

THE APPLICATION OF MINERALS SCIENCE

Exterior Paints and Coatings

Imerys' **Opacilite™** flash calcined kaolin offers superior performance in exterior paints and coatings.

Opacilite™ is the ideal extender for use in external paints and coatings, offering high resistance to weathering and low colour fade. **Opacilite™** is the primary choice for durability; in controlled weathering testing, **Opacilite™** gave optimal colour stability and the lowest chalking values over time when compared to other mineral fillers.

Opacilite™ offers excellent opacity and hiding power, due to sealed internal voids, without absorption of the binder. This improves the scrub resistance and contributes to the overall coating hardness enabling improved abrasion resistance.

ATTRIBUTES

- TiO₂ extension up to 30%
- Optimal properties for exterior paints and coatings
- High resistance to weathering
- Improved scrub resistance and dry hiding
- Minimal chalking
- Minimal lightening or fading



Opacilite™

EXTERIOR WHITE COATING FORMULATION

	% wgt
Water	29.5
Titanium Dioxide	18.0
Opacilite™ / Test Extender	8.0
Dolomite	4.0
Talc	3.0
Vinyl Ethylene Emuls (52% solids)	32.0
Additives (dispersant, biocide, coalescent, thickener)	5.5
TOTAL	100
PVC	41.0
Specific Gravity	1.35
Paint Solids wt%	50.8
Paint Volume vol%	37.7

The effect of the extenders on the chalking of the white (untinted) paints was evaluated in the exterior paint formulation given in Table 1.

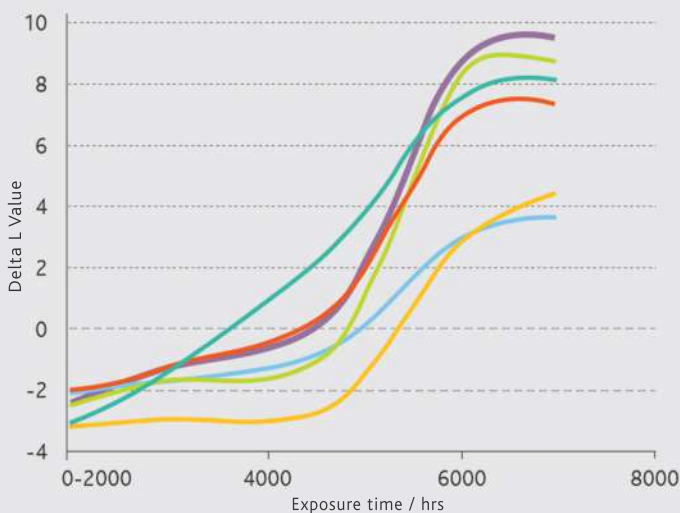
CHALKING RESISTANCE DIN 53-159 FOR WHITE EXTERIOR PAINTS

Exposure Time	Opacilite™	Fine PCC	Talc	Fine GCC	GCC	Fine Dolomite
0-2000	0	0	0	0	0	0
3000	0	0	0	0	0	1
4000	1	2	1	1	1	3
6000	2	3	3	3	3	3
7000	2	3	3	3	3	3

Chalk resistance was rated on a 0 – 5 scale, where: 0 = no chalking, 5 = heavy chalking. Red values indicate the onset of chalking

The chalking results on the white paints showed the onset of chalking occurred earlier with the paint containing dolomite, after 3000 hours. First signs of chalking occurred in the remaining paints after 4000 hours. Opacilite™ exhibited the lowest chalking levels of all extenders tested.

CHANGE IN L* VALUE V TIME FOR BLUE TINTED PAINTS



COLOUR STABILITY IN EXTERIOR BLUE COATING*

The colour stability results on the blue tinted paints indicated that all the paints darkened slightly over the first 2000 hours of exposure. From 2000 hours onwards, the colour of the paints became lighter (higher L* value).

Opacilite™ gives much less lightening or fading than the other extenders tested.



*The exposure testing work was carried out in a QUV Cabinet in accordance with ISO 11507 : 1997 (E) - Paints and Varnishes - Exposure of Coatings to Artificial Weathering - Exposure to Fluorescent UV and Water Method A in the ISO Standard, with a cycle consisting of 4 hours UV radiation (at 60 +/- 3°C) followed by 4 hours condensation (at 40 +/- 3°C).

FOR MORE INFORMATION

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