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Job reference: FWT0161174/0808/A/2

Date: 28th February 2008

Samples received: 15th October 2007

Attention of: Michael Bollom

Testing completed: 28th February 2008

TECHNICAL SERVICES REPORT

Subject: Evaluation of the weathering resistance of 6 GRP panels in accordance with ISO 4892-2

Your reference: Order No. 6401

Results for the 1,000 hour test on the untreated samples have been supplied previously under report referenced FWT0157017/0742/A.

Conditions of Issue:

This report may be forwarded to other parties concerned provided that it is not abbreviated or changed in any way. It must not be published, for example by including it in advertisements, without the prior, written permission of SATRA.

Results given in this report refer only to the samples submitted for analysis and tested by SATRA. Comments are for guidance only and are not part of the reported results. All comments and interpretations are outside the scope of UKAS accreditation and are based on current SATRA knowledge.

A satisfactory test report in no way implies that the product tested is approved by SATRA and no warranty is given as to the performance of the product tested. SATRA shall not be liable for any subsequent loss or damage incurred by the client as a result of information supplied in the report.

Report written by: Matthew Holt
Report signed by: Simon Courtney
Materials Technology - Testing
On behalf of SATRA Technology Centre Ltd



Technical Services Report

EVALUATION OF THE WEATHERING RESISTANCE OF 6 GRP PANELS

SAMPLES SUBMITTED

6 GRP panels referenced:
Blue untreated
Blue treated with A Glaze
Black untreated
Black treated with A Glaze
White untreated
White treated with A Glaze

TESTS CARRIED OUT

ISO 4892-2: 1994 Methods of exposure to xenon arc light sources

Untreated panels have been exposed for a period of 1,000 hours (Roughly 4 years northern European light).

Treated panels have been exposed for 1,000 hours (Roughly 4 years northern European light) and recoated with A Glaze by the customer every 250 hours. The damage caused by the treatment was then reassessed.

RESULTS

Please see tables attached.

CONCLUSIONS

Treated samples:

After each period of 250 hours of accelerated weathering (Estimate of 1 years northern European light) the test samples were recoated with A Glaze treatment by Creative Resins Distribution. This was repeated four times to give a total exposure period of 1,000 hours of accelerated weathering (Estimate of 4 years northern European light). Prior to reapplication of the A Glaze treatment all the samples showed a slight loss of gloss and the blue and black samples showed a slight loss of colour. After treatment the three samples showed a marked improvement with no perceivable difference in gloss or colour from the original samples

These results suggest that if the samples are recoated after 12 months as recommended by yourselves, the coating should prolong the life expectancy of the colour and gloss of the panel.

Untreated samples:

After a period of 1,000 hours of accelerated weathering (Estimate of 4 years northern European light) all samples have shown a severe loss of gloss.

Sample referenced white has shown a small degree of colour change and samples referenced black and blue have shown a moderate degree of colour change and slight chalking of the surface.

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RESULTS

Sample reference:		Blue Treated	
Test Method	Property	Measurement of change in appearance	Result *
ISO 4892-2: 1994	Methods of exposure to xenon arc light sources (1,000 hours and recoated every 250)	Delta E	ΔE 0.82
		Percentage gloss change	+5.3 %
		Damage to surface	None

Sample reference:		Black Treated	
Test Method	Property	Measurement of change in appearance	Result *
ISO 4892-2: 1994	Methods of exposure to xenon arc light sources (1,000 hours and recoated every 250)	Delta E	ΔE 0.41
		Percentage gloss change	+3.2 %
		Damage to surface	None

Sample reference:		White Treated	
Test Method	Property	Measurement of change in appearance	Result *
ISO 4892-2: 1994	Methods of exposure to xenon arc light sources (1,000 hours and recoated every 250)	Delta E	ΔE 0.87
		Percentage gloss change	-10.4 %
		Damage to surface	None

* Worst case result obtained over the period of check points.

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RESULTS CONTINUED

Sample reference:		Blue Untreated	
Test Method	Property	Measurement of change in appearance	Result
ISO 4892-2: 1994	Methods of exposure to xenon arc light sources (250 hours)	Delta E	ΔE 0.85
		Percentage gloss change	-3.1%
		Damage to surface	None
	Methods of exposure to xenon arc light sources (500 hours)	Delta E	ΔE 2.8
		Percentage gloss change	-5.4%
		Damage to surface	None
	Methods of exposure to xenon arc light sources (750 hours)	Delta E	ΔE 3.9
		Percentage gloss change	-27.6%
		Damage to surface	Slight chalking
	Methods of exposure to xenon arc light sources (1,000 hours)	Delta E	ΔE 5.2
		Percentage gloss change	-96.0 %
		Damage to surface	Slight chalking

Technical Services Report

RESULTS CONTINUED

Sample reference:		Black Untreated	
Test Method	Property	Measurement of change in appearance	Result
ISO 4892-2: 1994	Methods of exposure to xenon arc light sources (250 hours)	Delta E	ΔE 0.42
		Percentage gloss change	-5.0%
		Damage to surface	None
	Methods of exposure to xenon arc light sources (500 hours)	Delta E	ΔE 0.8
		Percentage gloss change	-9.3%
		Damage to surface	None
	Methods of exposure to xenon arc light sources (750 hours)	Delta E	ΔE 2.1
		Percentage gloss change	-26.3%
		Damage to surface	Slight chalking
	Methods of exposure to xenon arc light sources (1,000 hours)	Delta E	ΔE 4.8
		Percentage gloss change	-96.9%
		Damage to surface	Slight chalking

Technical Services Report

RESULTS CONTINUED

Sample reference:		White Untreated	
Test Method	Property	Measurement of change in appearance	Result
ISO 4892-2: 1994	Methods of exposure to xenon arc light sources (250 hours)	Delta E	ΔE 0.13
		Percentage gloss change	-25.5%
		Damage to surface	None
	Methods of exposure to xenon arc light sources (500 hours)	Delta E	ΔE 0.44
		Percentage gloss change	-31.8%
		Damage to surface	None
	Methods of exposure to xenon arc light sources (750 hours)	Delta E	ΔE 1.1
		Percentage gloss change	-65.8%
		Damage to surface	Slight chalking
	Methods of exposure to xenon arc light sources (1,000 hours)	Delta E	ΔE 0.81
		Percentage gloss change	-80.0 %
		Damage to surface	Slight chalking