



Environmentally Safe Polymers, Inc.

Technical Data

Updated 11/2004

POLYSTEEL #88 ALIPHATIC URETHANE HYBRID COATING

PRODUCT DESCRIPTION AND USAGE:

PolySteel #88 is a 100% solids, two component batch or plural mix, high performance aliphatic urethane hybrid coating. It may be applied by brush, roller, single component or plural component spray. It is characterized by outstanding chemical and solvent resistance, excellent weatherability, gloss and color retention, and excellent adhesion to a variety of substrates. PolySteel #88 is composed of low toxicity, aliphatic trimer isocyanate which reacts with a polyol made up of polyesters and a slow reacting amine. The pot life is 30-40 minutes at 75°F and cures tack free in 2-3 hours. Normally used as a protective top coat over other coatings or casting materials where color stability is needed. May also be used as a corrosion resistant top coat over metal substrates when appropriately primed.

COLOR:

White. Custom colors are also available. Contact your E.S.P. Representative for more information.

PHYSICAL PROPERTIES

WEATHERABILITY:

No significant color change, loss of gloss, cracking, checking or loss of film integrity noted after weatherometer exposure equal to 5 years of exterior weathering.

CHEMICAL RESISTANCE:

Good hydrolytic stability to 180°F. Good resistance to inorganic bases, acids and hydrocarbon solvents, fair resistance to oxygenated and chlorinated solvents.

TENSILE:

ASTM D-412
Strength: 2000 psi
Elongation: 100%
Permanent Set: 5% maximum

HARDNESS:

ASTM D-2240
Shore A 92 - 95
Shore D 50 - 55

TEAR RESISTANCE:

ASTM D-624
Die C 50 pli

ABRASION RESISTANCE:

Taber abrasor, 1 kg load, 1000 cycles H-18 wheel, -200 mg loss.

COLD TEMPERATURE FLEXIBILITY:

ASTM D-3111
Pass 1.0 inch mandrel @ -40°F.

SERVICE TEMPERATURE:

-60° to 300°F.

WATER ABSORPTION:

ASTM D-471
24 Hours at room temperature 1.0%

WATER VAPOR PERMEABILITY:

ASTM E-96 procedure BW.
100% R.H. differences at 73°F.
0.05 perm inches

LIQUID PROPERTIES

COVERAGE:

Sq.Ft./Gal./Mil 1600

SOLIDS:

Weight: 100%
Volume: 100%

V.O.C.:

Conforms to all Air Pollution Control regulations.
Contains no Volatile Organic Compounds.

FLASH POINT:

ASTM D-56 (TCC)
Above 200°F.

STORAGE STABILITY:

Poly Component: One year @ 50-90°F.
Iso Component: Two years @ 20-100°F.

THINNER:

Thinning is recommended only to extend pot life utilizing either Toluene, Xylene, MEK or MIBK.

VISCOSITY:

Poly Component: 6000-8000 cps @ 77°F.
Iso Component: 2000-3000 cps @ 77°F.

POLYSTEEL #88

APPLICATION

PRIMER:

Self-priming on most surfaces. Exhibits excellent adhesion to aromatic polyureas and polyurethane's. PolyPrime #01 or PolyPrime #06 epoxy primers are recommended where enhanced adhesion is needed. Please contact your E.S.P. Representative for specific recommendations

MIXING:

1:1 by volume. Premix both components to resuspend any settled pigment.

POT LIFE:

When initially mixed, the viscosity is approximately 5000 cps and quite thixotropic. It is sprayable at 2000-2500 psi for approximately 30 minutes. It is also brushable for approximately 30 minutes and may be roller applied for up to 50 minutes. Thinning with Toluene, Xylene, MEK, MIBK or with a chlorinated solvent, will extend the pot life to 2-3 hours. Thinning up to 25% is permissible. However, maximum film thickness per coat will be reduced from 10 mils to 5 mils.

EQUIPMENT:

For single component airless equipment, use pumps capable of producing 2000 psi at the spray gun or thin 5-10% with solvent such as Toluene, Xylene or MEK. For brushing and rolling use brushes and medium nap rollers of high quality in order to avoid leaving fibers in the applied film. Thinning for spray applications will extend the applicable pot life. Plural component equipment may also be used with some heating if desired. A Binks 43P gun with a Simpson static mixer is recommended for spray plural application.

CURE TIME:

PolySteel #88 stays wet for approximately 1 hour, then becomes tack free in 2 to 3 hours. Cures to handle in 3 to 5 hours. Develops chemical resistance and physical properties in 48 hours. Recoatable for up to 2 weeks.

PRECAUTIONS:

See Material Safety Data Sheet for complete safety data. When spraying a particulate matter mask is necessary for protection from the isocyanate matter. Protect from exposure to moisture. Water will cause the "A" component (ISO) generate carbon dioxide with resulting high pressure in closed containers.

Our data is based on information from lab and field testing which we believe to be reliable and accurate. Environmentally Safe Polymers, Inc. makes no warranties, expressed or implied of the products use or its results, and assumes no obligation or liability in connection there