

NEUBURG SILICEOUS EARTH IN WATER-BASED CORROSION PROTECTION ACRYLATE SINGLE-LAYER WHITE

OBJECTIVE

Improvement of anti-corrosion properties

Fine Ground
Calcium Carbonate



Neuburg Siliceous Earth:
Sillitin Z 89
Aktifit Q

FORMULATION

Pigment Preparation	Water demineralised		5.90	
	Edaplan 490	dispersing agent	1.20	
	AMP 90	neutralizing agent	0.02	
	Byk 024	defoamer	0.10	
	Byk 349	wetting agent	0.18	
	Kronos 2190	pigment	17.70	
	Filler		7.50	
	Water demineralized		2.90	
Let Down	Alberdingk AC 2403	acrylic dispersion	57.90	
	Byk 024	defoamer	0.15	
	premix	Asconium 142DA	corrosion inhibitor	1.90
		AMP 90	neutralizing agent	0.15
		Water demineralized		1.90
	Optifilm Enhancer 300	co-solvent	1.50	
	Ascotran H10	flash rust inhibitor	0.50	
Tafigel PUR 60 solution (10 % PUR 60; 20 % Dowanol DPM; 70 % Water)	rheology modifier	0.50		
Total [%]			100.00	
Solids content w/w [%]			56	
PVC [%]			21	

Basis: Guide formulation FP 2403-44 by Alberdingk Boley

Preparation: dissolver with toothed disc

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RESULTS

Cold rolled steel Q-Panel R 48, spray application, total dry film thickness 70 µm as single-layer, drying 28 d 23 °C / 50 % RH

	Calcium Carbonate		Sillitin Z 89		Aktifit Q	
Humidity test 1000 h	 cross-cut: GT 1-2 (24 h)	 stripped incipient under-film corrosion	 cross-cut: GT 0-1 (24 h)	 stripped	 cross-cut: GT 0-1 (24 h)	 stripped
Salt spray test 1000 h						
	delamination: rust creep:	26.3 mm 1.4 mm	delamination: rust creep:	17.9 mm 0.7 mm	delamination: rust creep:	4.8 mm 0.6 mm

SUMMARY

Retained Features

- Low viscosity
- Color neutrality
- Semi gloss appearance
- Adhesion before: Cross-cut test all GT 0
- Humidity test result 1000 h: no blistering
- Salt spray test results, non-scribed area 1000 h: good adhesion, no blistering or corrosion

Improved Features

- Humidity test results 1000 h:
 - ✓ Better adhesion
 - ✓ No under-film corrosion
- Salt spray test results at scribe 1000 h:
 - ✓ Less to no blistering
 - ✓ Significantly decreased delamination width
 - ✓ Less corrosion / less rust creep

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