

POLYKEN[®] SYNERGY

Product Information

Product description: Synergy™ is a multilayer plant coating system consisting of a thermally activated primer, a cross-linked, thermoplastic elastomer layer, and a tough polyolefin top layer. During application the three layers are fused, resulting in strong mechanical and chemical bonds that maximize performance. Thermal fusion generates mechanical toughness and superior anticorrosion properties that insure long-term pipeline protection.

Features:

- Thermally fused polymeric system.
- Impermeable to oxygen and moisture.
- High shear resistance.
- Low cathodic protection costs.
- Durable and reliable.
- Flexible system design.

Product selection guide

Max. operating temperature	85°C (185°F)
Recommended primer	3019
Recommended pipe preparation	SSA-SA 2 (SSPC-SP6) 1 – 3 mil anchor profile (25 – 76 micron anchor profile)

Product construction

	Inner Layer 3000-25	Outer Layer 3056-25
Backing	15 mils (0.381 mm)	21 mils (0.533 mm)
Adhesive	10 mils (0.25 mm)	4 mils (0.102 mm)
Backing color	Black	White, Yellow, Blue, Black

Ordering information

Polyken® 3000-25 and 3056-25 are available in roll form.

Example	3000-25 BLK 4X800 ft	Standard Ordering options
30000	Product type	3000, 3056
25	Total tape thickness in mils	25 mils (0.635 mm)
BLK	Tape backing color	3000: Black 3056; Black, White UVI, Blue UVI, Yellow UVI
4	Tape width in inches	4", 6", 9", 12", 18"
800	Tape roll length in feet	800 ft (4", 6", 9", 12", 18"), 1000 ft (12" wide)

For other ordering options please contact your Seal For Life representative.

**Product properties of Polyken[®] SYNERGY
Fused-system properties – 50 mil system**

Property	Method	Typical values	Units
Peel adhesion to steel	ASTM D1000	38 6.6	lb/in kg/cm
Cathodic disbondment	ASTM G8	0.3 7.6	in radius mm radius
Water vapor transmission rate	ASTM F1249	< 0.03 < 0.5	g/100in ² /24hr g/m ² /24hr
Impact resistance	ASTM G-13, no holidays	1000 450	lb kg
Impact resistance	ASTM G-14	50 5.6	in-lb J
Penetration resistance	ASTM G-17	< 15	%
Bend flexibility	CSA Z245.21	Pass at 2.5°	
Bend flexibility	API-5L at 70°	6°	PDL
Volume resistivity	ASTM D257	10 ¹⁵	Ω-cm
Dielectric strength	ASTM D1000	20-23	kV

Equation for Pipe Coating Requirements

Squares** of coating required	$\frac{(\text{width of coating in inches}) \times (\text{area of pipe in square feet})^*}{(\text{width of coating in inches} - \text{overlap in inches}) \times 100}$
* Area of pipe in ft ² = (diameter in inches / 12) x 3.1416 x length in feet ** One Square = one hundred square feet = 9.29 square meters	
Square meters of coating required	$\frac{(\text{width of coating in mm}) \times (\text{area of pipe in square meter})^*}{(\text{width of coating in mm} - \text{overlap in mm})}$
* Area of pipe in m ² = (diameter in mm / 1000) x 3.1416 x length in meter	
Squares** per roll	$\frac{(\text{width of roll in inches}) \times (\text{length of roll in feet})}{(12) \times (100)}$
Square meters Per roll	$\frac{(\text{width of roll in mm}) \times (\text{length of roll in m})}{(304.8) \times (30.48)}$
Rolls Required	$\frac{(\text{squares of coating required})}{(\text{squares per roll})}$
Rolls Required	$\frac{(\text{square meters of coating required})}{(\text{square meters per roll})}$

Application instruction: Job preparation	
Tools, equipment and auxiliaries	Temperature gauge, DFT/WFT gauge Primer application equipment/agitator, Tape application equipment, Coating "hot box"
High humidity	Polyken® Synergy can be applied in a humid atmosphere. The substrate should be free from condensing water which can be reached by keeping the temperature at least 5°F (3°C) above dew point.
Work area and substrate	The substrate surface should be dry, clean and protected against negative weather influences.
Product conditions	The Polyken® Synergy coating system shall be stored and/or transported in a dry, ventilated location. Storage temperature shall be a minimum of 60°F (16°C) and a maximum of 120°F (49°C). The minimum primer temperature for application will be 60°F (16°C). The Synergy coating system components, elastomer and polyolefin layer, shall be applied at an elevated roll body temperature between 90°F/32°C and 100°F/38°C.

Application instruction: Surface preparation	
General	The area to be coated has to be clean, dry, and free from oil, grease and dust. All contamination including mill-scale has to be removed.
Degreasing	Degrease surfaces with Toluene or Heptane and e.g. a lint-free cloth.
Preventing condensation of water	Prior to and during the application, the temperature of the substrate(s) must be at least 5°F (3°C) above the dew point.
Substrate temperature	Cleaned pipe shall be preheated such that the pipe temperature at the entrance of the spray booth shall be as follows. (Refer to paragraph 8.0 in the Synergy Application Guideline) 1. Residual heat method: minimum 200°F/93°C maximum 300°F/148°C 2. Two phase heat method: minimum 135°F /57°C/ maximum 200°F/93°C

Application instruction: Brief version	
Step 1	Preheat
Step 2	Clean substrate to SSPC-SP6 /NACE3 or SA 2 (commercial blast) with a 1 – 3 mil anchor profile (25 – 76 micron anchor profile)
Step 3	Application heat (residual or two phase heating methods)
Step 4	Uniform primer application achieving 2 to 3 mil WFT. Primer should be "dry to touch" before application of inner layer.

* For further detailed information, please view the corresponding Application Guideline *

Step 5	Spirally apply the inner layer (3000 anti corrosion) with a 1% to 2% neckdown and no less than a 1" overlap
Step 6	Spirally apply the outer layer (3056 mechanical Protection) with a 1% to 2% neckdown and no less than a 1" overlap.
Step 7	Additional heating if utilizing the two phase heat method.
Step 8	Water quenching
Step 9	Perform holiday detection per NACE RP-02-74

Handling and commissioning	
Exposure to loads	Objects coated with Polyken® Synergy should not be exposed to loads e.g. from supports- or lifting equipment.
Backfill	Backfill is possible immediately after completion of the coating application. Consult application guidelines for specific instructions. Backfill should be clean and not contain any foreign items that can cause damage to the coating system.

Information	
Documentation	Extensive information is available on our website. Application instructions and other documentation can be obtained by contacting our offices, from our local distributor or by sending an email to info@sealforlife.com
Certified staff	Application of the described coating system shall be carried out by certified personnel.



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DISCLAIMER: Seal For Life Industries warrants that the product conforms to its chemical and physical description and is appropriate for the use stated on the technical data sheet when used in compliance with Seal For Life Industries' written instructions. Because many installation factors are beyond the control of Seal For Life Industries, the user shall determine the suitability of the products for the intended uses and assume all risks and liabilities in connection herewith. Seal For Life's liability is stated in its General Terms and Conditions of Sale. Seal For Life Industries makes no other warranty either express or implied. All information contained in this technical data sheet is to be used as a guide and is subject to change without notice. This technical data sheet supersedes all previous data sheets on this product. Seal For Life Industries is a registered marks of the Berry Global Group, Inc. or its affiliates.