

NEUBURG SILICEOUS EARTH IN COIL COATING PRIMER POLYESTER-BASED

OBJECTIVE

How can Sillitin Z 89 and Aktifit AM reduce Talc and Corrosion Protection Pigment?

Substitution of
50 % Corrosion
Protection Pigment
and 100 % Talc



Neuburg Siliceous Earth:
Sillitin Z 89
Aktifit AM

FORMULATION

		Control *	Sillitin Z 89	Aktifit AM
A-component (grinding stage)	Dynapol LH 820-16	36.0	36.0	36.0
	Aerosil 200	0.2	0.2	0.2
	Kronos 2059	6.6	6.6	6.6
	Talkum 10 M0	5.7	-	-
	Heucophos SAPP	9.5	4.75	4.75
	Sillitin Z 89	-	10.45	-
	Aktifit AM	-	-	10.45
	MPA	13.5	13.5	13.5
B-component (let-down stage)	Dynapol LH 820-16	1.9	1.9	1.9
	Epikote 1004 (50% in MPA)	5.7	5.7	5.7
	Catalyst C 31	1.4	1.4	1.4
	Vestanat Hardener EP B 1481	5.7	5.7	5.7
	Resiflow FL 2 (10% in Solvesso 150)	2.8	2.8	2.8
	Nacure x 49-110 (5% in IPA)	1.0	1.0	1.0
	Cymel 202	2.4	2.4	2.4
	Solvesso 150	7.6	7.6	7.6
Total		100	100	100
	PVC	20.1	20.8	20.8

* Base formulation by Evonik Degussa

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RESULTS

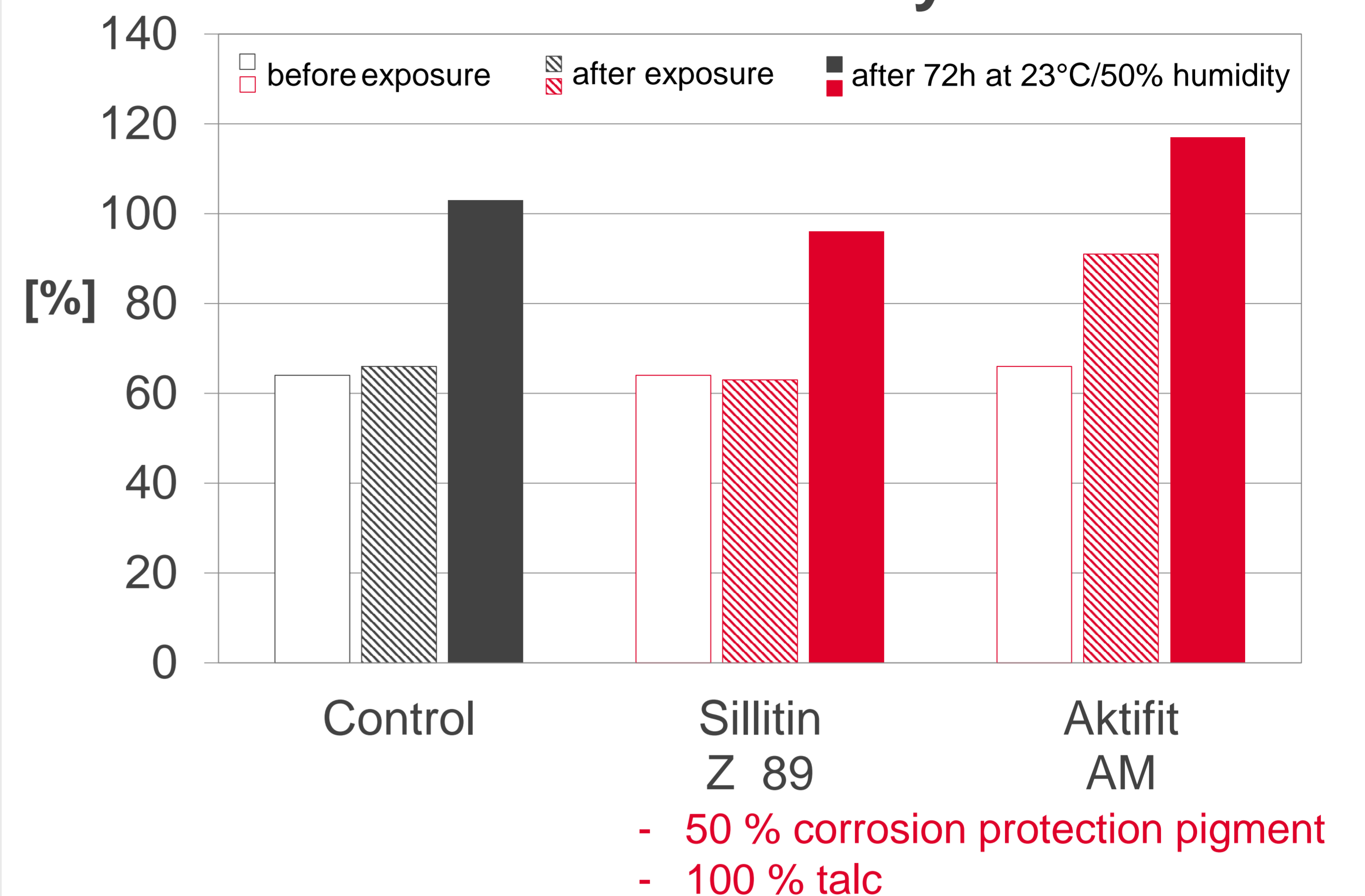
Humidity Test 1000 hours DIN EN ISO 6270-2

Evaluation of degradation according to DIN EN ISO 4628/1-8:

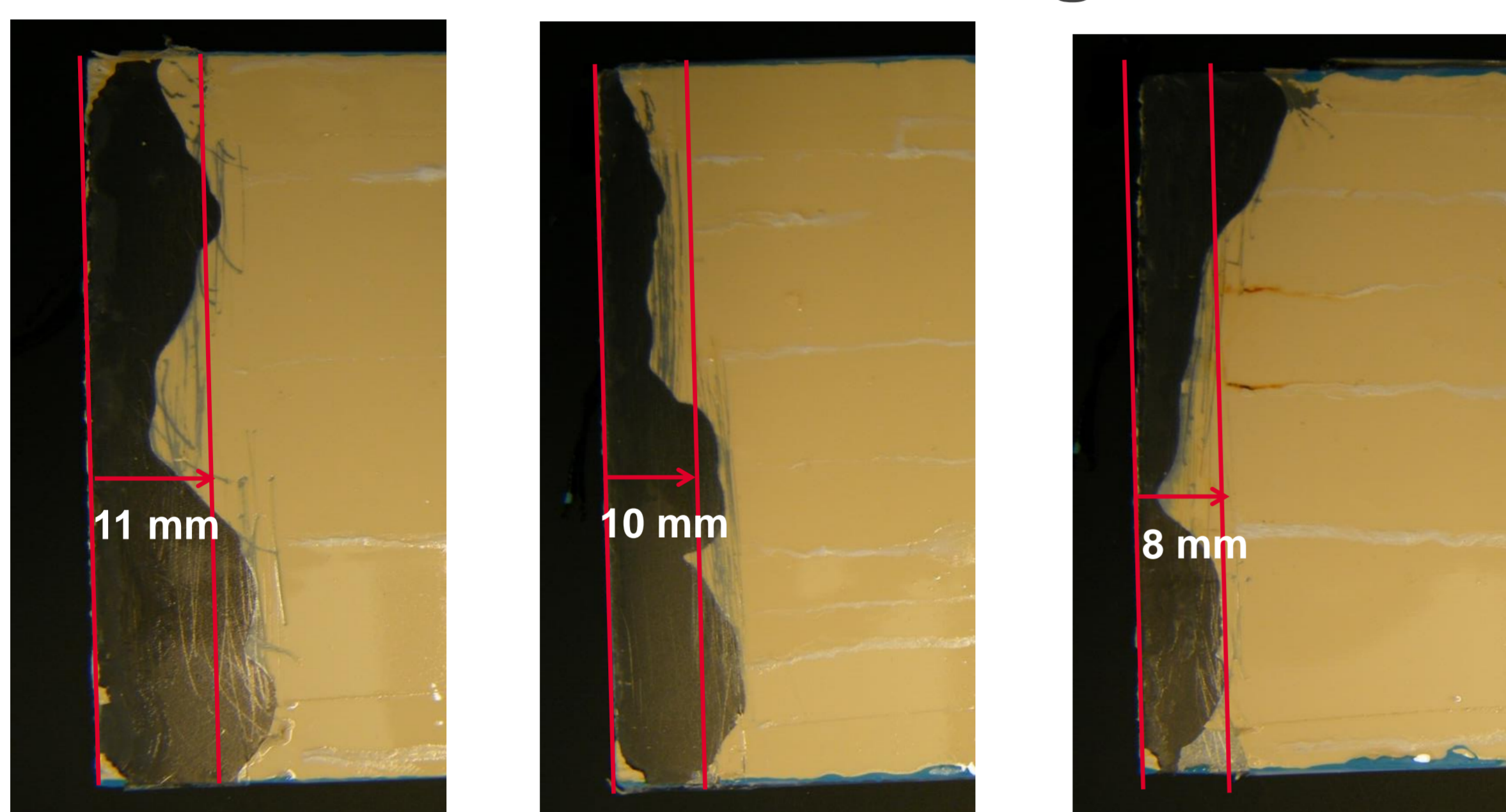
No visible defects, no blistering on the surface or scribe, no rust at scribe, no delamination, no corrosion

After conditioning 2-3d at 23°C and 50% humidity:
Cross Cut Test 1mm acc. to DIN EN ISO 2409 GT 0
Cupping Test acc. to DIN EN ISO 1520 9-10 mm

Remaining Pendulum Hardness after 1000h Humidity Test



Salt Spray Test 1000 hours DIN EN ISO 9227 Delamination at cutted edge



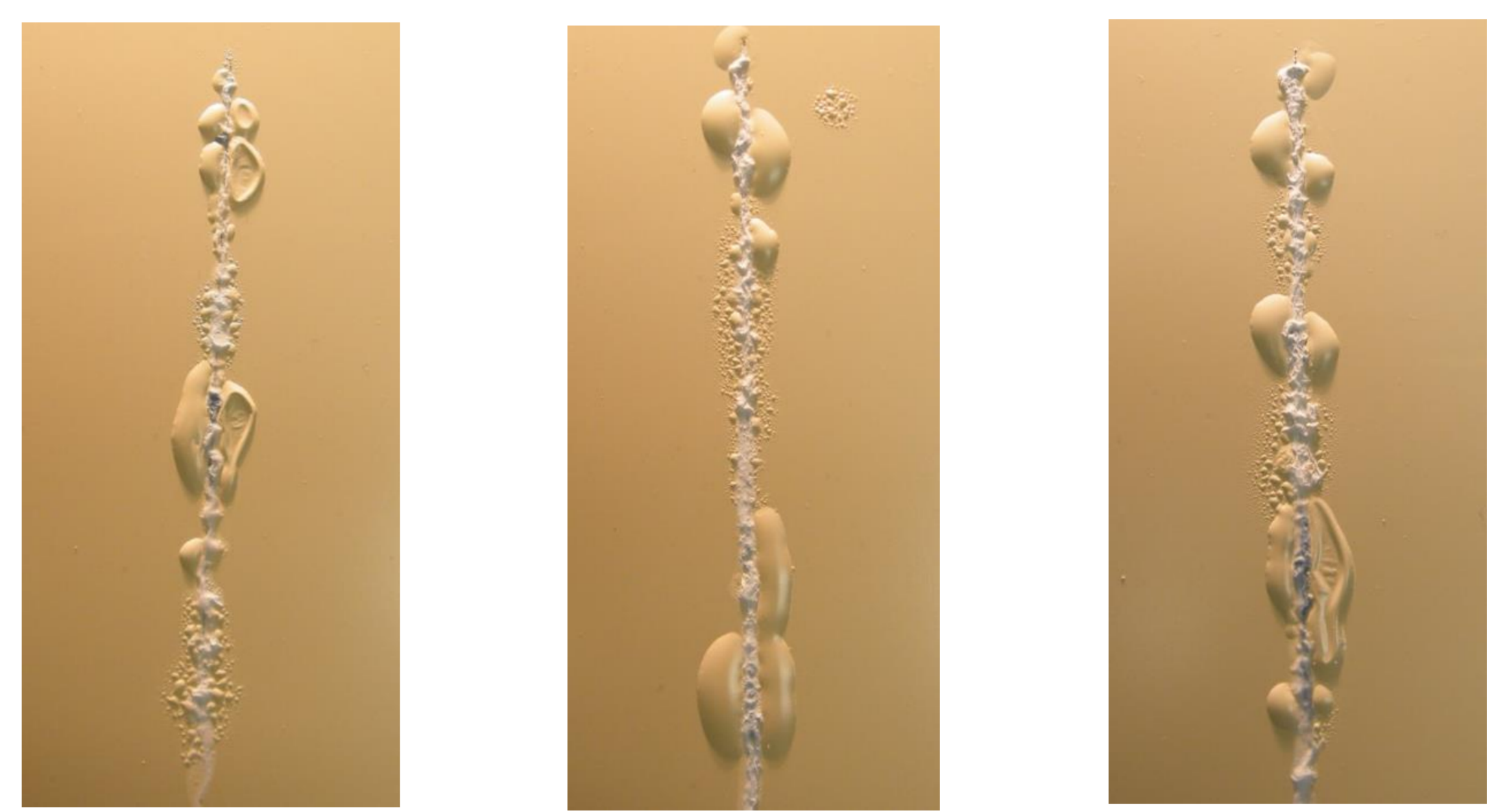
Control

Sillitin Z 89

Aktifit AM

- 50 % corrosion protection pigment
- 100 % talc

Salt Spray Test 1000 hours DIN EN ISO 9227 Blistering at scribe



Control

Sillitin Z 89

Aktifit AM

- 50 % corrosion protection pigment
- 100 % talc

Substrate: hot dip galvanized steel plates with Bonder 1303, DFT 5 µm
+ Top coat from the company Akzo (PE-340-2027), DFT 20 µm

SUMMARY

Replacing 50%* corrosion protection pigment and 100% talc by **Sillitin Z 89** or **Aktifit AM** lead to the following effects:

- the optical and mechanical properties remain unchanged
- excellent adhesion before and after exposure
- insure good corrosion protection

Sillitin Z 89 is recommended for cost-efficient/low-cost formulations

Aktifit AM is recommended because of its easy dispersing and the better performance in anti-corrosion properties.

* Dependent on the formulation and the substrate it is advised to adjust the loading of the corrosion protection pigment for example to 30%.