


NEUBURG SILICEOUS EARTH IN ARCHITECTURAL EXTERIOR EMULSION PAINT

Styrene Acrylic / PVC 50 % / TiO₂ 19 %

TiO₂ Extension: Silfit Z 91 vs. Na/Al Silicate

FORMULATION

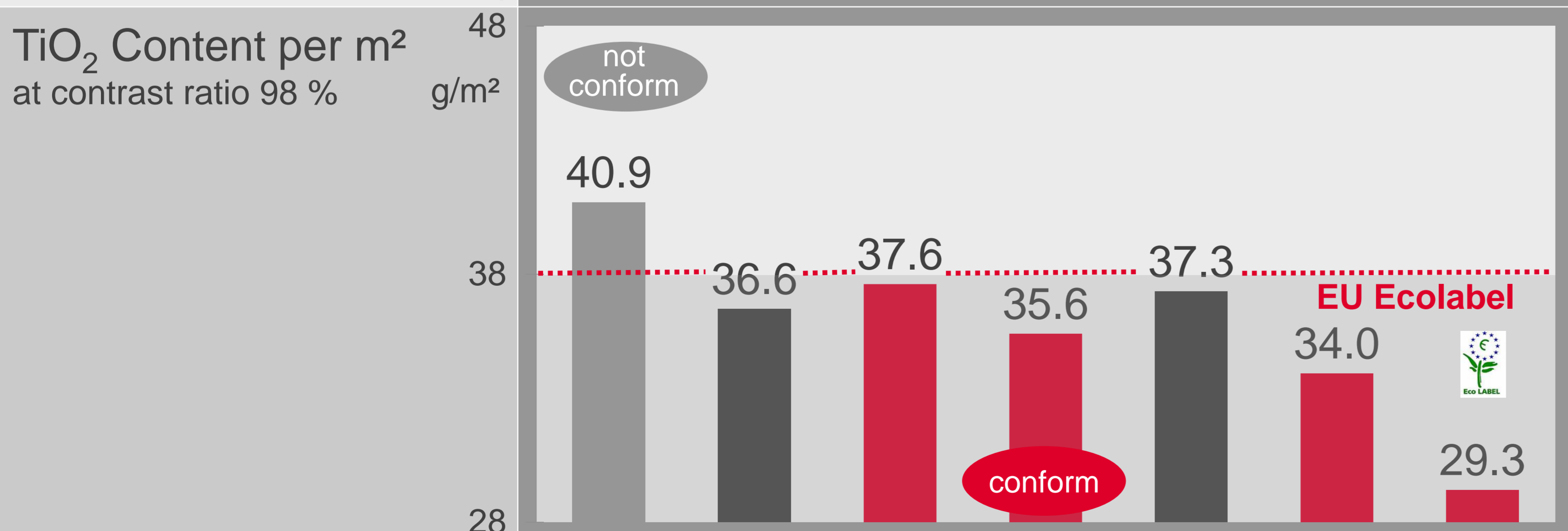
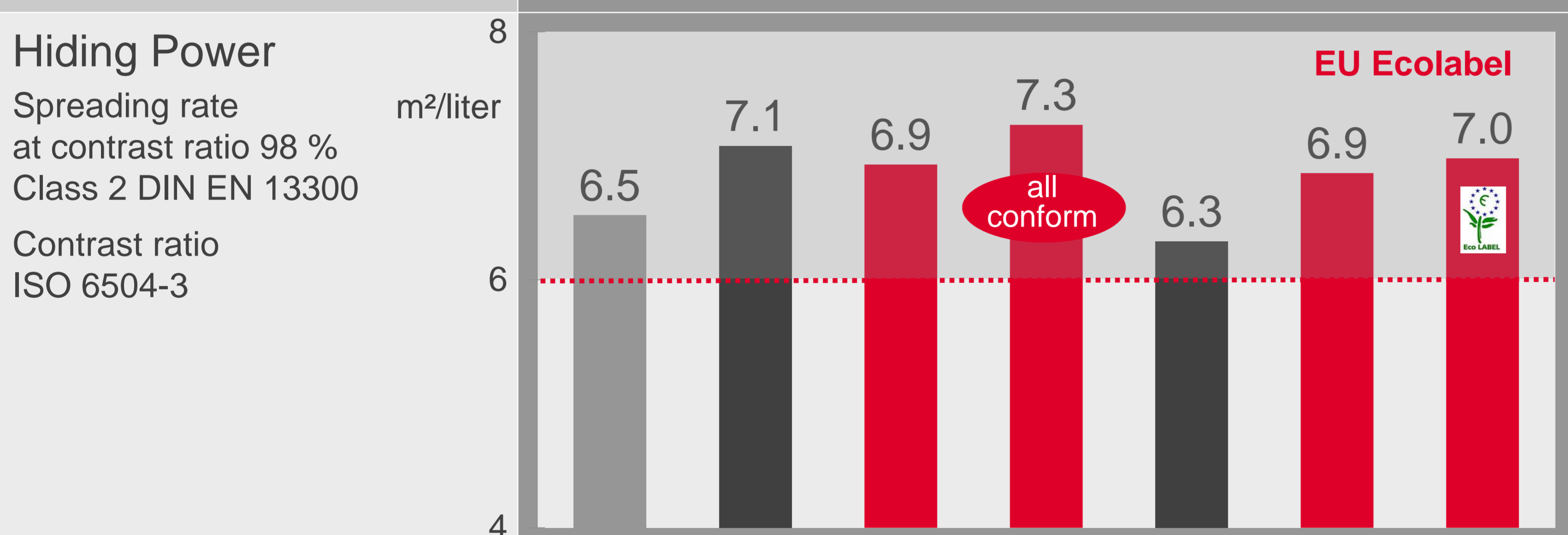
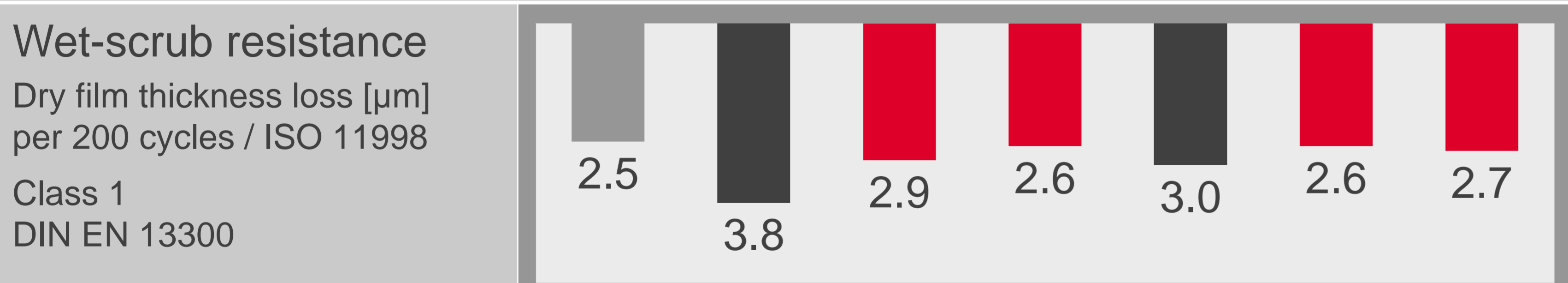
* Base formulation by BASF		Control*	Added TiO ₂ Extender			
			Full TiO ₂	- 10 % TiO ₂	- 20 % TiO ₂	
Water deionized		192				
Additives		38				
Cosolvents		30				
TiO ₂		190	190	171	152	
Precipitated Na/Al Silicate	BET 95 m ² /g		40	40		
Silfit Z 91			40	60	60	100
GCC	5 μm	220				
Talc	5 μm	50				
Acronal S 790		320				
Total parts by weight		1040				
Solids content w/w [%]		61.0				

COST / PERFORMANCE

		Germany 2019 at contrast ratio 98 %					
	Change vs. Control [%]	+ 8.6	+ 6.2	+ 11.1	- 3.2	+ 5.1	+ 7.0
Spreading rate / liter							
Raw material cost / liter		+ 0.8	+ 0.5	+ 0.7	- 2.4	- 2.5	- 5.1
Total efficiency		+ 7.8	+ 5.7	+ 10.4	- 0.8	+ 7.6	+ 12.1

IMPROVED FEATURES

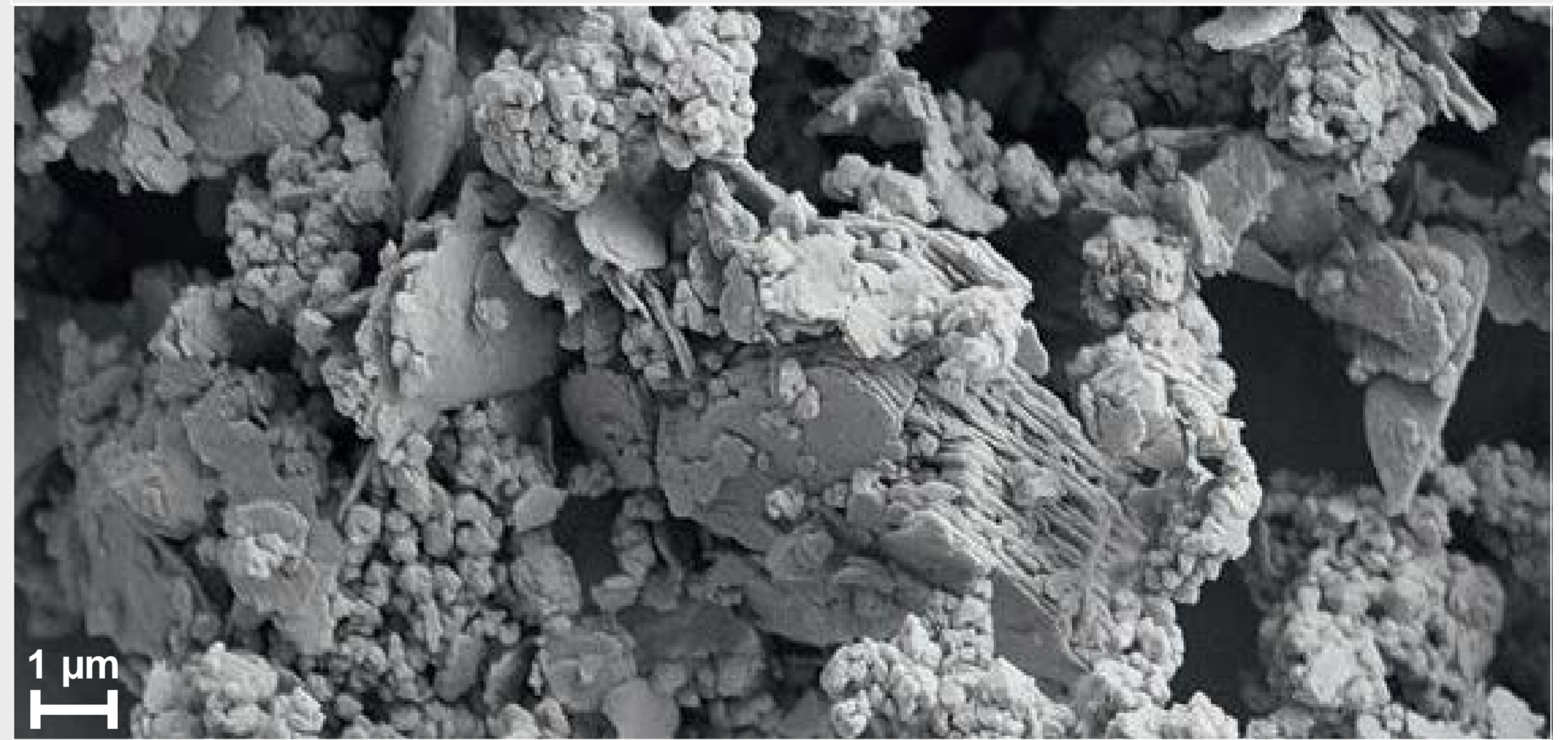
Undiluted formulations / drying time before testing: 28 days / 23°C / 50 % relative humidity



RETAINED FEATURES

Without significant difference or minor effects:

- Preparation
Dissolver equipped with toothed disc (Cowles blade)
Dispersing 15 m/s for 20 min, water cooling, T max. 50°C
- Viscosity
at low shear 0.1 s⁻¹ 40 – 60 Pa*s
at high shear 1000 s⁻¹ 0.3 – 0.4 Pa*s (Searle, 23°C)
- Storage stability
no phase separation, settling or sediment (after 6 months, 23°C)
- Color
- Low gloss
- Water vapor permeability
at DFT 160 μm ~ 400 ml/m² / DIN EN 1062-3
Class V₂ Medium DIN EN 1062-1
- Liquid water permeability
at DFT 160 μm ~ 400 ml/m² / DIN EN 1062-3
Class W₃ Low DIN EN 1062-1



SUMMARY

Silfit Z 91 gains the following combined benefits

- ✓ improved wet-scrub resistance compared to Na/Al Silicate
- ✓ higher hiding power / spreading rates at lower formulation cost
- ✓ TiO₂ reduction and white pigment saving without losing performance
- ✓ real cost cutting potential
- ✓ paint compliant to EU Ecolabel requirements for spreading rate and clearly below limits for white pigments