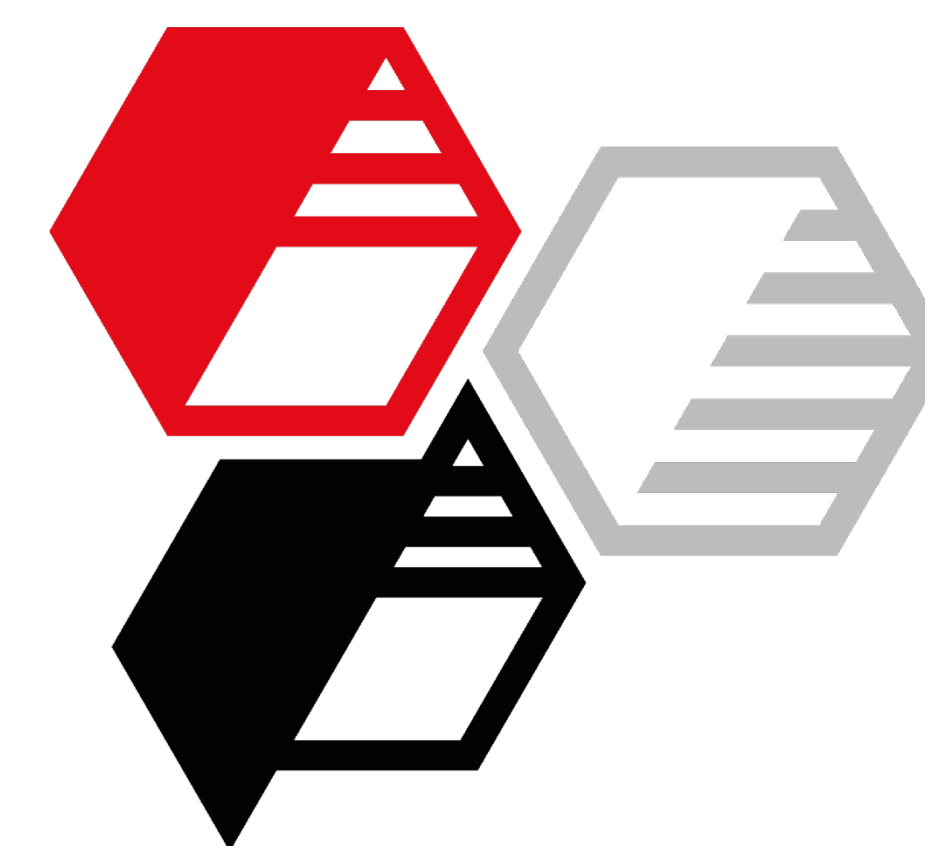


Neuburg Siliceous Earth in water-based corrosion protection DTM acrylate single-layer white / Covestro base

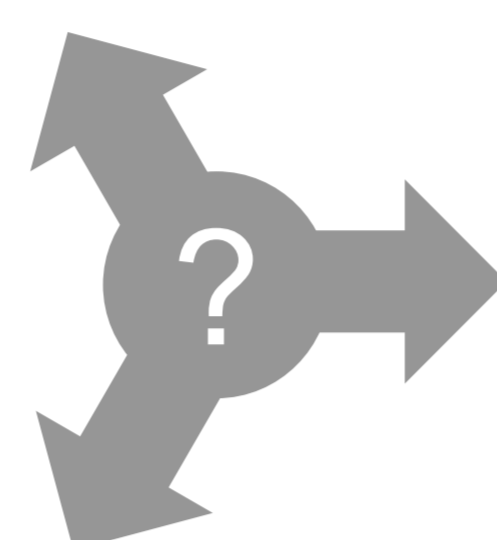


Objective

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

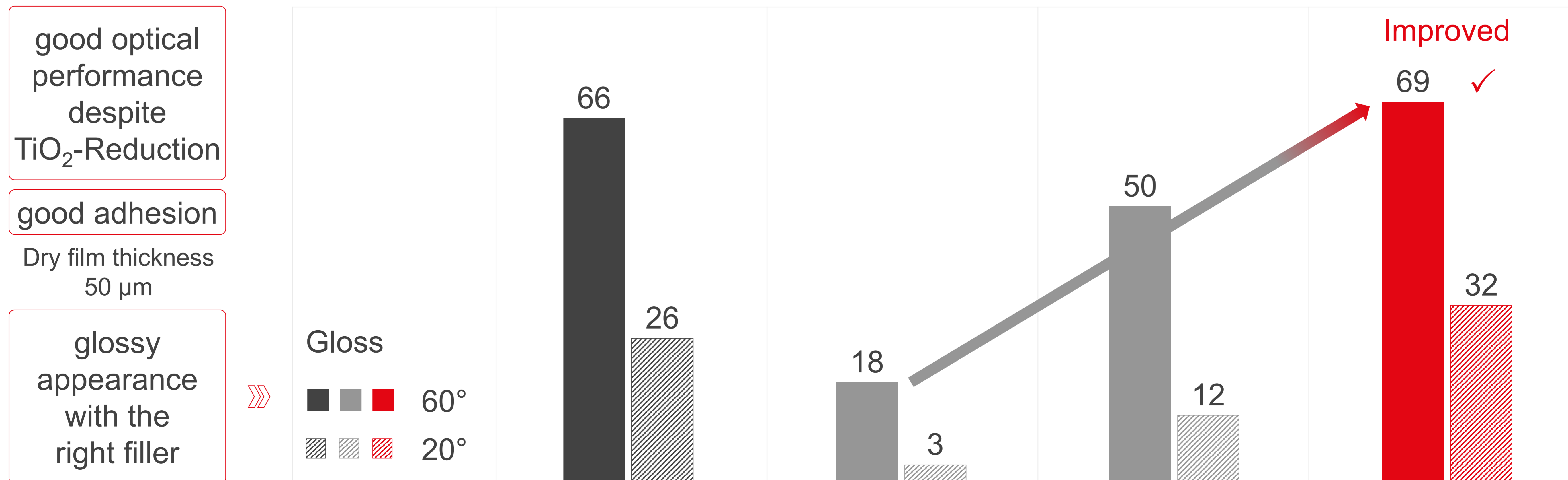


**Neuburg Siliceous Earth:
TP 2022060**

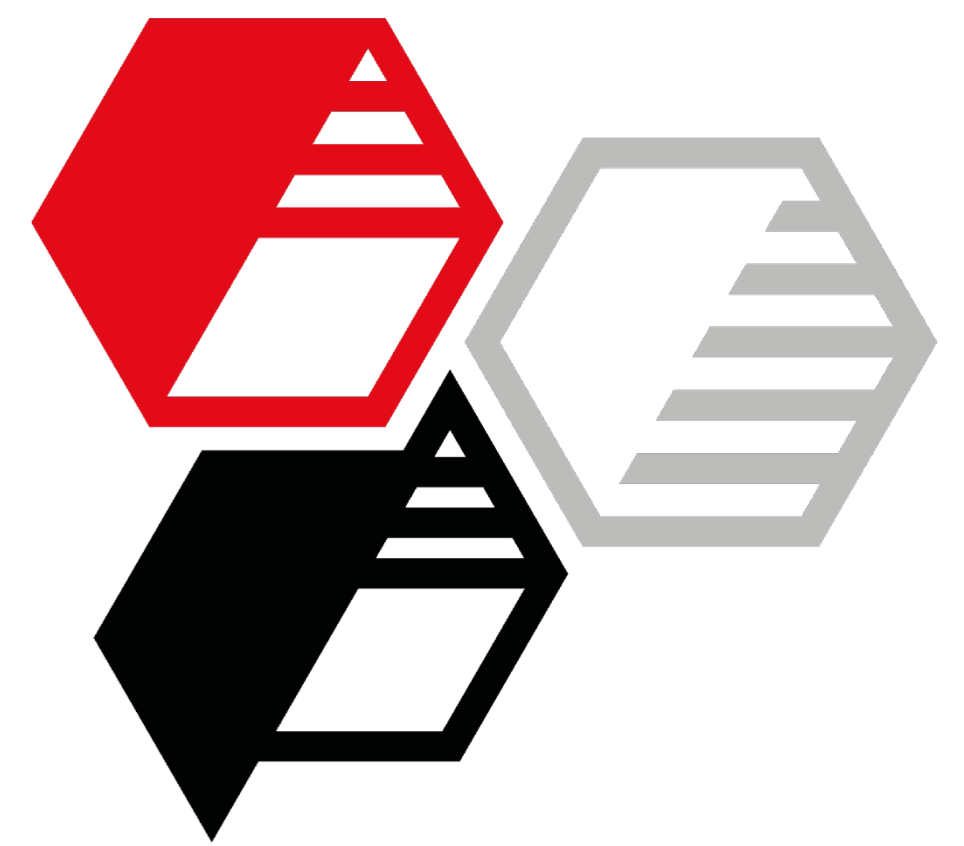
Formulation

		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	<p>cross-cut GT 5 (24 h)</p> <p>Paint stripped</p> <p>Detail paint swelling / erosion</p>	<p>GT 3</p> <p>strong blistering</p>	<p>GT 5</p> <p>rust formation / erosion</p>	<p>GT 0 ✓</p> <p>only slight blistering corrosion-free Barrier effect → extended protection</p>
	Salt spray test 650 h	<p>cross-cut GT 5 (0 h)</p> <p>paint stripped</p>	<p>GT 3</p>	<p>GT 5</p>

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. ✓