NEUBURG SILICEOUS EARTH IN ROAD MARKING PAINT WHITE, SOLVENT-BASED

OBJECTIVE

Cost saving and performance enhancement through implementing Neuburg Siliceous Earth even with less titanium dioxide content

FORMULATION

Typical ROAD MARKING solvent-based white formulation *

* Base formulation by DIC Performance Resins ** Burnock AC 4010 (60% in Butylacetate)	Control	Full substitution NCC	Partial substitution NCC (50%) and full substitution talc	Full substitution NCC and partial substitution TiO_2
Titanium dioxide	90.9	90.9	90.9	72.0 / 70.0
Talc 6 µm	22.7	22.7	-	22.7
Calcium carbonate NCC fine (5 µm)	181.8	-	90.9	-
Sillitin V 88 / Z 89	**-**	**175.1**	**108.6**	**187.1 / 188.3**
Calcium carbonate NCC coarse (15 µm)	277.3	277.3	277.3	277.3
Styrene acrylate ** solvents and additives	386.2	386.2	386.2	386.2
Total	958.9	952.2	953.9	945.3 / 944.5

RESULTS AND SUMMARY

By using Neuburg Siliceous Earth:

- Color space is maintained
- Hiding power is improved, so that either lower film thickness can be applied or titanium dioxide concentration can be reduced
  Despite of more than 20 % lower titanium dioxide content, the hiding power remains completely preserved
- Drying time according to DIN 53150 (stage 4) is reduced between 10 and 25 min
- Abrasion resistance is improved, especially if talc is replaced

The best price performance ratio is provided by Sillitin Z 89, for higher color neutrality Sillitin V 88 is recommended.
The calcined grade Silfit Z 91 is the most suitable for highest color demands (not tested in this study).

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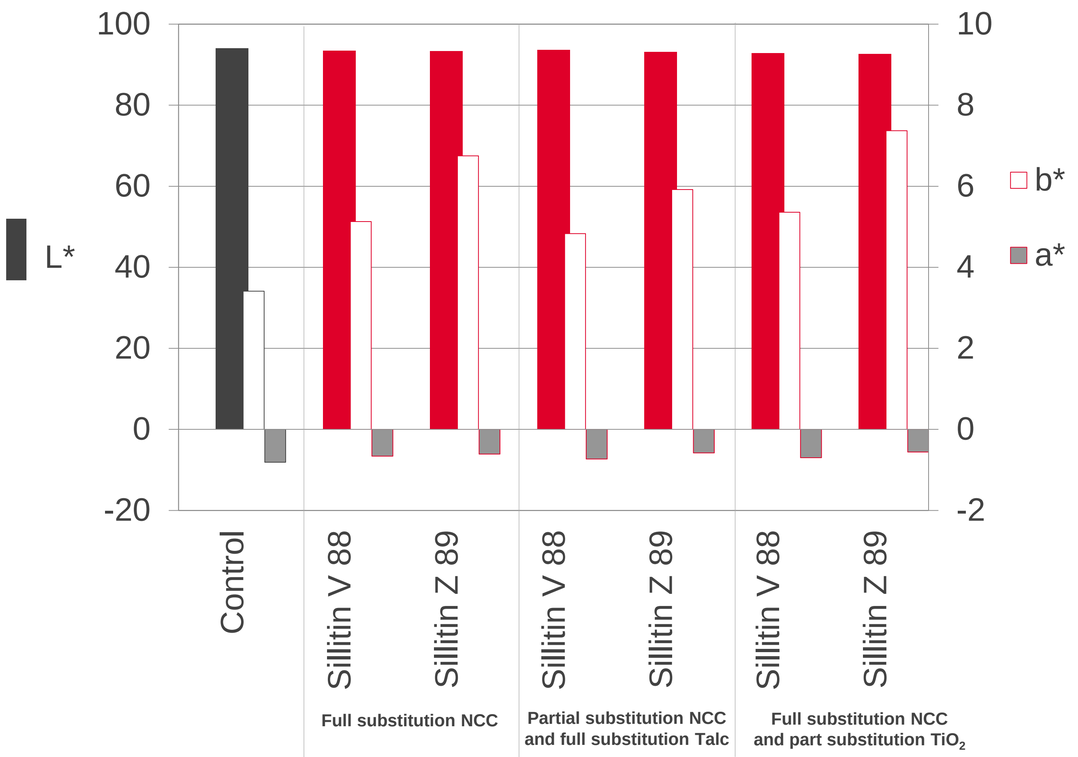
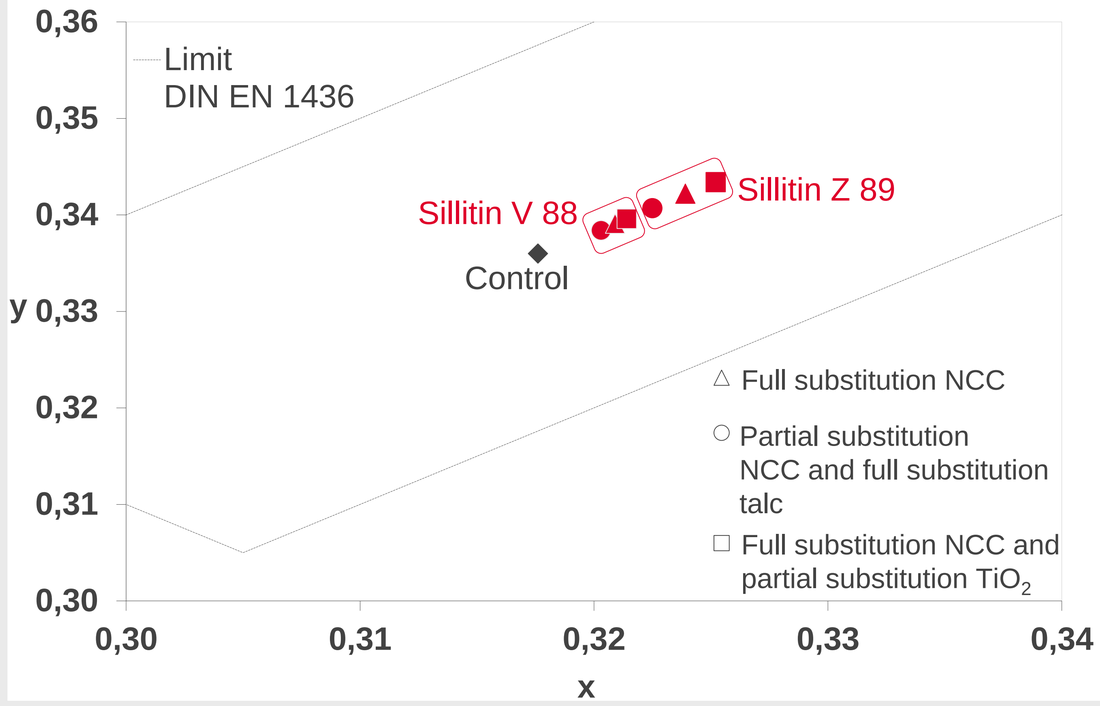
RESULTS

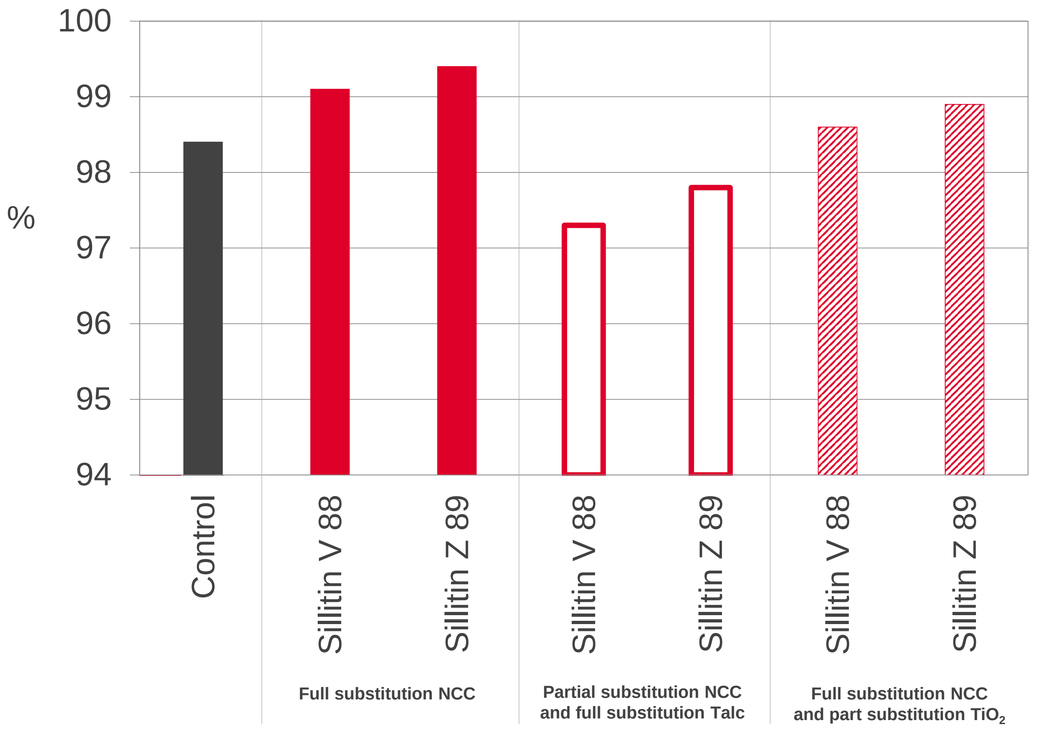
Color 45°/0° (DFT ~ 250µm)



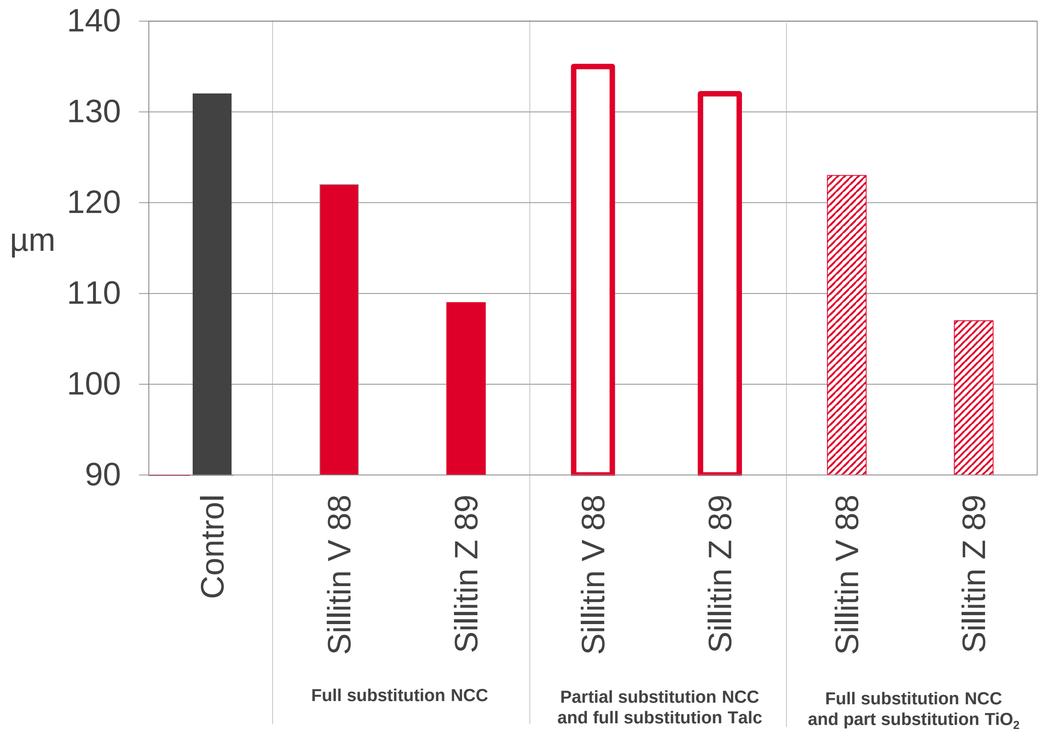
Chromaticity Coordinates DIN EN 1436



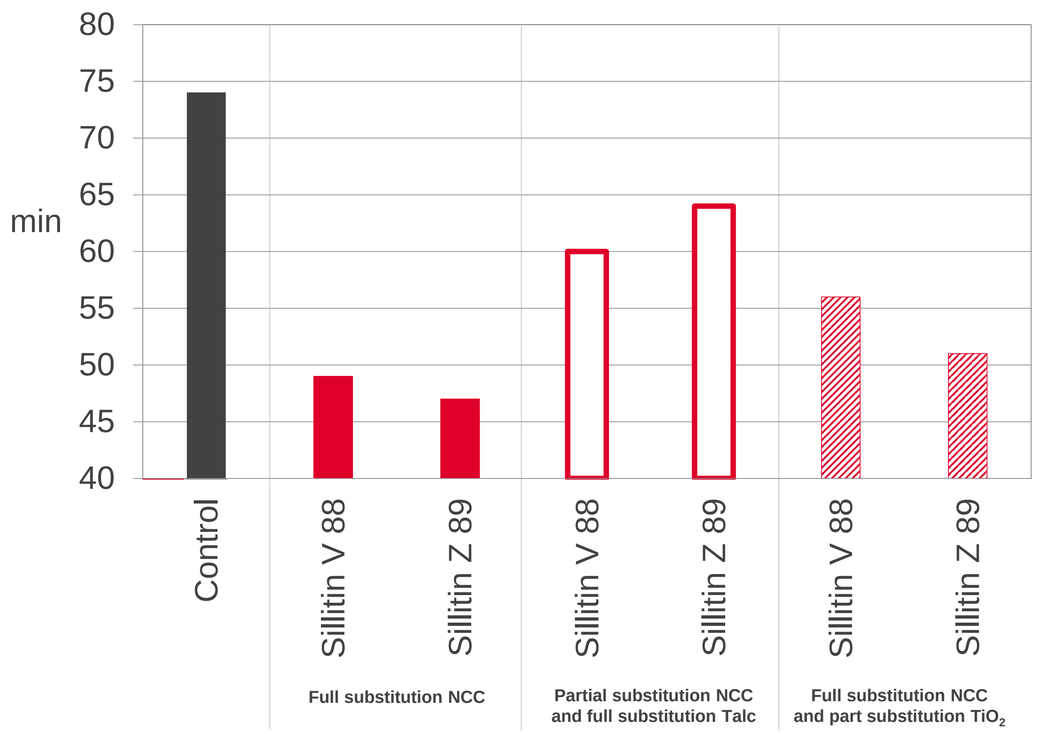
Hiding Power (DFT ~ 250µm)



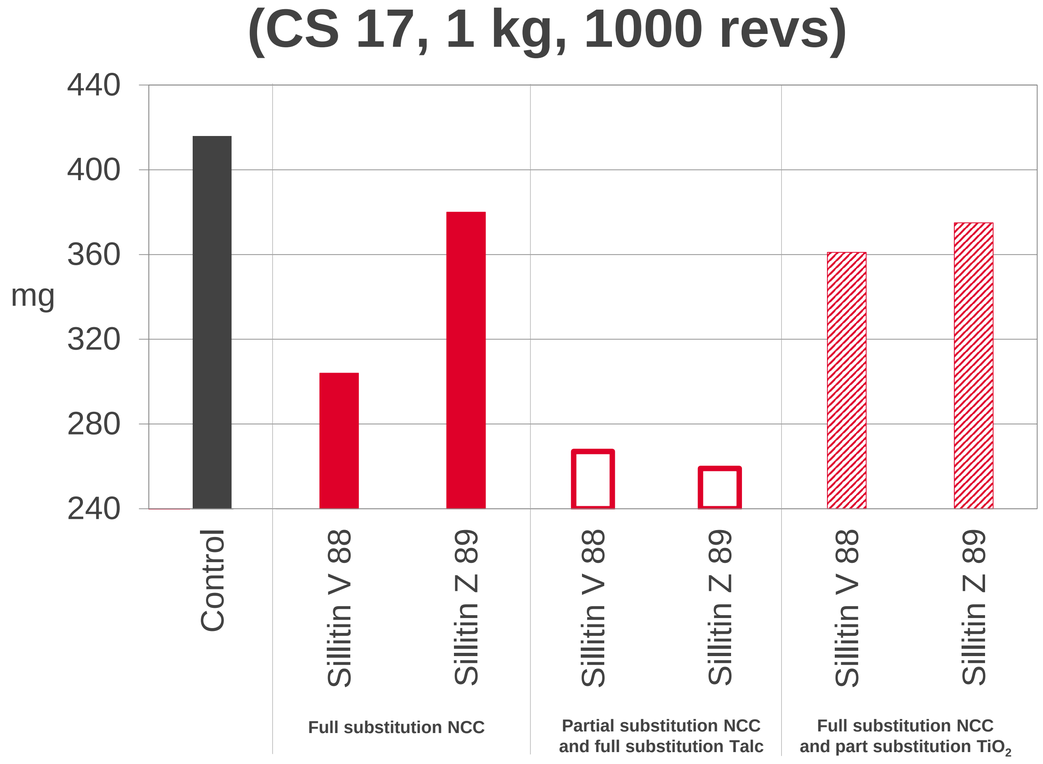
Dry Film Thickness for Contrast Ratio = 98 %



Drying Time DIN 53150 (stage 4)



Abrasion Loss ASTM D 4060 (CS 17, 1 kg, 1000 revs)



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