

Mini Technical Report

Opalon-F45 QUV Accelerated Weather Testing

Mini Technical Report QUV Accelerated Weathering	Date: 21 December 2023
Opalon-F45	Document Number: TR-0002302-3M

introduction

This technical report assesses the colour change, gloss change, and DFT loss after 1000 hours of accelerated weathering to ASTM D154 Cycle 1. All the test panels within the series have Opalon-F45 as a topcoat. Opalon-S30 and Opalon-W45 have been included as controls.

Results

Tabulated data for the series

System	QUV Hours	dL*(D65)	da*(D65)	db*(D65)	dE*ab(D65)	Visual Comment
Metalox-GC450 / Opalon-S30 White (24 Hrs)	500 Hrs	-0.03	-0.03	0.47	0.48	No colour change Visually
	1000 Hrs	-0.15	0.03	0.37	0.4	
Opalon-F45 Mid Grey / Opalon-F45 Mid Grey (24 Hrs)	500 Hrs	-0.33	-0.06	0.04	0.34	No colour change Visually
	1000 Hrs	-0.34	-0.05	0.00	0.34	
Opalon-F45 Mid Grey / Opalon-F45 Clear	500 Hrs	0.18	-1.08	3.00	3.20	Slight Yellowing of Clear
	1000 Hrs	0.09	-0.81	2.39	2.52	
Opalon-W45 Mid Grey	500 Hrs	-0.55	-0.07	-0.03	0.55	No colour change Visually
	1000 Hrs	-0.83	0.00	-0.06	0.83	

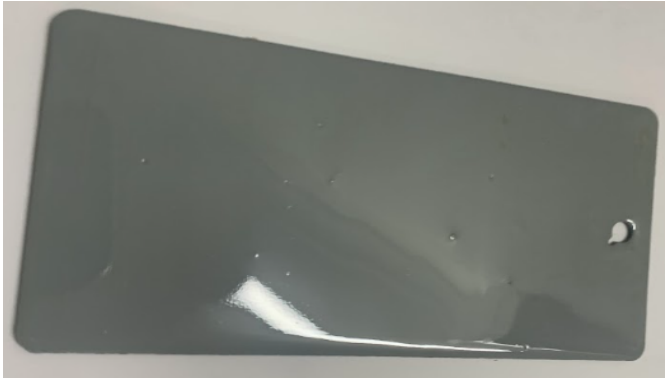
Opalon-F45 Mid grey does not visually change colour. The colour changes detected using a spectrophotometer (Konica Minolta - CM-36dG) are very low after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1).

Opalon-F45 Mid Grey / Opalon-F45 Clear has visually slightly yellowed. The spectrophotometer (Konica Minolta - CM-36dG) detected a slightly yellower colour after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1).

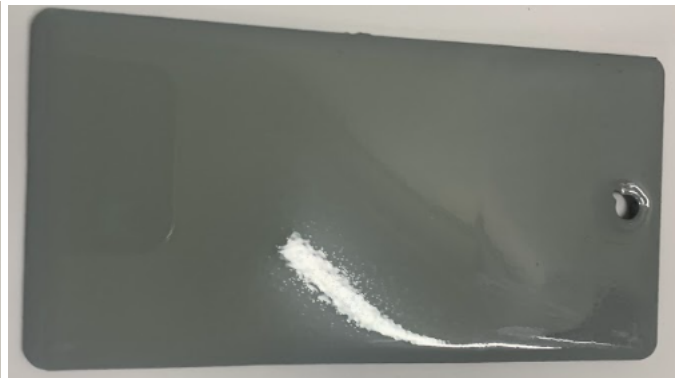
The Opalon-F45 is a very colour-stable flooring product.

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Opalon-F45 Mid Grey / Opalon-F45 Mid Grey



Opalon-F45 Mid Grey / Opalon-F45 Clear



Opalon-W45 Mid Grey



Metalox-GC450 / Opalon-S30 White

Conclusion

The following conclusions are drawn from the above results.

- Opalon-F45 Mid Grey colour is unchanged after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1).
- Opalon-F45 had a slight yellowing after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1).
- Opalon-F45 external weathering is the same as Opalon-S30
- None of the samples experienced high levels of DFT loss.

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