

NEUBURG SILICEOUS EARTH IN BLACK CATHODIC ELECTRO DEPOSITION PAINT

FILLER VARIATIONS

Clay 1	➔	Neuburg Siliceous Earth: Sillitin Z 86, Aktisil PF 777
Clay 2 (slightly finer than Clay 1)	➔	Neuburg Siliceous Earth: Sillikolloid P 87
Calcined Clay	➔	Calcined Neuburg Siliceous Earth: Silfit Z 91, Aktifit 111, Aktifit PF 115, Aktifit VM

FORMULATION

Pigment paste	Deionized water	38.075
	Acetic acid 30%	2.00
	Resydrol EM 6642/55 BG	18.175
	Surfynol 104/50 BG	1.75
	Special black 4	3.65
	Filler	36.35
Total [%]		100.00
Bath formulation	Resydrol EZ 6635WCAT/35WA	33.92
	Deionized water	59.82
	Pigment paste	6.25
Total [%]		100.00

Pigment/binder ratio: 0.2

Guide formulation from Allnex

Substrate: Gardobond 26S/6800/OC (Steel, zinc phosphated)

Curing at 180° C (25 minutes dwelling time of the plates in the oven)

Dry film thickness: 30 µm

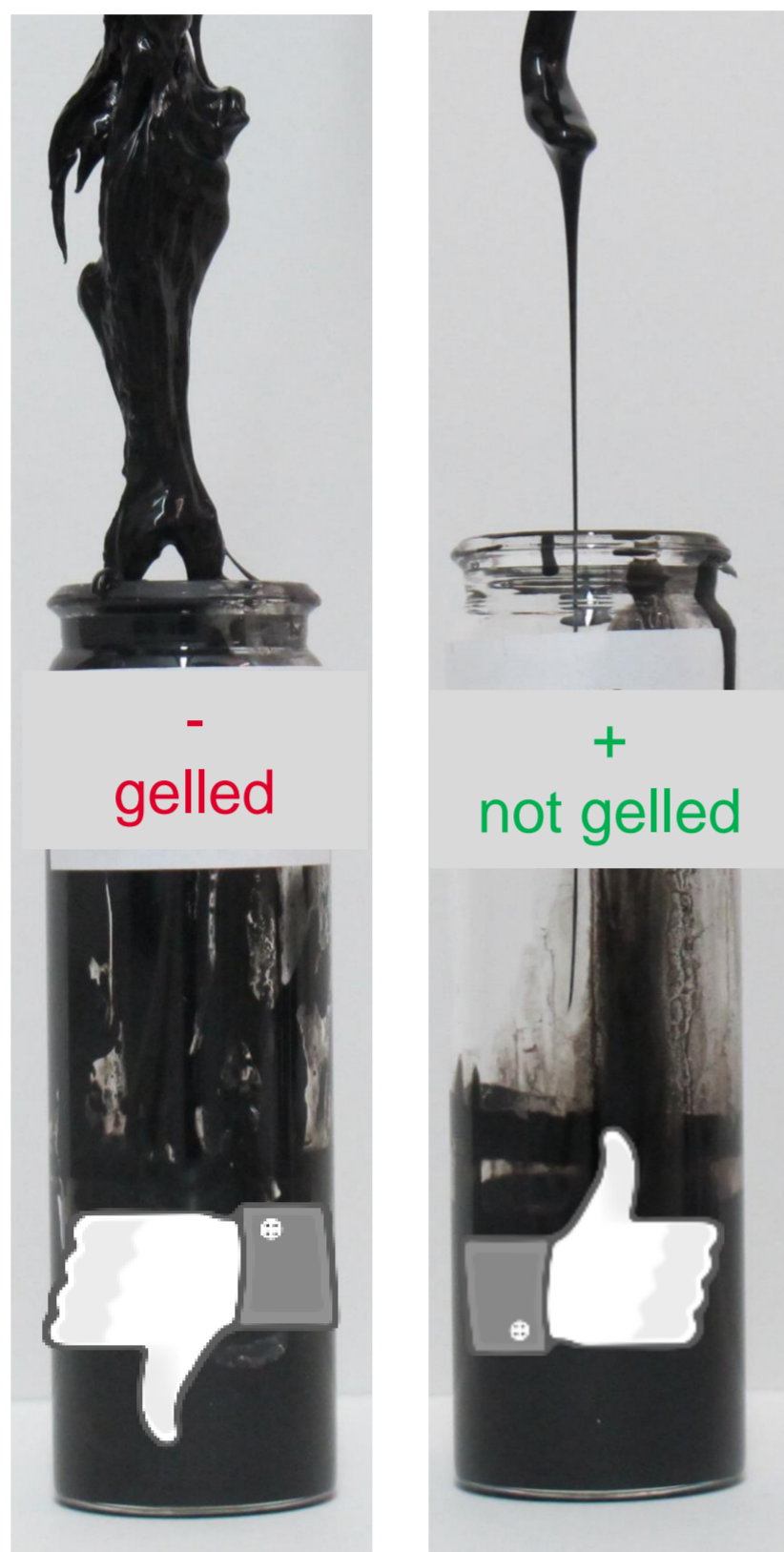
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MINERAL

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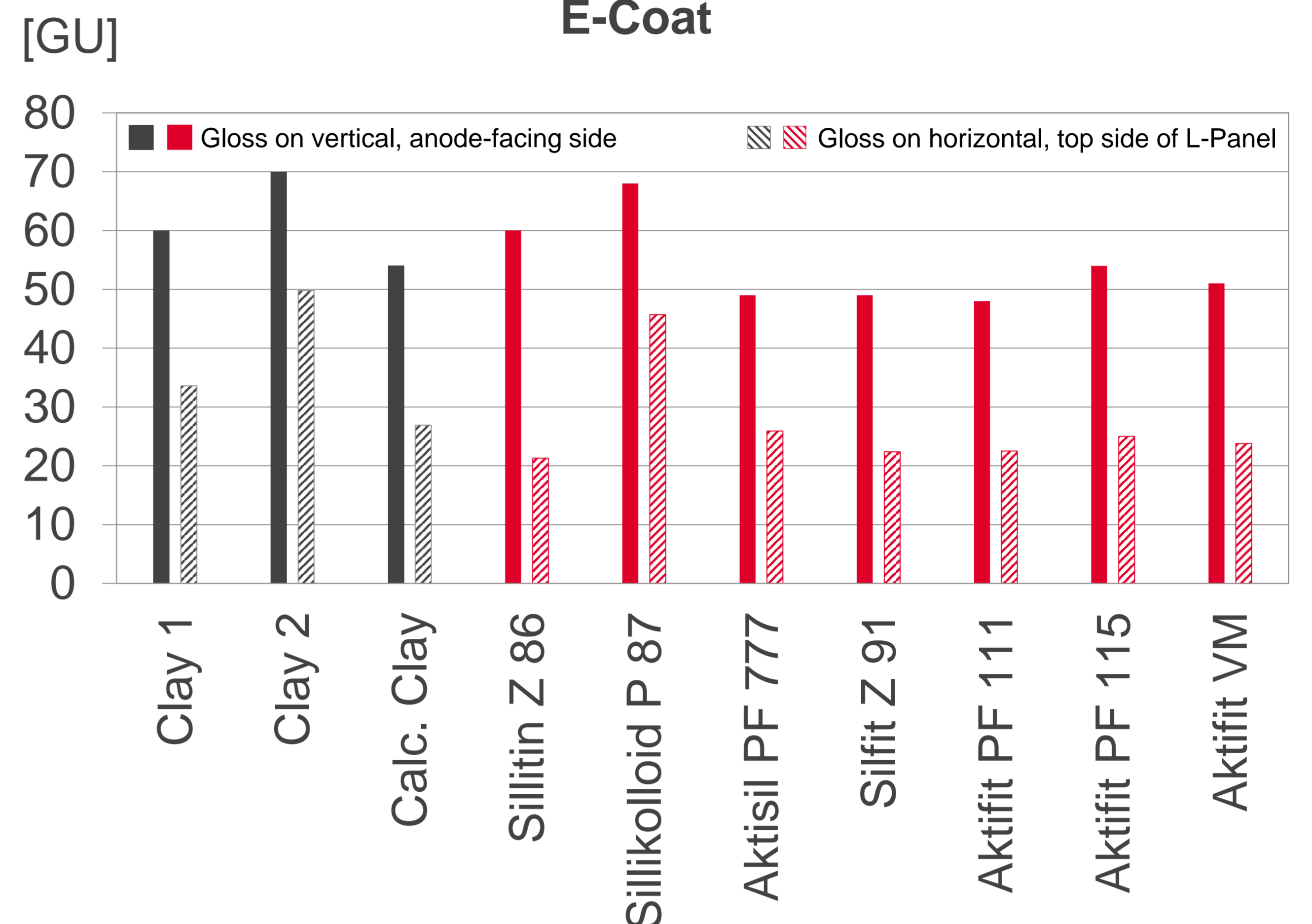
RESULTS

Storage Stability at 38°C Pigment Paste

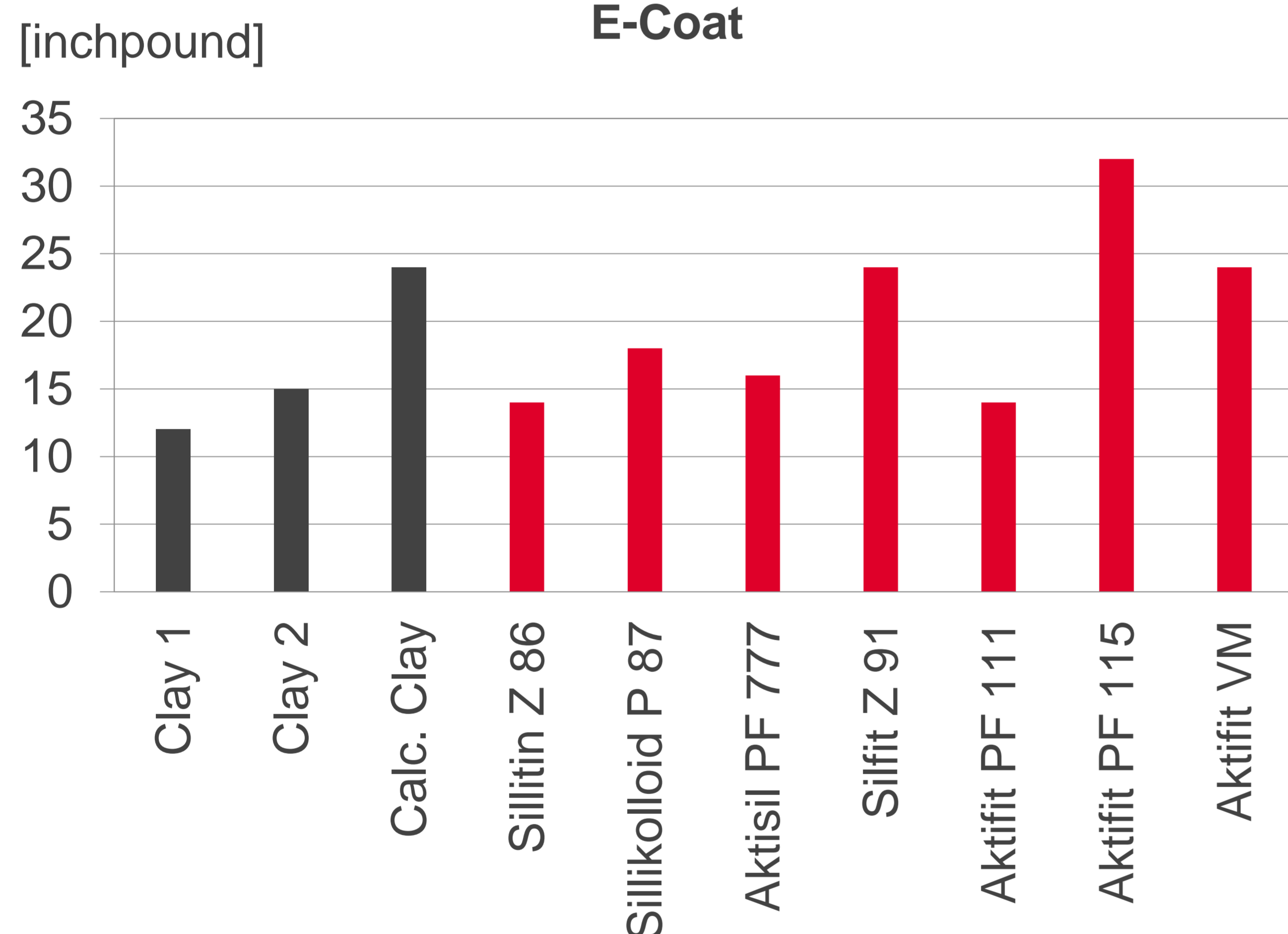
Preservation of flowability	after 7d	after 28d	after 56 d	after 168 d
Clay 1	+	+	-	-
Clay 2	+	+	-	-
Calcined Clay	+	0	-	-
Sillitin Z 86	+	+	+	-
Sillikolloid P 87	+	+	+	-
Aktisil PF 777	+	+	+	+
Silfit Z 91	+	0	-	-
Aktifit PF 111	+	+	+	+
Aktifit PF 115	+	+	+	+
Aktifit VM	+	+	+	0



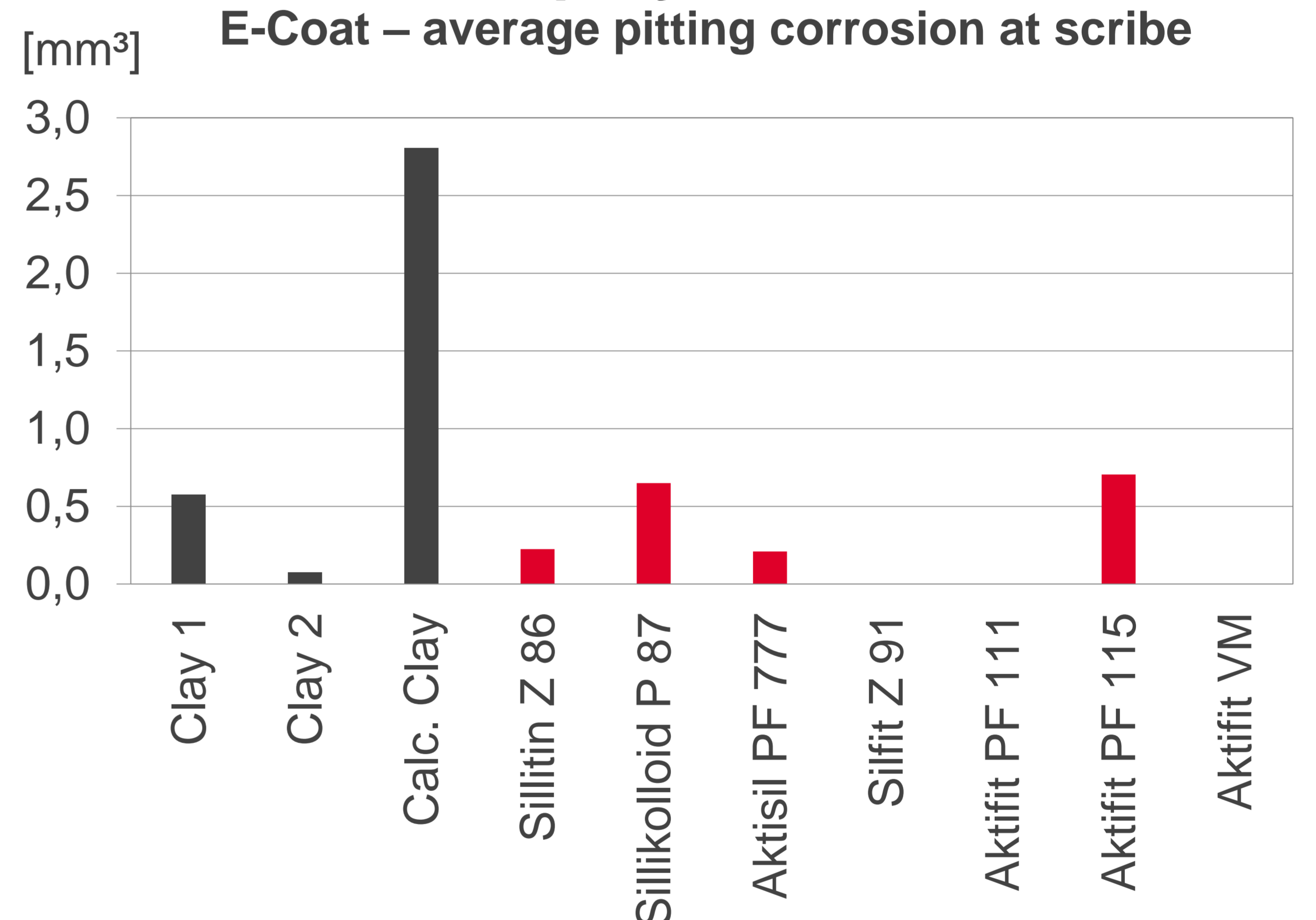
Gloss 60° E-Coat



Impact Test E-Coat



Salt Spray Test 1000h E-Coat – average pitting corrosion at scribe



SUMMARY

- Compared to the **Clays**, **Sillitin Z 86** and **Sillikolloid P 87** have a comparable good storage stability at room temperature, but an improved shelf life at raised temperatures. **Aktisil PF 777** becomes more viscous by storage at 38° C, but is stable over a considerably longer period of time (at least 6 months) and does not gel. It is also recommended for a visual uniform appearance on the different geometric parts (L-effect).
- Compared with the **Calcined Clay**, **Silfit Z 91** and the **Aktifit grades** offer improved storage stability even at room temperature. All **Aktifit types** achieve this even at raised temperatures. In addition, the **Aktifit PF 115** achieves better mechanical values at Impact Test. All **Calcined Neuburg Siliceous Earth** products show a significant improvement in corrosion protection.