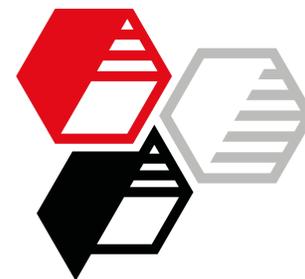


Neuburg Siliceous Earth in water-based corrosion protection DTM acrylate single-layer white / Covestro base



Objective

Improvement of the corrosion protection by filler as a partial replacement of titanium dioxide while maintaining the optical properties, preferably without an anti-corrosion pigment.

Talc

Barium sulfate ppt

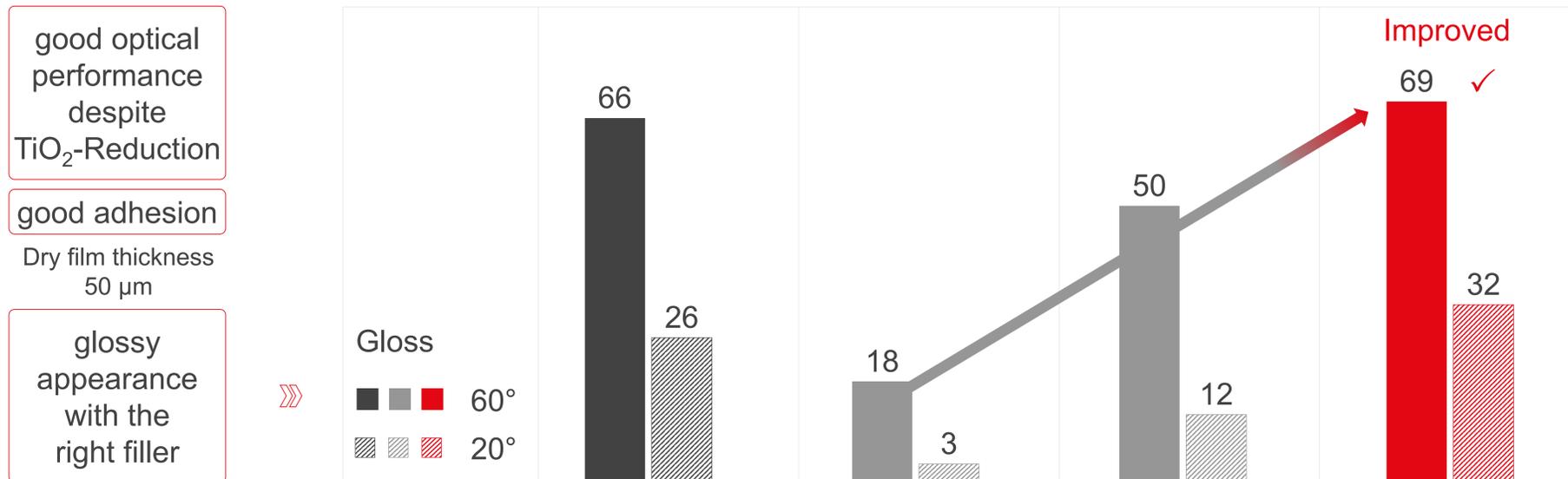


Neuburg Siliceous Earth:
TP 2022060

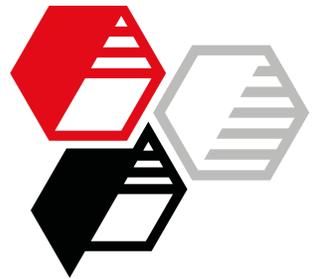
Formulation

		No filler = Control	Talc	Barium sulfate ppt	TP 2022060
Pigment Preparation	NeoCryl XK-85	18.55			
	Water deionized	2.52			
	AMP-95	0.20			
	Acrysol RM 8 WE (1:6 in H ₂ O)	0.54			
	Disperbyk 190 BF	1.05			
	Byk 024	0.13			
	Surfynol 104E	0.33			
	Kronos 2310	18.60 »»	9.80	9.80	9.80
	Nubirox 302	2.79	2.79	2.79 »»	
	Talc		7.23		
Barium sulfate ppt			10.78		
Neuburg Siliceous Earth				8.85	
Let Down	NeoCryl XK-85	49.53			
	Dowanol DPnB	3.32			
	Nalzin FA-179	0.33			
	Acrysol RM 8 WE (1:6 in H ₂ O)	1.11			
	Total	100.00	97.43	100.98	96.26
Solids content w/w [%]		50.7	49.4	51.2	48.8
Constant PVC [%]		19.1			

Results

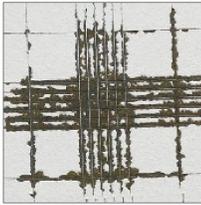
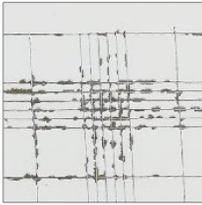
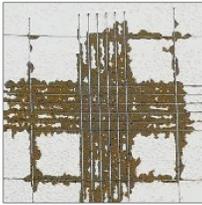
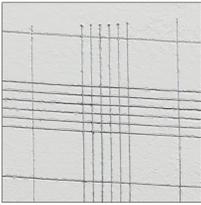
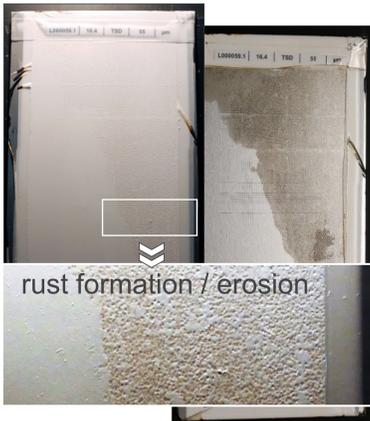
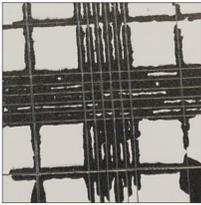
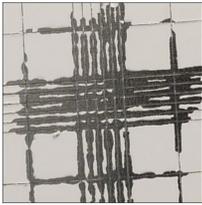
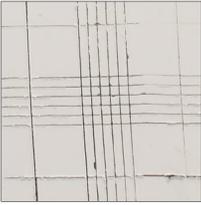
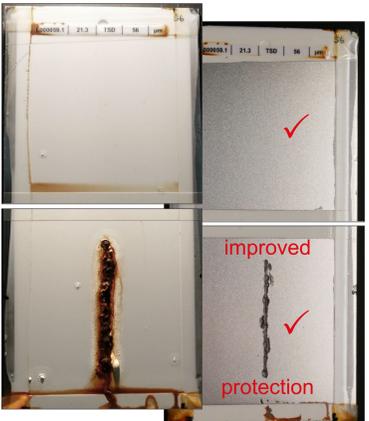


Neuburg Siliceous Earth in water-based corrosion protection DTM acrylate single-layer white / Covestro base



Results

Cold-rolled steel Q-Panel R 48, dry film thickness 50 µm, drying 14 d 23 °C / 50 % RH

	No filler	Talc	Barium sulfate ppt	TP 2022060
Humidity test 650 h	 cross-cut GT 5 (24 h)	 GT 3	 GT 5	 GT 0 ✓
	 Paint stripped Detail paint swelling / erosion	 strong blistering	 rust formation / erosion	 only slight blistering corrosion-free Barrier effect → extended protection
Salt spray test 650 h	 cross-cut GT 5 (0 h)	 GT 3	 GT 5	 GT 0-1 ✓
	 paint stripped			 improved protection ✓

Summary

Addition of **TP 2022060** instead of 50 % TiO₂ and 100 % anti-corrosion pigment beneficially leads to

- ✓ higher gloss for better optical appearance
- ✓ optimized, excellent adhesion
- ✓ extended corrosion protection due to effective paint barrier effect and improved very good wet and dry adhesion
 - high humidity resistance
 - rust protection at scribe + non-scribed area in salt spray test
- ✓ no need for anti-corrosion pigment
- ✓ significant white pigment replacement
- ✓ synergy with single-layered DTM application



improved technical performance

+



raw material savings
cost savings

=

Potential for higher sustainability and carbon-footprint reduction. ✓