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EPOXIES

SP-33

TECHNICAL DATA SHEET

COMPONENTS	SOLIDS	VOC	MIX RATIO
2	100%	<50 g/l	2:1

DESCRIPTION

SP-33 is a pre-pigmented, electrostatic dissipative (ESD), 100% solids epoxy. The coating provides electrical resistance between the range of 10^6 and 10^9 ohms which lasts throughout the life of the coating. It also eliminates the mixing time and mess inherent in using a color pack system. High-hiding, good flow and leveling, toughness and flexibility are characteristics of this high-quality epoxy. The cured material has good, broad-range, chemical resistance as well as good abrasion and impact resistance. SP-33 is compliant with ANSI/ESD STM7.1-2020.

RECOMMENDED USES

SP-33 is most often used in areas which contain equipment or instrumentation that is susceptible to electrostatic discharge. Areas such as these include but are not limited to: server farms, processing areas, clean rooms, electronics manufacturing/assembly and many others. The recommended coverage of SP-33 is 80-100 sq. ft/gal (16-20 mils) of mixed resin. Multiple coats may be applied to achieve higher build; the recoat window is 12-24 hours. If a second coat is applied after 24 hrs. of the first coat being applied, lightly sand or scuff the basecoat and then solvent wipe the surface with xylene to remove any loose dust or particles. ** Note** If SP-33 is applied too thin, the electrostatic dissipative properties will be diminished and will increase the risk of being non-compliant.

LIMITATIONS

SP-33 is designed to be applied at 16-20 mils as a body coat and 10-16 mils as a topcoat. Ideal application temperatures to be between 60-90°F. Cooler temperatures will increase cure times. Warmer temperatures will decrease working and cure times. Verify that substrate temperature is above 5 degrees of dewpoint during application and cure of material to avoid a potential amine blush. Note: Tile Red and Warm Sun appear slightly darker due to carbon black content.

SURFACE PREPARATION

The preparation method for each project is determined by a full understanding of the substrate to be coated, the chemistry of the coating system being used, the coating system thickness, and numerous other factors. The coating installer should fully read and understand ICRI Guideline NO. 310.2R-2013 and OSHA 29 CFR 1926.1153 before starting preparatory work. The aim, of preparing a substrate for coating applications, is to roughen the surface, remove weak layers, contaminants, dirt, debris and present a solid, clean, dry substrate for the primer. If unsure as to the level of preparation needed contact Polymer Nation at Lab@polymerNation.com.

MIXING

It is always recommended to mix the entire kit, whenever possible, to avoid off-ratio mixtures. Mix ratio is 2 parts SP-33 Part A to 1 part SP-33 Part B. Combine all of part A and B into a single container, large enough to except the entire kit. Mix using a 350 RPM mixer using an appropriate mixing blade for 1.5 – 2.5 minutes making sure to not introduce excessive air into the material.

APPLICATION

(See 'Copper Foil Grounding Tape' Section on Page 2 before installing SP-33 ESD Epoxy)

Pour entire content of mixed material onto the floor in ribbons. Spread material using a flat blade or v-notched squeegee. Back roll material using a 3/8" nap roller cover to maintain an even mil thickness of material. Recoat within 2-24 hours. Clean tools with a solvent similar to Xylene or Acetone.

Copper Foil Grounding Tape
• Polymer Nation recommends installing copper foil tape between the primer (P-01 Epoxy Primer) and the SP-33 ESD Epoxy bodycoat to ensure that any electrostatic discharge is properly grounded. As a primer, P-01 should be applied around 250 sq. ft./gal. (approximately 6 mils).
• It should be connected to ground by a qualified electrician before the area is returned to service.
• The copper foil tape to be used and installed should meet the following requirements:
• minimum of 1/2" in width
• copper foil tape is to be installed at one point per 1,000 SF
• McMaster-Carr (mcmaster.com) is a supplier of copper foil grounding tape (see Part #76555A642)
• For further information or questions, please reach out to techservice@polymernation.com or your local Polymer Nation Distributor.

Resistance Testing
• SP-33 is designed to have electrical resistance between 10^6-10^9 ohms when properly mixed and installed.
• Field testing of SP-33 should be in accordance with ANSI/ESD STM7.1-2020.
• SP-33 should be allowed to cure a minimum of 24-48 hours at ambient temperatures before any ohm readings are performed. This allows SP-33 to achieve suitable Shore D hardness (65-75). Conducting premature ohm reading tests may result in collecting inaccurate, unreliable data.

COMPONENTS

Part A

Part B

GENERAL PRODUCT INFORMATION

Chemistry	Epoxies
Color / Finish	Light Gray, Medium Gray, Tile Red and Warm Sun Tile Red
Number of Components	2
Solids by Volume	100%
VOC (Mixed)	<50 g/l
Mix Ratio	2:1
Mixed Viscosity	500-800 cP 25°C/77°F
Gel / Working Time	35-45 minutes
Application Temperature	60-90°F
Odor	Subtle

It is always recommended to mix the entire kit, whenever possible, to avoid off-ratio mixtures

Warmer temperatures will reduce viscosity and lower temperatures will increase viscosity

Data gathered at temperatures of 72-75°F and 30-50% RH. Warmer temperatures will decrease working and cure times

PHYSICAL PROPERTIES

The data below was gathered at temperatures of 72-75°F and 30-50% RH

Hardness	D65 @ 24 hours / D78 @ 7 days	
Tensile Strength	2,870 psi	ASTM C307
Compressive Strength	13,000 psi	ASTM C579
Flexural Strength	5,750 psi	ASTM C580
Abrasion — Taber CS-17	0.053g Loss (when higher abrasion resistance is required the addition of PC 1336 to the coating should be included)	ASTM D4060
Impact Resistance	>160 inch pounds	ASTM D2794
Adhesion to Concrete	>450 Substrate failure	ASTM D7234
Gloss @ 60°	90+	
Color Scale	0.5-1.0	ASTM D1500
Accelerated Weathering	Moderate yellowing	ASTM G154
Moisture Absorption	<.2 weight increase	ASTM C413
Coefficient of Thermal Lineal Expansion	15-17 x 10-6 27-30 x 10-6	ASTM C531
Water Vapor Transmission	See ASTM D3010	ASTM D1653
Independent Certificate — Third-Party Testing	N/A	ASTM D3010
Adhesion	5A	ASTM D3359
Adhesion to Steel	>1,000 psi	ASTM D4541
Hiding Power	2-5/200	ASTM D5150
Flammability When Adhered to Concrete	Self-Extinguishing	ASTM D635
Coefficient of Friction — Dry	0.75	NFSI B101.0
Coefficient of Friction — Wet	0.7	NFSI B101.1

Shore D. SP-33 should be allowed to cure a minimum of 24-48 hours at ambient temperatures before any ohm readings are performed; this allows SP-33 to achieve suitable Shore D hardness (65-75)

ASTM D4060 — Abrasion Resistance CS17 1000 g 1000cycles in g Loss

Applying material close to dew point will decrease gloss and may result in an amine blush

CURE SCHEDULE

Dry to Touch	6-10 hours
Through Dry	10-12 hours
Dry to Light Use	16-24 hours
Full Cure	7 days

COVERAGE & PACKAGING

Coverage Rate	80-100 sq. ft/gal
Application Thickness	10-20 (80 – 160 sq.ft./gal.)
Recoat Window	12-24 hours
Packaging	3, 15, 165 Gallon kits

STORAGE, HANDLING & SAFETY

Store at 60-80 degrees F. Store material between 60-80 degrees F in a protected dry location. Refer to the current Safety Data Sheet (SDS) for this product before handling, mixing, or applying. Use appropriate personal protective equipment and ensure adequate ventilation during application and cure. Dispose of material, containers, solvents, etc., per Federal, State and local guidelines, rules and laws.

TEST DATA

Test data has been gathered from testing conducted by independent, internal and third party testing. The best way to compare coating performance is by head-to-head independent testing as this removes the numerous variables found between testing standards, equipment and testing agencies.

TYPICAL VALUES

The information here is general information to help our customers determine whether our products suit their specific applications. Our products are intended for sale to commercial and industrial customers. We require that customers inspect and test our products before use to satisfy themselves as to the content and suitability for the applications they intend to use our products. Nothing herein shall constitute any warranty expressed or implied, including any warranty of merchantability or fitness for a particular purpose, nor is any protection from any law or patent to be inferred. The exclusive remedy for all proven claims is the replacement of our materials, and we shall not be liable for incidental or consequential damages. Polymer Nation Chemical Company LLC, 405 Oakwood Ave. Waukegan, IL 60085. All rights reserved.