

Mini Technical Report QUV Accelerated Weathering	Date: 21 December 2023
Colourtuff-A90 and C85	Document Number: TR-0002302-5M

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 aliphatic polyurea - Colourtuff. Please Note Tufflon-P80 White and Hybron-W90 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
Colourtuff-A90	500 Hrs	-0.52	-0.05	-0.06	0.53	No colour change Visually
	1000 Hrs	-0.83	0.03	-0.21	0.85	
Colourtuff-C85	500 Hrs	-2.55	0.23	4.67	5.32	Darker
	1000 Hrs	-7.54	0.15	2.57	7.96	
Tufflon-P80 White	500 Hrs	-12.97	9.51	31.69	35.54	Darker, Redder, Yellower
	1000 Hrs	-13.86	9.92	26.58	31.57	
Hybron-W90 Black	500 Hrs	-1.24	-0.09	1.12	1.67	Darker
	1000 Hrs	-7.03	-0.12	2.81	7.57	

Colourtuff-A90 does not visually change colour. The colour changes detected using a spectrophotometer (Konica Minolta - CM-36dG) are low after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1). The Gloss is satin (Approximately 60GU) and has not changed.

Colourtuff-C85 has visually darkened in colour. The spectrophotometer (Konica Minolta - CM-36dG) has detected a darker colour after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1). The Gloss is satin (Approx. 60 GU) and has not changed.

Tufflon-P80 White has changed to a sandstone colour. The colour is fairly stable once the colour has changed. The Tuffon Lost all gloss.

Hybron-W90 Black has changed a lot less. The colour is still black with no gloss.



Colourtuff-C85



Colourtuff-A90



Hybron-W90 Black



Tufflon-P80 White

Conclusion

The following conclusions are drawn from the above results.

- Colourtuff-A90 colour is unchanged after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1).
- Colourtuff-C85 White darkens after 1000 hours of QUV accelerated weathering (ASTM D154 Cycle 1).
- All aromatic polyurea, hybrid and polyurethane will change colour. The lighter the colour, the greater the yellowing. Yellow and black have significantly less colour change.
- All aromatic polyurea, hybrid and polyurethane will lose their gloss and chalk. The low gloss is consistent and looks good.
- Colourtuff-A90 and C85 both perform well for colour fastness. Aliphatic polyurea does not perform as well as aliphatic polyaspartic and polyurethane
- None of the samples experienced high levels of DFT loss.

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