



# Environmentally Safe Polymers, Inc.

## Technical Data

Updated 11/2004

### **POLYDECK #50 PURE POLYUREA SPRAY ELASTOMER SYSTEM**

#### **PRODUCT DESCRIPTION AND USAGE:**

PolyDeck #50 is a high performance, 100% solids, spray applied, pure polyurea elasto-plastic polymer. It is characterized by high physical properties, outstanding chemical and solvent resistance, and usability under wide climatic conditions with outstanding durability. It is composed of isocyanate prepolymers which are reacted with amine prepolymers to form a polyurea elastomer. Both components are low viscosity fluids which react very quickly to form a tough polymer when mixed and applied using heated, plural component airless spray equipment. PolyDeck #50 was specifically developed for use as a wear surface, waterproofing membrane for vehicular and pedestrian traffic decks.

#### **PHYSICAL PROPERTIES**

##### **TENSILE PROPERTIES:**

ASTM D-412  
Strength: 2825 psi  
Elongation: 450% minimum  
Permanent Set: 20% maximum  
Density PCF: 67  
Gardner Impact: 310 in/lbs

##### **TEAR RESISTANCE:**

ASTM D-624 Die C 450 ± 20 pli

##### **WEATHERABILITY:**

ASTM G-53  
No cracking, checking or loss of integrity after 2000 hours. Light colors yellow when exposed to U.V. light.

##### **SERVICE TEMPERATURE:**

-40° to 300°F.

##### **ABRASION RESISTANCE:**

Taber abrasor, 1 Kg load, 1000 cycles H-18 wheel, -150 mg loss.

##### **HARDNESS:**

ASTM D-2240  
Shore A 92 ± 2  
Shore D 50 ± 2

##### **COLD TEMPERATURE FLEXIBILITY:**

ASTM D-3111 Pass 0.25 inch mandrel @ -40°F.

#### **CHEMICAL RESISTANCE:**

See E.S.P. Polyurea & Polyurea Hybrid Chemical Resistance Chart.

#### **WATER VAPOR PERMEABILITY:**

ASTM E-96 procedure BW.  
100% R.H. differences at 73°F  
0.02 perm inches @30 mil film

#### **WATER ABSORPTION:**

ASTM D-471 24 hours at room temperature 1.5%

#### **LIQUID PROPERTIES**

##### **COVERAGE:**

1600 mil square feet per gallon.

##### **SOLIDS:**

“A” 100% by weight and volume.  
“B” 100% by weight and volume.

##### **V.O.C.:**

Contains no Volatile Organic Compounds.

##### **FLASH POINT:**

Above 200°F.

##### **VISCOSITY:**

“A” Component: 700-900 cps @ 77°F.  
“B” Component: 600-800 cps @ 77°F.

##### **SHELF LIFE:**

“A” One year @ 50-90°F.  
“B” Two years @ 20-100°F.

##### **THINNER:**

Not recommended.

##### **CURE TIME:**

Gel in 5-8 seconds. Cure to handle in 30-40 seconds. Develops chemical resistance and physical properties in 8 hours. Recoatable for up to 8 hours.

##### **MIX RATIO:**

1:1 by volume.

##### **CLEAN UP SOLVENT:**

Toluene, Xylene, MEK. For reduced fire hazard use glycol ethers or environmentally acceptable chlorinated solvents.

## **POLYDECK #50**

### **APPLICATION**

#### **EQUIPMENT:**

PolyDeck #50 requires hot airless plural component equipment capable of producing a minimum of 2000 psi and heat to 140°F. Higher pressures to 2500 psi may provide better mixing with enhanced physical properties for the end product. Contact your E.S.P. Representative for specific spray gun recommendations. Self-purging impingement mixing spray guns are required.

#### **PRIMER:**

Self-priming on many surfaces. PolyPrime #01 Epoxy Primer is recommended for cementitious and masonry surfaces where enhanced adhesion is needed. PolyPrime #06 Primer is recommended for maximum adhesion to metal surfaces. Please contact Environmentally Safe Polymers, Inc. for more specific recommendations.

#### **PRECAUTIONS:**

See Material Safety Data Sheet for complete safety data. Protect from exposure to moisture. Water will cause the "A" component (ISO) to generate carbon dioxide with resulting high pressure in closed containers.

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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 therewith.