

NEUBURG SILICEOUS EARTH IN WATER-BASED 2 C EPOXY PRIMER-SURFACER YELLOW

OBJECTIVE

Improving early sandability and corrosion resistance

**Neuburg Siliceous Earth:
Aktisil AM, Aktifit AM**

FORMULATION

Control with barium sulfate ppt			Replacement of filler				
Component	PVC	Filler dosage increased	Substitution by equal volume				
			+ Talc	Aktisil AM + Talc	Aktifit AM + Talc	Aktisil AM	
	32 %	42 % constantly	-----•				
Component A	Water demineralized	15.1	17.5	19.1	30.5	30.5	32.0
	Dispersing additive	3.3	3.3	3.3	3.3	3.3	3.3
	Defoaming additive	0.1	0.1	0.1	0.1	0.1	0.1
	Titanium dioxide	8.0	8.0	8.0	8.0	8.0	8.0
	Pigments yellow / red	2.53	2.53	2.53	2.53	2.53	2.53
	Barium sulfate ppt	45	75	50			
	Talc			15	15	15	
	Neuburg Siliceous Earth				30	30	44
	Defoaming additive	0.05	0.05	0.05	0.05	0.05	0.05
	Texanol	0.6	0.6	0.6	0.6	0.6	0.6
Rheology Modifier	0.6	0.6	0.6	0.6	0.6	0.6	
Methoxypropanol	1.0	1.0	1.0	1.0	1.0	1.0	
Beckocure™ EH 2261w/41WA (Amine hardener)*1	24.2	24.2	24.2	24.2	24.2	24.2	
Corrosion inhibitors	2.4	2.4	2.4	2.4	2.4	2.4	
Water demineralized	1.4						
Component B	Beckopox™ EP 387w/52WA (Epoxy resin)*1	41.3	41.3	41.3	41.3	41.3	41.3
	Water demineralised	4.6	4.6	4.6	4.6	4.6	4.6
Total	150.2	181.2	172.8	164.2	164.2	164.7	
Solids content w/w [%]	59.9	66.4	63.7	54.8	54.8	54.3	
Stoichiometric crosslinking ratio amin / epoxy 0.53							

Substrate: cold rolled steel Q-Panel R 48

Drying: 23 °C / 50 % relative humidity

Dry film thickness: 80 µm single-layer

*1 <http://allnex.com/the-easy-cure-system>

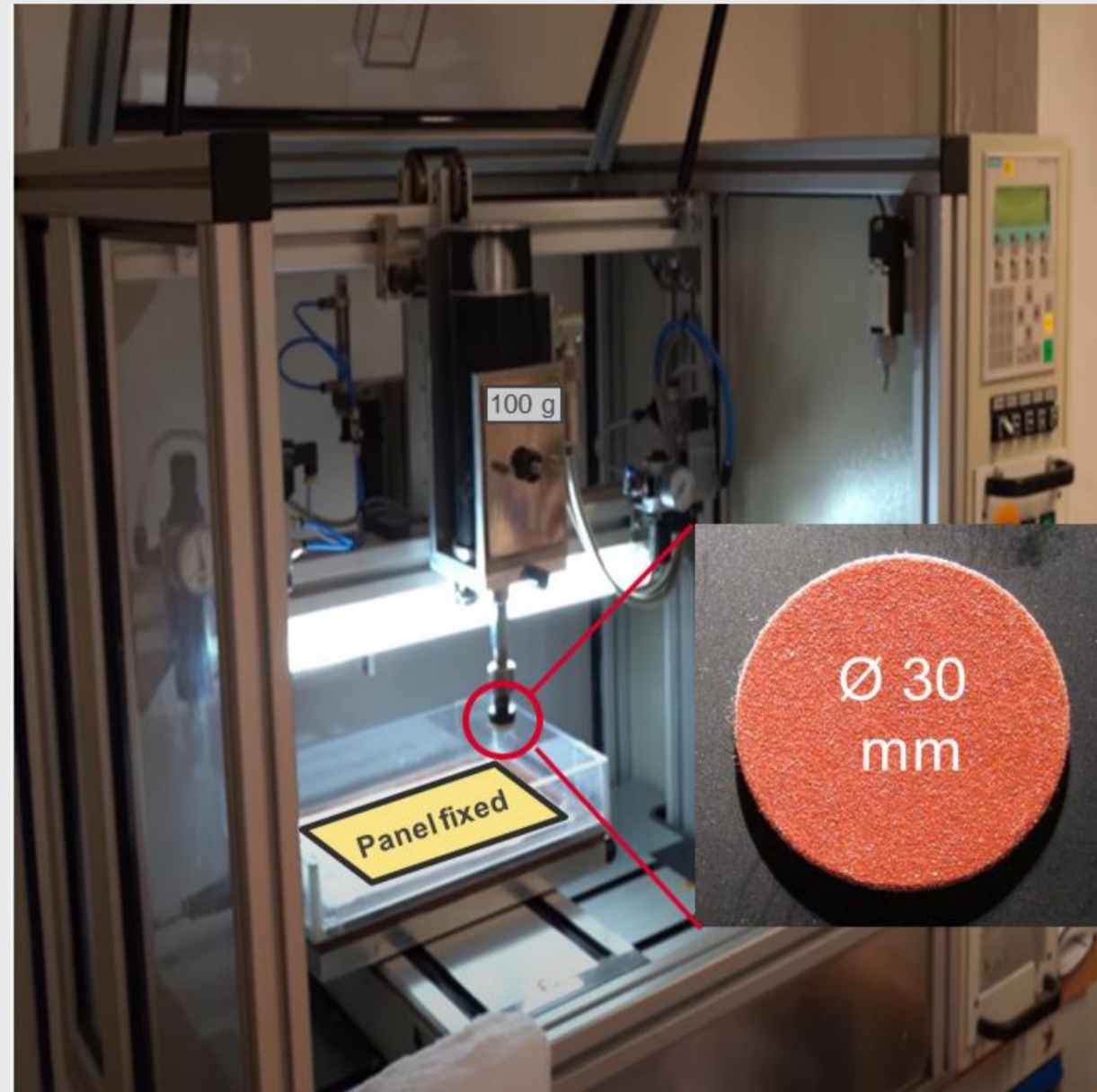
NEUBURG SILICEOUS EARTH IN WATER-BASED 2 C EPOXY PRIMER-SURFACER YELLOW

RESULTS

		PVC 32 %	PVC 42 %				
		Barium sulfate ppt	Barium sulfate ppt + Talc	Aktisil AM + Talc	Aktifit AM + Talc	Aktisil AM	
Sedimentation Stability		moderate	poor	poor	good	moderate	perfect
Pendulum Hardness Koenig [s]	16 h	13	13	13	18	20	19
	7 d	36	41	38	45	48	48
Adhesion, Cross-cut 2 mm		7 d	0	0-1	0	0-1	0-1

Machine Sanding

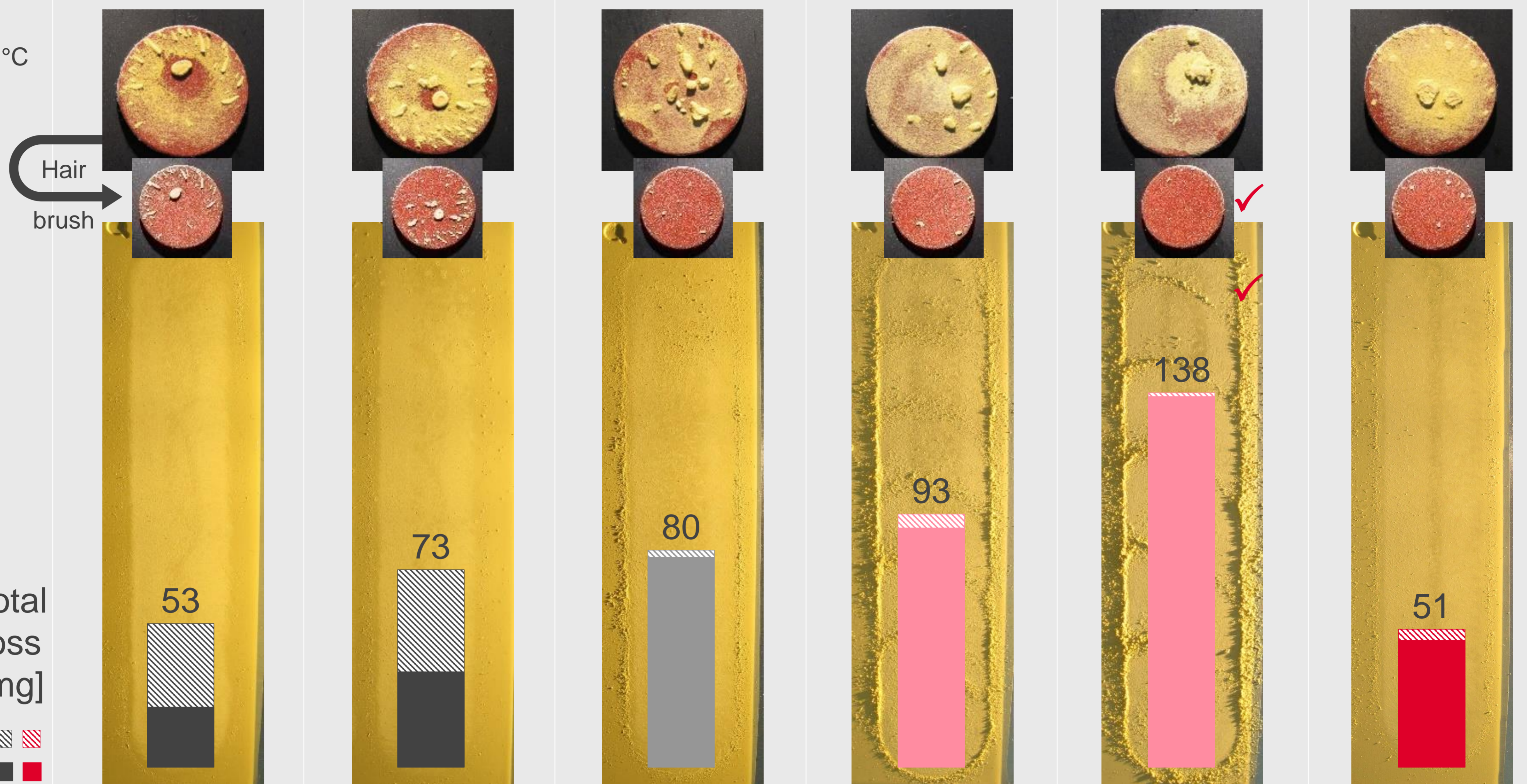
after drying time 16 h 23 °C + 2 h 60 °C



- Lateral strokes with 3.5 cm / s under rotation 2000 rev / min
- Dry sandpaper grit P240 without dust suction
- Weight load 14 g/cm²

Total loss [mg]

Firmly adhering
Easy to remove

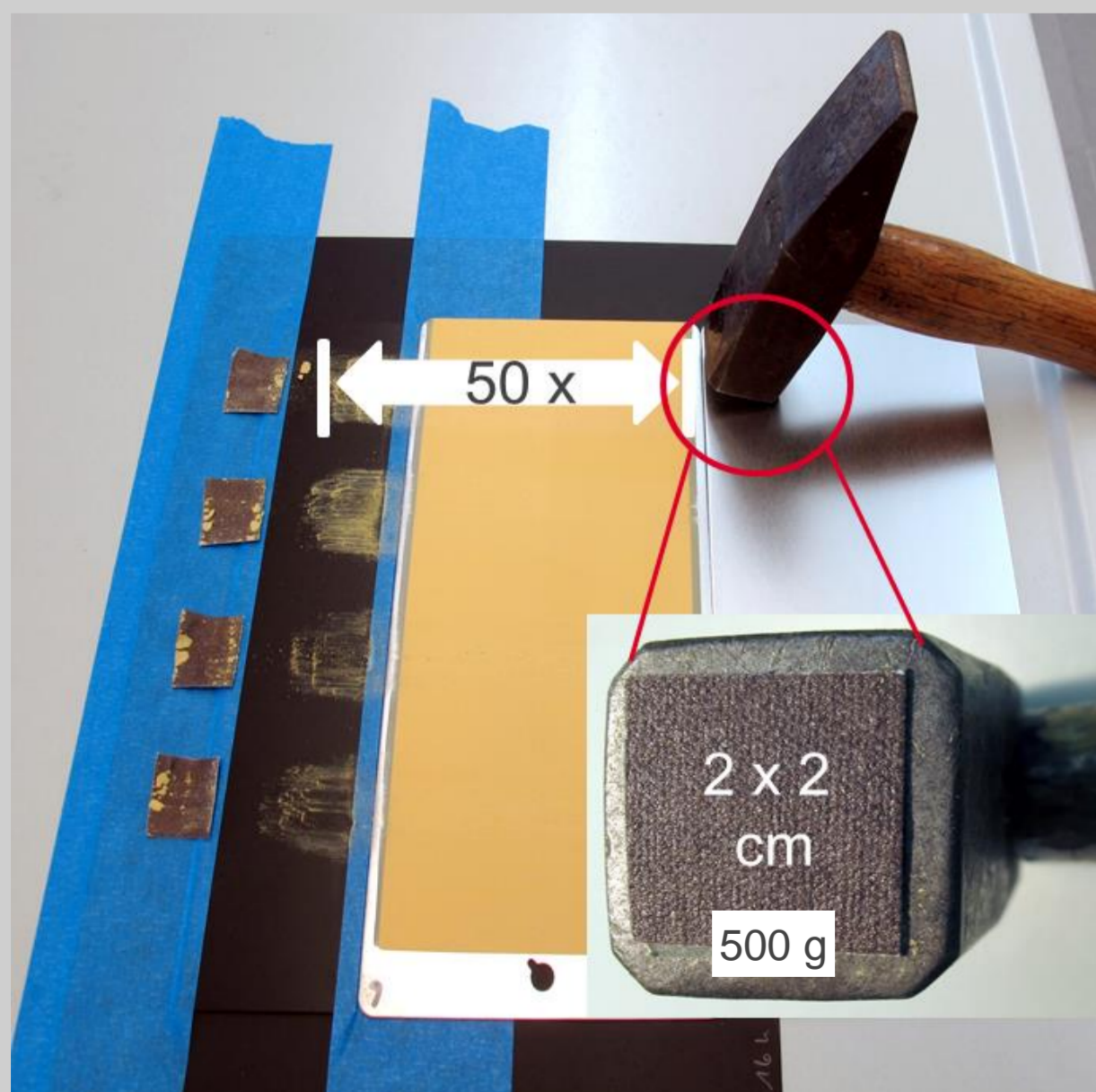


Manual Sanding

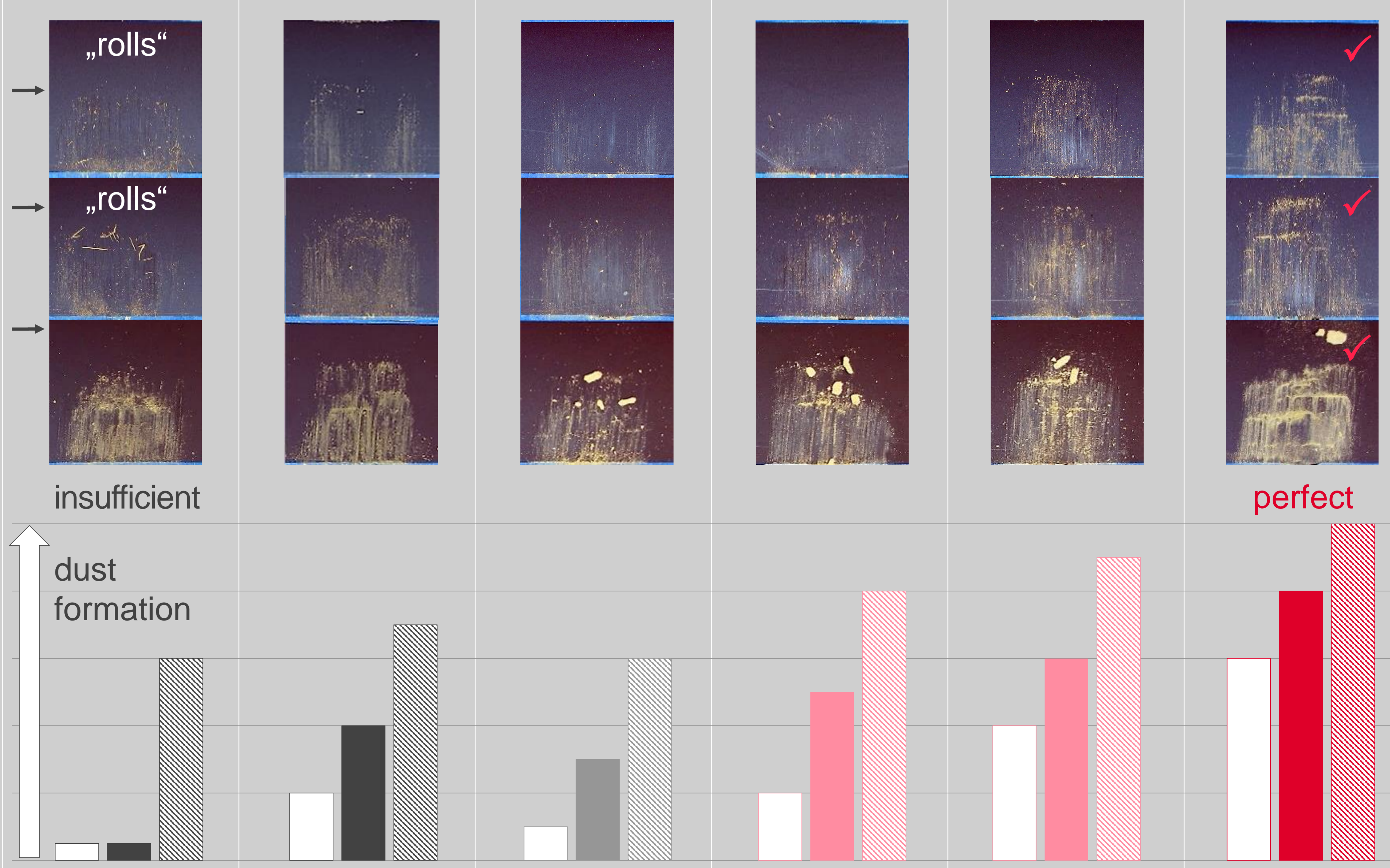
Slow process after varied drying time 2 h 40 °C

16 h 23 °C

16 h 23 °C + 2 h 60 °C



- 50 lateral double strokes, 1 hub / s
- Dry sandpaper grit P240 without dust suction
- Weight load 125 g/cm²



NEUBURG SILICEOUS EARTH IN WATER-BASED 2 C EPOXY PRIMER-SURFACER YELLOW

RESULTS

	PVC 32 %	PVC 42 %				
	Barium sulfate ppt	Barium sulfate ppt + Talc	Aktisil AM + Talc	Aktifit AM + Talc	Aktisil AM	
Salt Spray Test 300 h Panel drying 7 d 23°C / 50% RH <i>Non-scribed area</i> Appearance						
Metall corrosion Coating stripped						
Adhesion Cross-cut 2 mm tape tear-off						
<i>Scribed area</i> Sikkens 1 mm width / 7 cm long Appearance						
Delamination at scribe 24 h regeneration time	entirely					
Corrosion at scribe Coating stripped						

SUMMARY

Improved Features

- Optimized storage stability
- Faster hardness build-up
- Excellent, easier and earlier sandability
 - **Aktifit AM** + Talc for machine grinding
 - **Aktisil AM** pure for manual sanding
- Extended corrosion resistance
 - No blistering / corrosion-free at non-scribed area
 - Lowest delamination / corrosion effects at scribe
 - **Aktisil AM** + Talc for perfect paint adhesion even during exposure in wet state

The tested **Neuburg Siliceous Earth** grades overcome drawbacks in water-based 2C EP primer-surfacer:

- ✓ Faster sandability at lower drying temperatures
- ✓ Longer lasting performance and service life of sanding paper
- ✓ Accelerated, more productive coating process
- ✓ Savings in time, energy, maintenance work, waste, material cost
- ✓ Corrosion performance multiplying protection period and durability of coating
- ✓ No active anti-corrosive pigment needed
- ✓ Savings in resources (lower filler dosage) and formulation costs