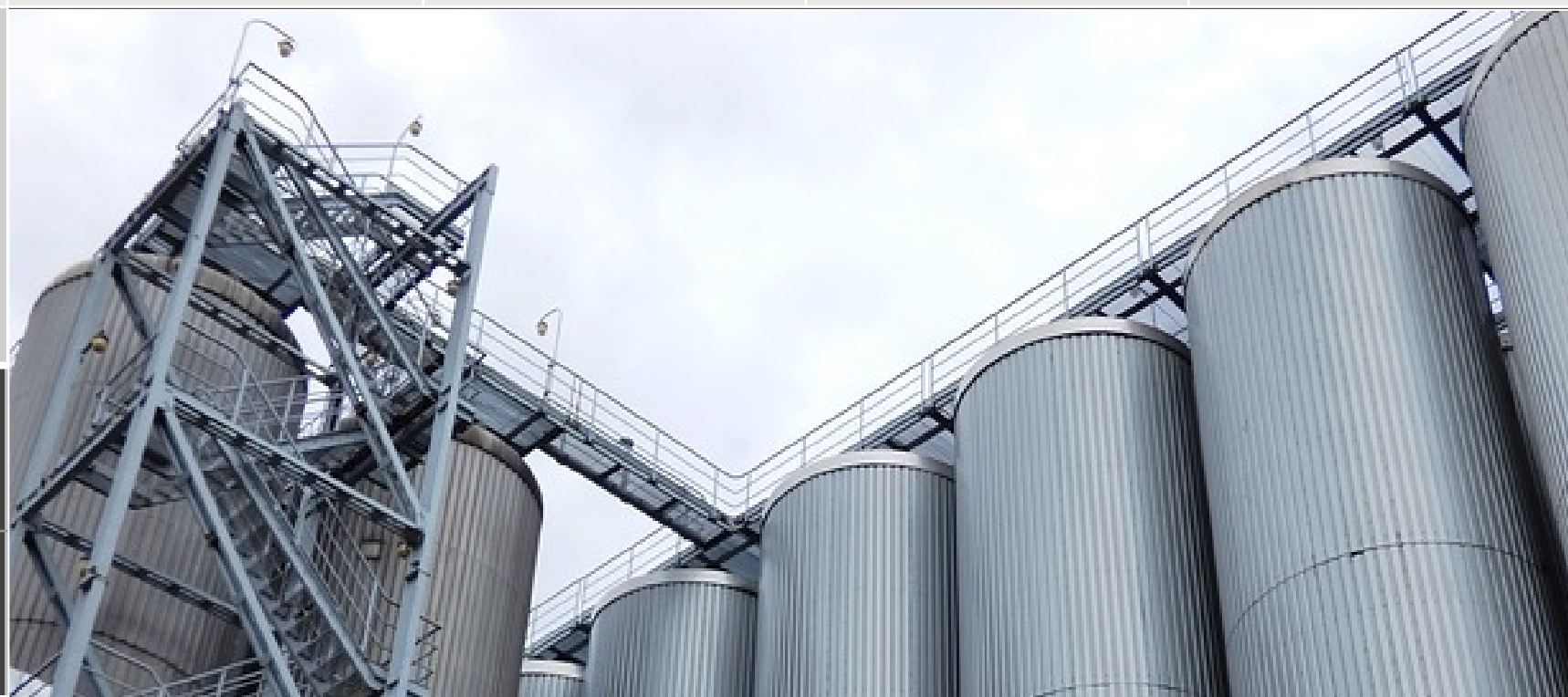


NEUBURG SILICEOUS EARTH IN 2C POLYASPARTIC ANTI-CORROSION COATING, PVC 30 %

SILLITIN Z 86 and AKTISIL PF 777 vs. Classical Fillers

FORMULATION

		Control*	Variation of filler			
Component A	Desmophen NH 1520 Polyaspartic ester, amine-functional resin	13.2	Substitution of Barite by equal volume of			
	Desmophen VP LS 2142 Reactive diluent, blocked cycloaliphatic diamine	4.1				
	Dewatering agent, zeolite	1.8				
	Solvent	7.5				
	Additives	1.5				
	Titanium dioxide	9.4				
	Zinc aluminum phosphate	9.4				
Barite 3 µm	37.9	Barite / Talc**	Wollas- tonite	Sillitin Z 86	Aktisil PF 777	
Filler varied		19.0 / 12.3	25.6	23.4	23.4	
Component B	Desmodur N 3600 Hardener, low viscosity HDI polyisocyanurate	15.2				
Total parts by weight		100.0				
Solids content w/w [%]		92				

* Without rheological additive, based on Covestro formulation / ** Pure talc unfeasible

SUMMARY

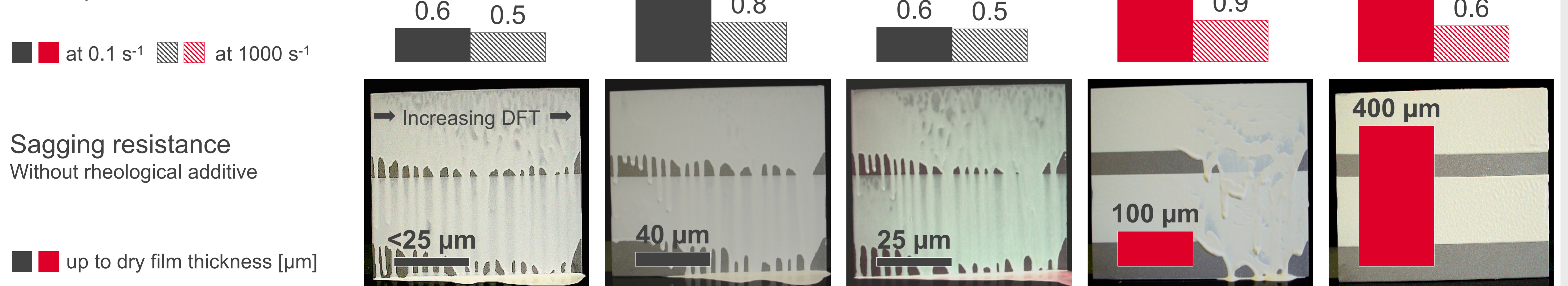
Neuburg Siliceous Earth gains the following combined benefits compared to classical fillers

- ✓ Improved storage stability and application in higher film thickness without rheological additive
- ✓ Strong matting effect; higher gloss feasible with Sillitin V 85, higher brightness with Sillitin Z 89 or Silfit Z 91
- ✓ Better hiding power enabling TiO₂ savings
- ✓ Good abrasion resistance, excellent adhesion
- ✓ Markedly improved corrosion protection:
 - **Sillitin Z 86** with best balanced properties due to reduced corrosion / delamination at scribe and excellent protection & adhesion on unscribed surface, preferably for strong ionic exposure
 - **Aktisil PF 777** offering lowest corrosion at scribe and with almost no delamination distinctly best protective performance for intense humid environment

IMPROVED FEATURES

Processing Properties	Barite	Barite /Talc	Wollastonite	Sillitin Z 86	Aktisil PF 777
Incorporation of filler	good	difficult	good	moderate	moderate
Fineness of grind [µm]	10	15	10	< 10	< 10
Storage Stability Component A, 28 d 50°C	poor	poor	poor	perfect	perfect

Viscosity
Component A+B [Pa*s]
Rheometer 23 °C
Searle system



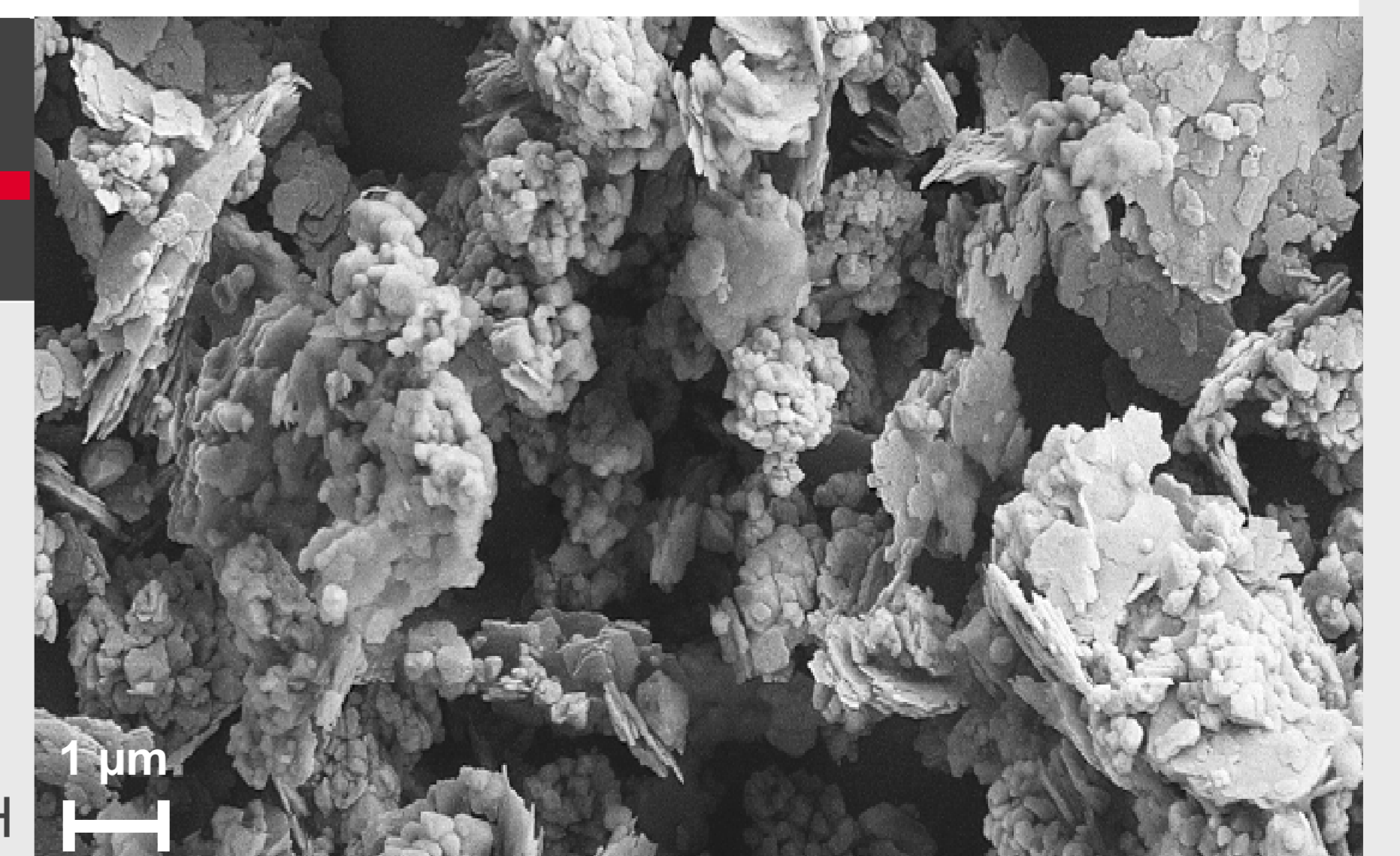
RETAINED FEATURES

Without significant difference or minor effects

- **Drying characteristic**
Drying stage T 4 (DIN 53150) 5 – 6 h
Dry-Through time (similar to ASTM D 5895) 4 h
- **Good Adhesion**
Cross-cut test [GT]: 0 - 1

EXPERIMENTAL

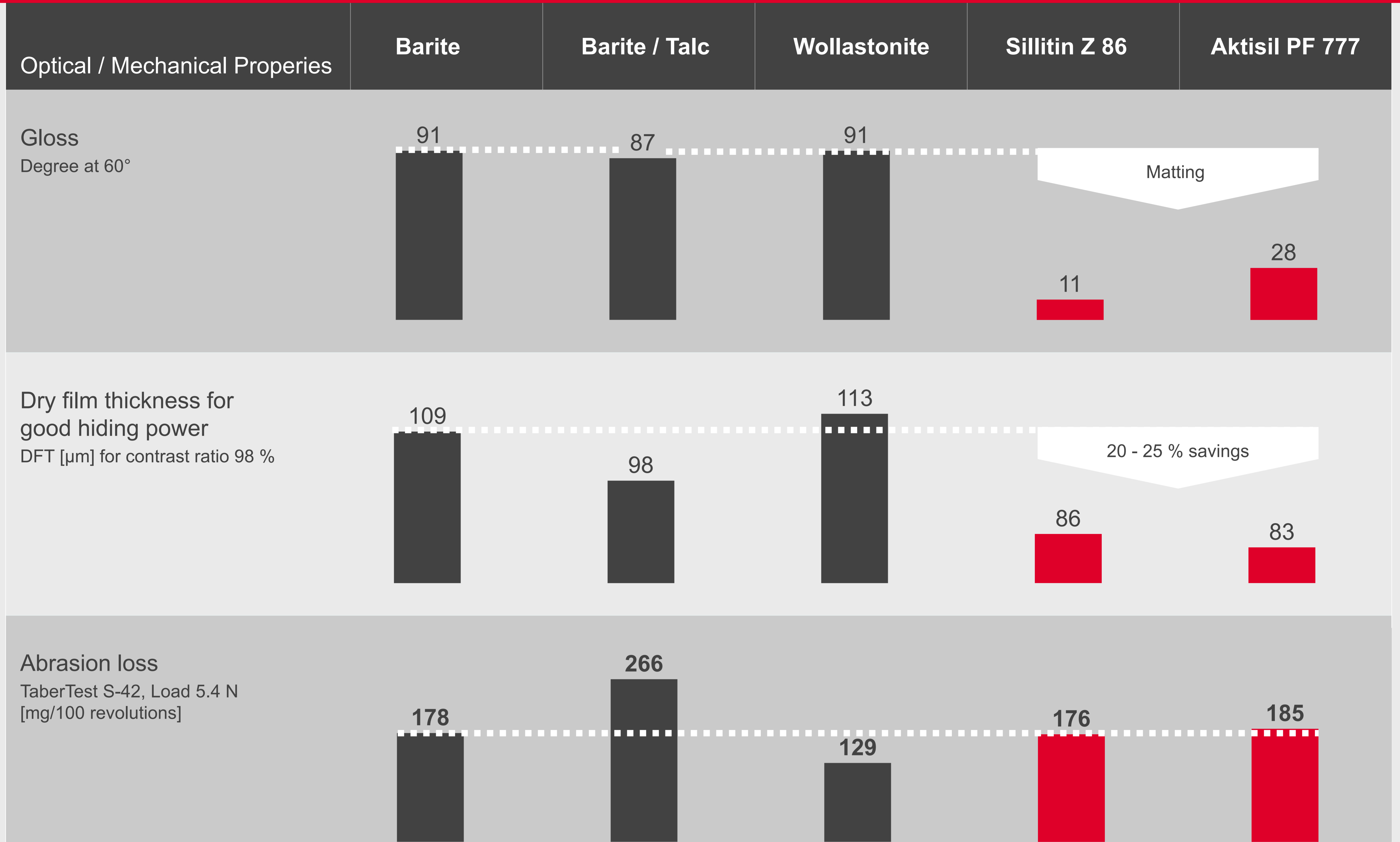
- **Preparation**
Dissolver equipped with bead mill agitator
20 min 2000 rpm
- **Application / Conditioning**
By air pressure on cold rolled grit-blasted steel,
SA 2 ½, DFT 120 µm, drying 14d 23°C / 50% RH



NEUBURG SILICEOUS EARTH IN 2C POLYASPARTIC ANTI-CORROSION COATING, PVC 30 %

SILLITIN Z 86 and AKTISIL PF 777 vs. Classical Fillers

IMPROVED FEATURES



Anti-Corrosion Properties	Barite	Barite / Talc	Wollastonite	Sillitin Z 86	Aktisil PF 777
Salt Spray Test 1500 h Surface: No blistering / corrosion in or under coating, good adhesion Scribe: Corrosion Delamination					
Humidity Test 1500 h Surface: Apart from barite no blistering / corrosion, good adhesion Scribe: Corrosion Delamination					