Akzo Nobel Powder Coatings GmbH
Functional Powder Coatings

Product Datasheet

Resicoat® R-105 (HEF04R) / RESICOAT RT9000R5 500105 (FBE)
FBE Powder for Pipe Coating

Product Description

Resicoat® R-105 is a Fusion Bonded Epoxy coating designed for use in a single layer pipe system. It has excellent flexibility properties and is typically applied in the thickness range of 575 – 750 µm.

		Typical value	Method
Powder Properties	**Gel time at 200° C** **at 205° C**	25 – 35 sec. 12 – 18 sec.	ISO 8130-6 CSA hot plate
	Specific gravity	1.20 ± 0.05 g/cm³	Air comparison pyknometer
	Particle size distribution	99.8 % < 250 µm (60 mesh)	Alpine Air Jet Sieve
	Theoretical coverage	33 m² per 1 kg at 25 µm (160 square feet per pound at 1 mil) at 100 % application efficiency	
	Color	yellow	
	Storage stability	12 months from delivery date at ≤ 23° C (74° F) and 65 % relative humidity. Cooler temperatures and lower humidity are recommended. Shorter shelf life stability at higher temperatures. Do not exceed 33° C (91° F).	
	MSDS	DE 957	
Application Properties	**Substrate**	Mild steel	
	Surface preparation	Near-White Blast as defined by SSPC SP 10, NACE No. 2, Swedish Sa 2½ or BS Second Quality	
	Required surface roughness	50 – 100 µm	
	Recommended film thickness	575 – 750 µm (23 – 30 mils)	
	Application method	Electrostatic powder spray using a negative charge of 40 – 120 kV	
	Application temperature	230 – 245° C (446 – 473° F)	
	Minimum time before quench at 235° C (455° F)	60 sec.	
Physical Tests	Performance will be influenced by quality of surface preparation, film formation and curing conditions. The following test results are typical for Resicoat® R-105 applied to 575 – 750 µm (23 – 30 mils) on steel panels cleaned to Near-White Blast (without pre-treatment):		
	Gloss 60° angle	85 – 100	DIN 67530
	Hardness	90 –110 H	Buchholz DIN 53153 Pencil
	Impact resistance	11.3 J (100 inch lb) at 10° C (50° F) on steel pipe (4 mm steel)	ASTM G 14
	Tensile strength	approx. 500 kg/cm² (7000 psi)	ASTM D 2370-82
	Elongation	approx. 4 %	ASTM D 2370-82

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RESICOAT®
Experts in Functional Powder Coatings

		Typical value	Method
Physical Tests (continued)	**Bendability**	5° pass at 25° C (77° F) 3° pass at 0° C (32° F) 3° pass at -30° C (-22° F)	
	Abrasion (Taber)	< 200 mg	ASTM D 4060, 1000 g load 5000 cycles, CS 17 wheels
Accelerated Tests	**Cathodic disbonding**		CSA 12.9 Modified ASTM G8
		1 mm	-1.5 VDC, 65° C (150° F), 48 h
			British Gas CW6
		1 mm	-1.5 VDC, 23° C (75° F), 30 d
			Aramco SAMSS-089 / ASTM G 8
		1 mm	-1.5 VDC, 25° C (77° F), 30 d
			Aramco SAMSS-089 / ASTM G 42
		3 – 4 mm	-1.5 VDC, 95° C (203° F), 60 d
	Water immersion	3000 h, no blistering or other failure 4 weeks, no blistering or other failure	ASTM D 870-54, distilled water 38° C (100° F) Tap water, 90° C (194° F)
	Specific coating resistivity	4 x 10^8 Ω x m²	DIN 30671
	Accelerated weathering test combined with hot oil test	no visible cracks, no blistering, no loss of adhesion or other failure after 4000 h	QUV-UVB test conditions at 120° C oil temperature
	Water absorption	< 5 %	ASTM D 570 (% absorption) 4 weeks, 80° C
	Adhesion in distilled water		CSA Z245.20-M92
		rating 1	95° C ± 3° C / 24 h
	Adhesion dry	> 30 MPa	DIN EN 24624
	Dielectric strength	> 30 kV/mm	
	Water diffusion coefficient	5 x 10^{-6} g x cm^{-1} x h^{-1} x bar^{-1}	DIN 53536 (30° C)
	Penetration resistance	< 1 %	ASTM G 17-88 (23° C)

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Disclaimer: This Product Data Sheet is based on the present state of our knowledge and on current laws. The data referring to Powder Properties, Application Data and Physical Tests is based on lab based samples. Factors such as quality or condition of the substrate may have an effect on the use and application of the product. It remains the responsibility of the user to test thoroughly if the product is applicable for the intended use. The use of the product beyond our recommendation releases us from our responsibility, unless we have recommended the specific use in writing. It is always the responsibility of the user to take all necessary steps to fulfil the demands set out in the local rules and legislation. We are not liable for any application-technological advice. The Product Data Sheet shall be updated from time to time. Please ensure you have the latest version before using the product. All products and Product Data Sheets are subject to our standard terms and conditions of sale (GCS). You can receive the latest copy of GCS via internet or our post address. Brand names mentioned in this Product Data Sheet are trademarks of or are licensed to the AkzoNobel group.