

Technical Data Sheet

PRODUCT DESCRIPTION

Standard 2 coat system includes insulative primer and top coat.

Primer: pumaP
Top Coat: pumaESD

Available in Dissipative or "c" Conductive option.

If needed, additional Intermediate coat may be added for increase build thickness.

ADVANTAGES

- Meets all recommendations set forth in ANSI/S20.20-2014
- Static dissipative and conductive ranges in accordance to values defined in test method EOS/ESD Association ESD STM S7.1-2005 and ANSI/ESD STM 97.1 and STM 97.2
- Body Voltage Generation (BVG) <15 volts with conductive footwear.
- Abrasion resistant, durable, easy to clean, chemical resistant.
- Texture may be added for non slip applications.
- Available in a wide variety of colors.

TYPICAL USES

Can be installed in several different environments where the damaging effects of electrostatic discharge (ESD) cannot be tolerated. Primary industries that use ESD flooring include Electronic Assembly, Data processing, Military/ Aerospace, Hazardous Industries (dust or explosion hazards), and AGV areas.

LIMITATIONS

- Substrate must be structurally sound, dry and free of bond inhibiting contaminants.
- During installation and initial cure cycle substrate and ambient air temperature must be at a minimum of 50°F (10°C). Substrate temperature must be at least 5°F (3°C) above the dew point (for lower temperature installation contact the Technical Service Department).
- Maximum dry surface temperature not to exceed 90°F (71°C).
- Strictly adhere to published coverage rates.

SURFACE PREPARATION

Proper inspection and preparation of the substrate to receive resinous material is critical. Read and follow the "Instructions for Concrete Surface Preparation" for complete details.

PRODUCT CHARACTERISTICS

Finish: Gloss
Color: Clear. PumaColor Colorant may be added (8 oz/mixed gal)
Volume Solids: 98% ± 2%, mixed
Weight Solids: 98% ± 2%, mixed

VOC (EPA Method 24): g/ . lbs/gal (as applied)

Spreading Rate per coat:

	Minimum	Maximum
107 pumaPOXY (wet mils):	6.0	20.0
112 pumaESD (wet mils):	80	233

PRODUCT CHARACTERISTICS (CONT'D)

Drying Schedule @ 10.0 mils (250 microns) wet:

	@ 55°F (13°C)	@ 72°F(22°C)	@ 95°F(35°C)
Standard Hardener:		50% RH	
To touch:	16-24 hours	6-12 hours	4-8 hours
To recoat:			
minimum	24 hours	8 hours	6 hours
maximum	48 hours	24 hours	24 hours
Foot traffic:	48 hours	24 hours	18 hours
Heavy traffic:	96 hours	72 hours	60 hours
Full cure:	7 days	7 days	7 days

Fast Cure Hardener (F):

To touch:	3-4 hours
To recoat:	hrs
Foot traffic:	10-12 hours
Heavy traffic:	24 hours
Full cure:	7 days

If maximum recoat time is exceeded, abrade surface before recoating.
Drying time is temperature, humidity, and film thickness dependent.

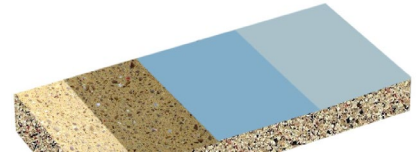
Pot Life (Standard) gallon mass	60 minutes	40 minutes	20 minutes
Pot Life (Fast Cure) gallon mass		25 minutes	

Shelf Life: Resin 18 months, unopened
Hardener (Standard): 12 months, unopened
Hardener (Fast Cure): 12 months, unopened
Store indoors at 40°F (4.5°C) to 100°F (38°C)

PERFORMANCE CHARACTERISTICS

Test Name	Test Method	Results
Abrasion Resistance	ASTM D4060, CS17 wheel, 1000 cycles	76 mg loss
Adhesion	ACI 503R	300 psi, concrete failure
Flammability		Self-extinguishing over concrete
Flexural Strength	ASTM D 790	~12,400 psi
Hardness, Shore D	ASTM D 2240	77
Impact Resistance	MIL-D-3134J	Direct: 160 in-lb Reverse: 20 in-lb
*Surface Burning	ASTME84/ NFPA 255	Flame Spread Index 20; Smoke Development Index 90
Tensile Strength	ASTM D 638	3527.4 psi

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Technical Datasheet

DESCRIPTION

112-pumaESD is very low odor, static dissipative, high performance urethane coating. 112-pumaESD features a non-yellowing, satin finish, and is available in a variety of colors and textures. The **112-pumaESD SYSTEM** typically consists of a 2-coat system of 103-pumaPOXY WB primer, and 112-pumaESD topcoat. For the ultimate in durability, 112-pumaESD is applied over a base layer/topping of 301-SLB, with 107-pumaPOXY top coat.

USES:

112-pumaESD is available in 2 resistance ranges (dissipative and conductive). It can be installed in several different environments where the damaging effects of electrostatic discharge (ESD) cannot be tolerated. Primary industries that use ESD flooring include Electronic Assembly, Data processing, Military/ Aerospace, Hazardous Industries (dust or explosion hazards), and AGV areas. It is applied over an insulative epoxy primer, and optional intermediate coat.

ADVANTAGES:

- Extremely low, non-offensive odor.
- Consistent resistance to ground without the need of a ground plane primer utilizing conductive particulates and polymers

ELECTRICAL PROPERTIES: AVAILABLE in 2 RESISTANCE RANGES

CONDUCTIVE: 25,000-1,000,000 ohms resistance 112 pumaESD-c
NFPA99 and DoD 4145.26M compliant

DISSIPATIVE: 10⁵ to 10⁹ ohms resistance * 112 pumaESD
**available in 10 to 10 upon request*

Meets all recommendations set forth in ANSI/S20.20-2014 including:

- Static dissipative and conductive ranges in accordance to values defined in test method EOS/ESD Association ESD STM S7.1-2005 and ANSI/ESD STM 97.1 and STM 97.2
- Body Voltage Generation (BVG) <15 volts with conductive footwear.
- Dissipates a 5000-volt charge to 0 volts in less than 0.1 seconds
- Maintains ESD properties throughout the thickness of the applied coating and is not dependent humidity for proper conductivity (unlike carbon fiber systems)

NOTE: To assure proper contact to floor surface, persons in area protected by ESD floor coating must wear approved quality ESD footwear.

REPAIRABILITY: The lack of dependence on conductive fiber and ground plane primers allows this system to be repaired without sacrificing electrical performance.

DURABILITY

Resistant to abrasion and other physical aggression of pallet jacks and carts commonly found in testing and assembly facilities.

COMPOSITION

Non-toxic static dissipating, polyurethane resin system combined with glass bead aggregates.

APPEARANCE

Satin finish, Surface is easy to clean.
Slip Resistant: Meets ADA Standard - Coefficient of Friction (.6)

APPLICATION

112-pumaESD is installed by certified applicators throughout the U.S.A.

SURFACE PREPARATION

To be assured of maximum adhesion and properties from any PumaCrete® resin products the correct surface is essential. Please refer to technical data sheet "Surface Preparation".

STORAGE, MIXING & APPLICATION TEMPERATURE

The storage, mixing and application conditions can affect the quality of the finish produced. Optimum storage and application temperature are 70°F.

CURE SCHEDULE (70 deg F)

24 hours (foot traffic), 36 hrs Full cure (heavy traffic)

MAINTENANCE

Regular cleaning of the applied system is recommended in order to maintain slip resistant properties and cosmetics. Normal cleaning agents (such as Simple Green) w/ auto floor scrubber.

CHEMICAL RESISTANCE

Excellent resistances to organic and inorganic acids, alkalis, fuel and hydraulic oils, aromatic and aliphatic solvents.

COLORS AVAILABLE

Standard colors: Std color is Medium Gray (also available in 7 additional colors—see Puma-Crete color chart.

WARRANTY

5 years (refer to PUMA-CRETE® ESD warranty terms and conditions)

MATERIAL PROPERTIES*:

Properties	Test Method	Results
Flash Point	ASTM D3278	187 °F (86°C)
Volume Solids (mixed)	ASTM D2369	75%
Mixed Viscosity	ASTM D2196	300-500 cPs
Dry Time	ASTM D5895	Tack Free 8 hr Dry 16-24 hr Full Cure 7-14 days
VOC	ASTM D3960	< 250 g/l Pigmented

CURED PROPERTIES*:

Properties	Test Method	Results
Abrasion Resistance Tabor CS-17, mg loss/1000 cycles/1000g mass	ASTM D4060	25 mg
Coefficient of Friction-COF James Test	ASTM D2047	0.55 0.65(w/GLOSS GRIP)
Tensile Strength	ASTM D2370	6160 PSI
Elongation	ASTM D2370	8%
Impact	ASTM D2794	140 in.lbs Direct & Reverse
Hardness (Pencil)	ASTM D3363	2H
Dry Film Thickness	at 4 mils WFT	3 mils

CONDITIONS OF USAGE: Installation of all products purchased must be by professional installers periodically published by PUMA-CRETE or otherwise approved by PUMA-CRETE in writing. Modification to any of PUMA-CRETE's products voids the warranty. The installer shall maintain a written contemporaneous record of field conditions (including, without limitation, surface and atmospheric conditions, usage rates, and lot numbers of products installed). PUMA-CRETE reserves the right of inspection of any installed product, installation and maintenance records and records of field conditions and may conduct additional testing as is reasonably required to investigate any warranty claims. Warranty shall only apply for products or materials that have been paid for in full.