

NEUBURG SILICEOUS EARTH IN EPOXY POWDER COATING (FBE), E.G. FOR PIPELINES

OBJECTIVE

Sillitin Z 86, Aktisil AM and Aktisil MM as Functional Fillers in an Epoxy Based Powder Coating

FORMULATION

Epikote 1055	827	827	827	827	827	827
Epikure curing agent P-104	33	33	33	33	33	33
BYK 368-P	10	10	10	10	10	10
Bayferrox 222	15	15	15	15	15	15
Barium sulfate	120 *		240			
Sillitin Z 86		74		149		
Aktisil AM					149	
Aktisil MM						149
Total (parts per weight)	1005	959	1125	1034	1034	1034
PVC [%]	4.2		7.6			

* Base formulation by Hexion

SUMMARY

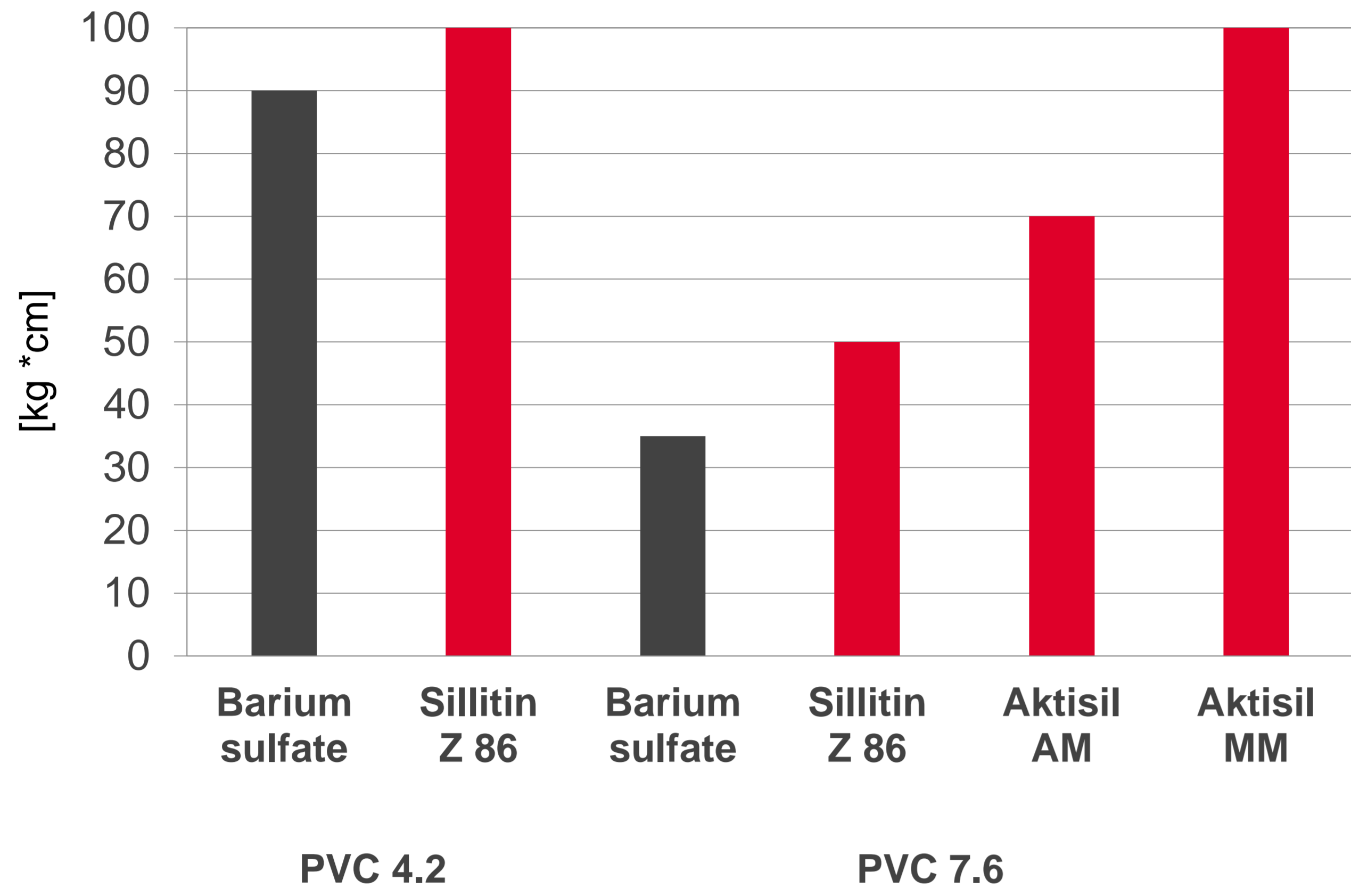
The use of Neuburg Siliceous Earth offer the following benefits:

- better fluidizability
- optical properties remain on a high level
- markedly improved mechanical properties (cupping test, reverse impact test)
- increased abrasion resistance
- markedly reduced delamination, low corrosion at scribe
- increased hot water resistance

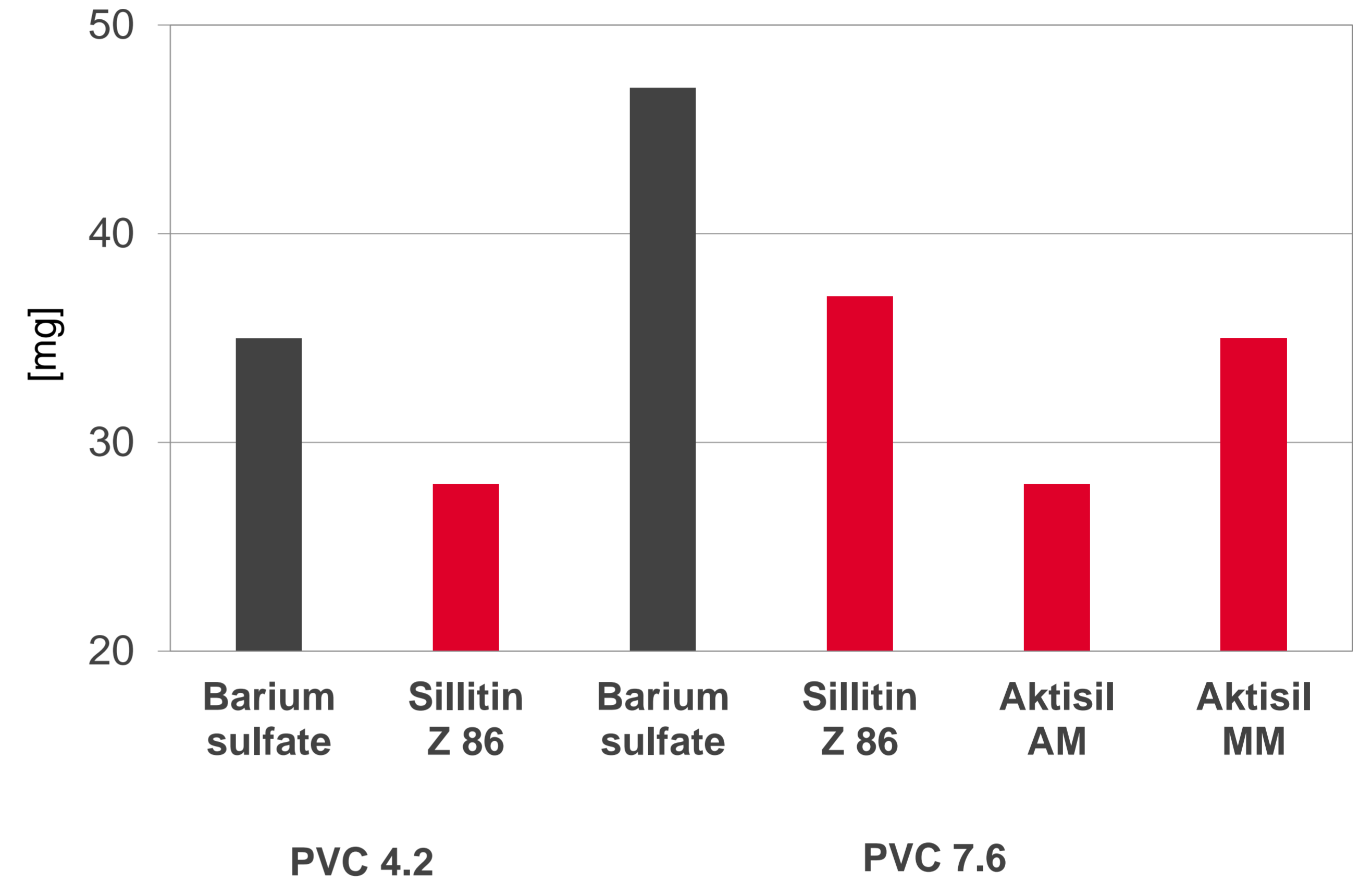
NEUBURG SILICEOUS EARTH IN EPOXY POWDER COATING (FBE), E.G. FOR PIPELINES

Substrate: sandblasted steel (surface roughness 50-70 µm), pre-heated to 200 °C; **Curing:** 10 min PMT 200 °C, DFT 300-600 µm

**Reverse Impact Test
DIN EN ISO 6272**

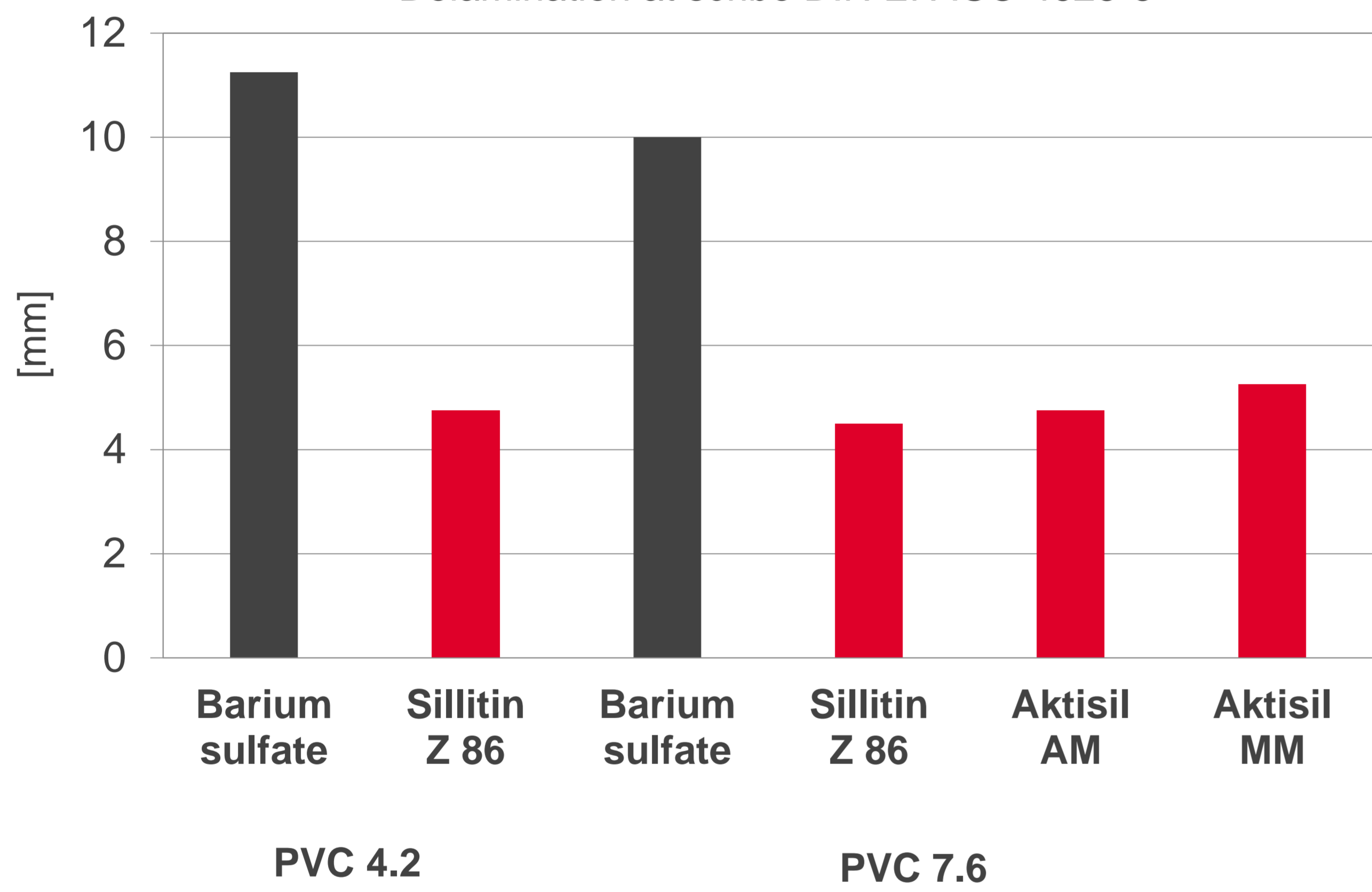


**Abrasion Loss ASTM D 4060
CS 17 / 1000 g / 1000 rev.**



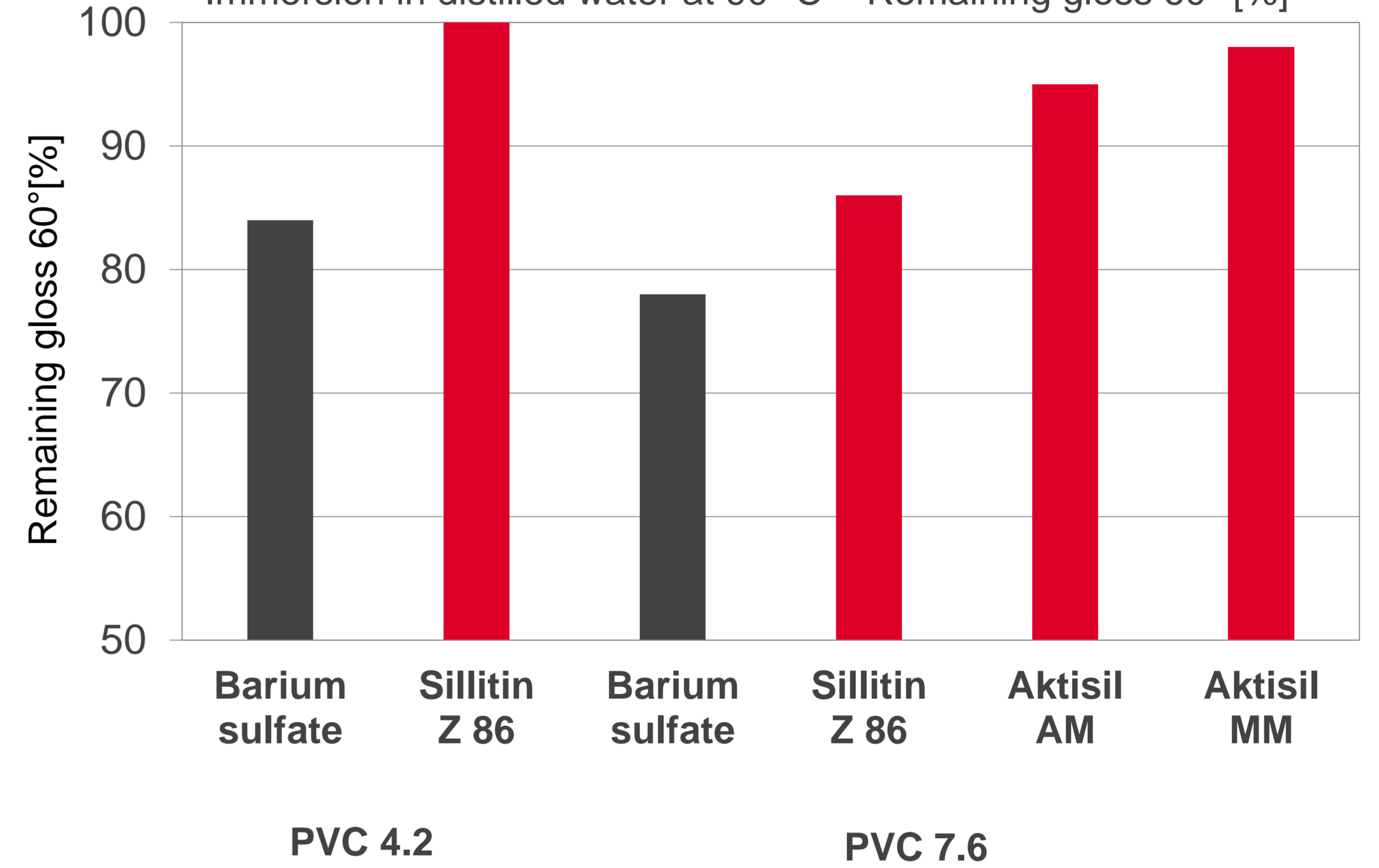
**Salt Spray Test 2000 h
DIN EN ISO 9227**

Delamination at scribe DIN EN ISO 4628-8



**Hot Water Resistance 1700 h
DIN EN ISO 2812-2**

Immersion in distilled water at 90 °C – Remaining gloss 60° [%]



**Humidity Test (CH) 4000 h
DIN EN ISO 6270-2**

Delamination at scribe

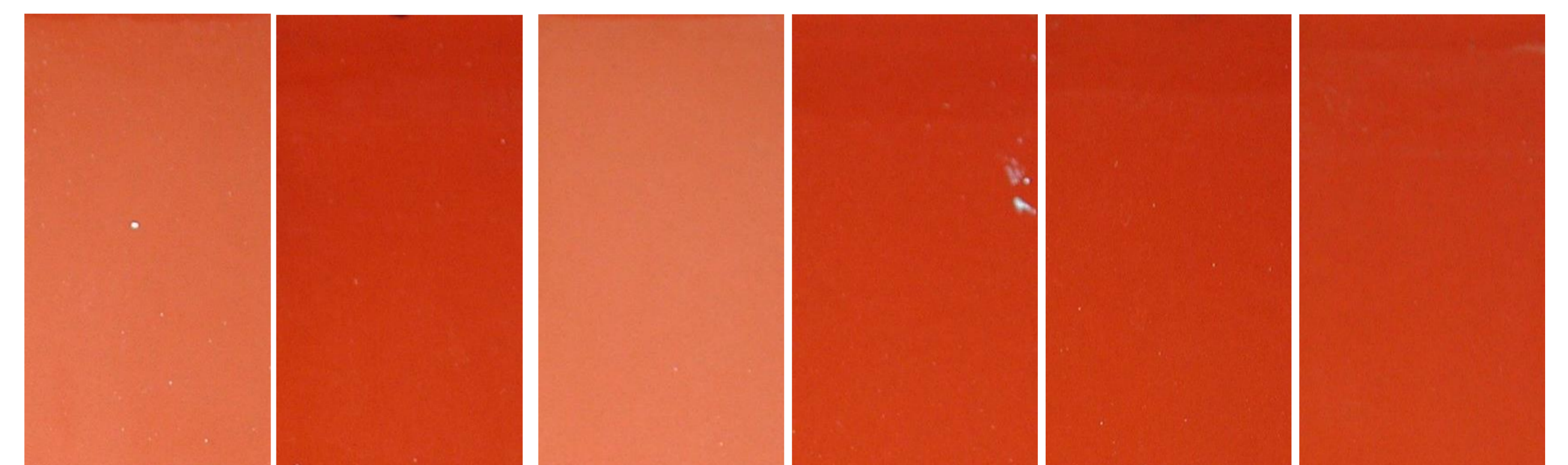


Average delamination at scribe [mm]

2.5	0.3	3.5	0.4	0.3	0
Barium sulfate	Sillitin Z 86	Barium sulfate	Sillitin Z 86	Aktisil AM	Aktisil MM
PVC 4.2			PVC 7.6		

**Hot Water Resistance 1700 h
DIN EN ISO 2812-2**

Immersion in distilled water at 90 °C – Color change delta E



Color change delta E

4.1	3.1	5.6	1.0	1.3	2.9
Barium sulfate	Sillitin Z 86	Barium sulfate	Sillitin Z 86	Aktisil AM	Aktisil MM
PVC 4.2			PVC 7.6		