad ESD can be used in any application where static electricity must be controlled. It is designed for explosive environments such as munitions manufacture and storage where static build-up and sparks may present operating hazards.

### SYSTEM OPTIONS

#### Waterproofing

Where the total system must be waterproof, use of Stonhard's Stonproof ME7 is required with strict adherence to application instructions.

#### Cove Base

To provide an integral seal at the joint between the floor and the wall, cove bases in heights from 5 to 15 cm are available. Pigmented Topcoat Stonkote AT5 may be used to provide a tough, abrasion resistant coating in 10 dynamic colors.

### PACKAGING

Stonclad ESD is packaged in units for easy handling. Each unit consists of:

2 cartons, each containing:

- 6 foil bags of Amine
- 6 poly bags of Resin

12 individual bags of Part C (aggregate)

12 individual bags of Part C-1 (conductive elements)

1 carton of Stonclad ESD Sealer containing:

- 2 foil bags of Amine
- (2) 1 gallon cans of Resin

### COVERAGE

Each unit of Stonclad ESD will cover approximately 18.6 m<sup>2</sup> of surface at a nominal 6 mm thickness.

### STORAGE CONDITIONS

Store all components of Stonclad ESD between 16 to 30°C in a dry area. Avoid excessive heat and do not freeze. The shelf life is 3 years in the original, unopened container.

### COLOR

The standard color for Stonclad ESD is black. A pigmented topcoat is optional. Stonkote AT5 may be applied and is available in 10 standard colors. Refer to the Stonclad Color Sheet. Custom colors available upon request.

### PHYSICAL CHARACTERISTICS

Compressive Strength (ASTM C-579)	59 N/mm <sup>2</sup> after 7 days
Tensile Strength (ASTM C-307)	12 N/mm <sup>2</sup>
Flexural Strength (ASTM C-580)	19 N/mm <sup>2</sup>
Flexural Modulus of Elasticity (ASTM D-790)	2.0 x 10 <sup>2</sup> N/mm <sup>2</sup>
Hardness (ASTM D-2240, Shore D)	75 to 80
Abrasion Resistance (ASTM D-4060, CS-17)	0.08 gm max weight loss*
VOC Content (ASTM D-2369)	10 g/l 80 g/l - sealer
Coefficient of Friction (dry) (ASTM F-1679)	0.83*
Flammability (ASTM E-648)	Class 2
Slip Resistance Index (wet) (ASTM F-1679)	0.66
Thermal Coefficient of Linear Expansion (ASTM C-531)	9.0 x 10 <sup>-5</sup> mm/m°C
Water Absorption (ASTM C-413)	3.0%
Heat Resistance Limitation. (continuous exposure)	60°C
(intermittent exposure)	93°C
Cure Rate (@ 25°C)	8 hours for foot traffic 24 hours for normal operations

\* Test samples are finished with two coats of high solids epoxy coating.

### STATIC CONTROL PROPERTIES

Surface Resistance (NFPA 99 Test Method, ESD-S7.1)	0.025 to 1.0 megaohms
Spark Generation. (NFGS-09965)	No visible sparks

**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.

### SUBSTRATE

Stonclad ESD is suitable for application over properly prepared concrete, wood or steel surfaces. It is not recommended for use over asphalt, mastic, gypsum-based products, brick or painted surfaces. These must first be removed by mechanical means to expose the substrate prior to overlayment.

## SUBSTRATE PREPARATION

Proper preparation is critical to ensure an adequate bond and system performance. The substrate must be dry and properly prepared utilizing mechanical methods. Questions regarding substrate preparation should be directed to your local Stonhard representative or Technical Service.

## PRIMING

The use of Standard Primer is necessary for all applications of Stonclad ESD over all substrates except Stonset grouts. Over Stonset grouts, Stonhard's Stonset Primer is used. The Standard or Stonset Primer must be tacky during the application of Stonclad ESD. If the primer becomes tack-free, the area must be reprimed prior to continuing the application.

## MIXING

- 1 Empty the entire contents of one foil bag of amine (liquid) and one poly bag of resin (liquid) into a 5 gallon mixing pail.
- 2 Place this mixing pail on a JB Power Blender and activate the timer to start the one minute blending cycle. After 30 seconds, add the conductive element Part C-I.
- 3 When the blender stops, reactivate the timer and immediately pour the entire contents of one bag of Part C into the rotating pail. Allow the contents to mix for the complete one minute cycle.
- 4 When the blender stops, scrape off excess from the mixing blade and remove the pail, delivering it to the floor area for application.

## POT LIFE

After mixing, Stonclad ESD has a working time of approximately 20 minutes at 21°C. The working time will vary depending upon ambient and surface conditions.

## APPLYING

- Material must be used immediately after mixing.
- A Screed Applicator is used to apply the mixed Stonclad ESD to the floor. Before use, a special Trailing Edge, used only for Stonclad ESD, must be attached to the Screed Applicator.
- Steel finishing trowels are used to compact and smooth the surface of the material to the required 6 mm.
- Two coats of ESD Sealer are required to seal the Stonclad ESD surface. After the Stonclad ESD has cured, grind and vacuum the surface, then apply the Stonclad ESD Sealer. Once the first coat of Stonclad ESD Sealer has cured approximately 6 to 8 hours at 25°C, apply the second coat.
- When the pigmented topcoat option (Stonkote AT5) is chosen, the Stonclad ESD must be sealed with one coat of ESD Sealer and followed by the Stonkote AT5. This will ensure that the proper electrical properties are maintained.

**Note:** No wax or finish should be applied to the Stonclad ESD surface. This will result in a loss of conductivity.

## ELECTRICAL TESTING

After the Stonclad ESD Mortar has cured overnight, it should be tested for surface resistance. This testing must be conducted before application of the first coat of ESD Sealer and all tests must fall below  $1 \times 10^5$  ohms. Once the first topcoat has been applied and has been allowed to cure overnight, the floor must again be tested for surface resistance before the second coat of ESD Sealer or Stonkote AT5 is applied. All readings should once again fall below  $1 \times 10^5$  ohms. After the second coat of ESD Sealer or Stonkote AT5 has been allowed to cure overnight, the system should be tested one final time. Record all results on a Static Control Flooring Report and have the customer sign off on the readings. Take a minimum of 10 readings per 93 m<sup>2</sup> and mark the locations on the map. All readings should fall below  $1.0 \times 10^6$  ohms.

## GROUNDING

If grounding plates are used, the plate should be placed in the wet mortar either directly below the grounding device (outlet, piping, etc.) or as close as possible to avoid obstacles.

## RECOMMENDATIONS

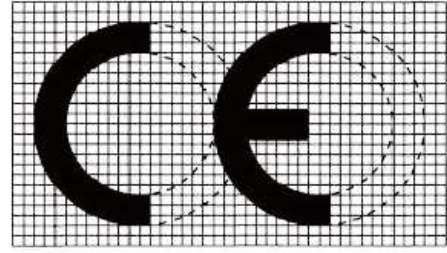
- DO NOT attempt to install material if the temperature of the Stonclad ESD components and substrate are not within 16 to 30°C. The cure time and application properties of the material are severely affected.
- DO NOT use water or steam in the vicinity of the application. Moisture can seriously affect the working time and other properties.
- The use of safety glasses and impervious gloves is required during application.
- Avoid contact with all liquid amine and resin as they may cause skin and/or eye irritation. Workmen should cover hands with rubber gloves.
- Use only with adequate ventilation.

## NOTES

- Procedures for cleaning and maintenance can be found in the Stonhard Floor Maintenance Guide.
- Specific information regarding chemical resistance is available in the Stonclad ESD Chemical Resistance Guide.
- Safety Data Sheets for Stonclad ESD are available on line at [www.stoncor-europe.com](http://www.stoncor-europe.com) under Tech Info or upon request.
- A staff of technical service engineers is available to assist with installation or to answer questions related to Stonhard products.
- Requests for technical service or literature can be made through local sales representatives and offices or corporate offices located worldwide.
- The appearance of all floor, wall and lining systems will change over time due to normal wear, abrasion, traffic and cleaning. Generally, high gloss coatings are subject to a reduction in gloss, while matte finish coatings can increase in gloss level under normal operating conditions
- Surface texture of resinous flooring surfaces can change over time as a result of wear and surface contaminants. Surfaces should be cleaned regularly and deep cleaned periodically to ensure no contaminant buildup occurs. Surfaces should be periodically inspected to ensure they are performing as expected and may require traction-enhancing maintenance to ensure the continue to meet expectations for the particular area and conditions of use.

## CE MARKING

The harmonized European Standard EN 13813 „Screed material and floor screeds- Screed materials - Properties and requirements“ specifies the requirements for screed materials for use in floor construction internally. Resinous flooring systems as well as resinous screeds fall under this specification they have to be CE-labeled as per Annex ZA., Table ZA.1.5 and 3.3 and fulfill the requirements of the given mandate of the Construction Products Regulation no. 305/2011



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EN 13813 SR-AR1.0-B2.0-IR18

Synthetic resin flooring system for use internally in buildings  
(system as per Product Data Sheet)

Release of corrosive substances:	SR
Wear resistance:	AR1.0
Bond strength:	> B2.0
Impact resistance:	IR18
Chemical resistance:	CRG*

\*CRG: see Stonhard Chemical Resistance Guide

### IMPORTANT:

Stonhard believes the information contained here to be true and accurate as of the date of publication. Stonhard makes no warranty, expressed or implied, based on this literature and assumes no responsibility for consequential or incidental damages in the use of the systems described, including any warranty of merchantability or fitness. Information contained here is for evaluation only. We further reserve the right to modify and change products or literature at any time and without prior notice.

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