Industrial coating
Anti-corrosion 2K epoxy primer, water-based, gray
Deutsche Bahn, high requirements to mechanical flexibility, adhesion and corrosion protection
Free of active anti-corrosion pigments or inhibitors, fast drying and sandability

Basis Epoxy resin (solid epoxy resin and hydrophobic amine)

			Basis Allnex REC 19011 with talc and barite		
	L 00040.3		[1]	[3]	[9]
Component A	*-- part 1 --*				
	Demineralized water		11.94	11.94	11.94
	Additol VXW 6208	(1)	3.52	3.52	3.52
	Additol VXW 6393	(1)	0.16	0.16	0.16
	Texanol	(2)	0.64	0.64	0.64
	-- part 2 --				
	Talc		9.06	---	---
	Barite		24.62	13.00	13.00
	AKTISIL AM	(3)	---	15.37	---
	SILLITIN V 85	(3)	---	---	15.37
	Kronos 2190	(4)	21.85	21.85	21.85
	Bayferrox 3920	(5)	0.43	0.43	0.43
	Bayferrox 306	(5)	1.17	1.17	1.17
	-- part 3 --				
	Additol VXW 6388	(1)	0.64	0.64	0.64
	Methoxypropanol		1.07	1.07	1.07
	-- part 4 --				
	Beckocure EH 2261w/41WA	(1)	24.90	24.90	24.90
	Total parts by weight		100.00	94.69	94.69
Component B	Beckopox EP 387w/52WA	(1)	49.80	49.80	49.80

Recommended Base formulation with very good corrosion protection and outstanding substrate adhesion
[3] additionally optimized storage stability and sedimentation stability
[9] additionally optimized cupping for maximum mechanical flexibility

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	L 00040.3	[1]	[3]	[9]

Preparation

Komponente A

- mix raw materials from part 1
- stir in raw materials from part 2 in the indicated order and disperse by dissolver with toothed disc to a particle size of 20 µm
- successively add the raw materials from parts 3 and 4 for completion

Application

- mix component A and B shortly before application
- dilute with water to spray viscosity
- air spray gun, 2 bar, nozzle 2 mm
- dry film thickness: ≈ 95 µm, single- layer

Drying

- pendulum hardness, cross-cut test, cupping: 7 days @ standard climate 23/50; or as indicated
- humidity test, cyclic corrosion test: 14 days @ standard climate 23/50

Suppliers

(1) Allnex
(2) Eastman Chemical Company
(3) HOFFMANN MINERAL
(4) Kronos International
(5) Lanxess

More information on this topic:

Neuburg Siliceous Earth in water-based corrosion protection - 2C epoxy primer grey for trains

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	L 00040.3			Basis with talc and barite [1]	[3]	[9]	
Technical Data	* = compliant according to Deutsche Bahn Standard DBS 918300, Anhang B, Blatt 2						**DBS**
	Mixing ratio A : B			2.0 : 1	1.9 : 1	1.9 : 1	
	Crosslinking ratio		%	49	49	49	
	Solids content w/w		%	64.1	62.8	62.8	
	Solids content v/v		%	47.2*	47.2*	47.2*	**≥ 45**
	PVC		%	32.0	32.0	32.0	
Properties	Fineness of grind after 30 min with toothed disc @ 8 m/s		µm	10-15*	10-15*	15-20*	**≤ 35**
	Component A, storage 28 days @ 40 °C						
	Separation stability			poor	very good	good	
	Sedimentation stability			sediment	very good	very good	
	Dyn. viscosity A+B, @ 23 °C	0.1 s^{-1}	Pa·s	57.8	75.5	97.3	
		1000 s^{-1}	Pa·s	0.46	0.48	0.48	
	Substrate: cold-rolled steel Q-Panel Type R-48						
	Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
	+ 7 d @ 50 °C convection				all: ≤ 1		
	Substrate: slightly sanded deep drawing steel DC04						
	Pendelum hardness Koenig		s	46	49	43	
	+ 7 d @ 50 °C convection		s	95	104	94	
	Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
	+ 7 d @ 50 °C convection				all: ≤ 1		
	Cupping test Erichsen		mm	2.9	3.6	5.4*	**≥ 4**
	+ 7 d @ 50 °C convection		mm	1.5	3.4	4.6	
	480 h Humidity test DIN EN ISO 6270-2						
	Degree of blistering	DIN EN ISO 4628-2			all: 0 (S0)		
	Degree of rusting	DIN EN ISO 4628-3			all: Ri 0		
	Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)		
	Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)		
	Cross-cut test 2 mm, tape tear-off, after 0 h				all: ≤ 1		
	Cross-cut test 2 mm, tape tear-off, after 24 h				all: ≤ 1		

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L 00040.3			Basis with talc and barite [1]	[3]	[9]	
Substrate: blasted steel, preparation level Sa 2 ½, roughness „fine (G)“						**DBS**
Cross-cut test 2 mm, tape tear-off				all: ≤ 1*		**≤ 1**
+ 7 d @ 50 °C convection				all: ≤ 1*		**≤ 1**
Cupping test Erichsen		mm	2.3	2.8	4.2	
+ 7 d @ 50 °C convection		mm	1.3	2.2	3.3	
Sandability with eccentric sander a.) drying ≤ 16 h @ standard climate 23/50 b.) 15 min flash-off + 2 h @ 40 °C convection			all: very good* sandable without heavy smearing and quick clogging of the sandpaper			
480 h Humidity test DIN EN ISO 6270-2						
Degree of blistering	DIN EN ISO 4628-2			all: 0 (S0)*		**0 (S0)**
Degree of rusting	DIN EN ISO 4628-3			all: Ri 0		
Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)		
Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)		
Cross-cut test 2 mm, tape tear-off, after 0 h				all: ≤ 1		
Cross-cut test 2 mm, tape tear-off, after 24 h				all: ≤ 1*		**≤ 1**
same result also after 1000 h humidity test						
672 h Cyclic corrosion test = 4 cycles, DIN EN ISO 11997-1 cycle B						
immediately after the last humidity phase:						
Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
Degree of blistering	DIN EN ISO 4628-2			all: 0 (S0)*		**0 (S0)**
after 48 h storage @ standard climate = end of cycle (end of test)						
Degree of rusting	DIN EN ISO 4628-3			all: Ri 0*		**Ri 0**
Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)*		**0 (S0)**
Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)*		**0 (S0)**
Delamination / corrosion at scribe Sikkens 1 mm	DIN EN ISO 4628-8			all: 1.7 mm*		**≤ 2**
Cross-cut test 2 mm, tape tear-off, after 0 h				all: ≤ 1*		**≤ 1**
1680 h Cyclic corrosion test = 10 cycles						
immediately after the last humidity phase:						
Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
Degree of blistering	DIN EN ISO 4628-2			all: ≤ 2 (S2)		
after 48 h storage @ standard climate = end of						
Degree of rusting	DIN EN ISO 4628-3			all: at most punctual		
Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)		
Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)		
Delamination / corrosion at scribe Sikkens 1 mm	DIN EN ISO 4628-8			all: 3.2 mm		
Cross-cut test 2 mm, tape tear-off, after 0 h				all: ≤ 1		

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L 00040.3			Basis with talc and barite [1]	[3]	[9]	
Substrate: blasted aluminum Type AlMg2Mn0.8						**DBS**
Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
+ 7 d @ 50 °C convection				al: ≤ 1		
Cupping test Erichsen		mm	1.4	1.5	2.8	
+ 7 d @ 50 °C convection		mm	1.1	1.3	2.1	
480 h Humidity test						
Degree of blistering	DIN EN ISO 4628-2			all: 0 (S0)*		**0 (S0)**
Degree of rusting	DIN EN ISO 4628-3			all: Ri 0		
Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)		
Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)		
Cross-cut test 2 mm, tape tear-off, after 0 h				all: ≤ 1		
Cross-cut test 2 mm, tape tear-off, after 24 h				all: ≤ 1*		**≤ 1**
same result also after 1000 h humidity test						
672 h Cyclic corrosion test = 4 cycles						
immediately after the last humidity phase:						
Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
Degree of blistering	DIN EN ISO 4628-2			all: 0 (S0)*		**0 (S0)**
after 48 h storage @ standard climate = end of						
Degree of rusting	DIN EN ISO 4628-3			all: Ri 0*		**Ri 0**
Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)*		**0 (S0)**
Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)*		**0 (S0)**
Delamination / corrosion at scribe Sikkens 1 mm	DIN EN ISO 4628-8			all: none*		**≤ 2**
Cross-cut test 2 mm, tape tear-off				all: ≤ 1*		**≤ 1**
1680 h Cyclic corrosion test = 10 cycles						
immediately after the last humidity phase:						
Cross-cut test 2 mm, tape tear-off				all: ≤ 1		
Degree of blistering	DIN EN ISO 4628-2			all: ≤ 1 (S2)		
after 48 h storage @ standard climate = end of						
Degree of rusting	DIN EN ISO 4628-3			all: Ri 0		
Degree of cracking	DIN EN ISO 4628-4			all: 0 (S0)		
Degree of flaking	DIN EN ISO 4628-5			all: 0 (S0)		
Delamination / corrosion at scribe Sikkens 1 mm	DIN EN ISO 4628-8			all: none		
Cross-cut test 2 mm, tape tear-off				all: ≤ 1		

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