Accelerated Weathering Test

Decoral LAB
Research and Development

FAST VACUUM
series

MRK-010-0034

TEST DI INVECCHIAMENTO ACCELERATO:

Invecchiamento accelerato

Tutti i campioni vengono sottoposti all'irraggiamento di lampade allo xenon ed a cicli umido/secco mediante speciali apparecchiature (Q-Sun, SolarBox).Tali apparecchiature vengono utilizzate in conformità agli standard internazionali imposti dalla norma ISO 11341 rispettando le seguenti impostazioni:

- intensità luminosa, 550±20W/m^2 (290-800 nm)
- temperatura del pannello nero, 65 ± 5°C
- ciclo umido 18 minuti
- ciclo secco 102 minuti

Alla fine dei test, che normalmente hanno una durata minima di 1000 ore, viene valutata la variazione di brillantezza (EN ISO 2813, con angolo di incidenza 60°) ed il cambiamento di colore ΔE (metodo CIELAB ISO 7724/3) rispetto ai valori di partenza. Questo permette di stabilire, in maniera parametrizzata, l'invecchiamento delle varie superfici testate. La corretta conduzione dei test viene verificata attraverso l'utilizzo di campioni in bianco ad invecchiamento noto.

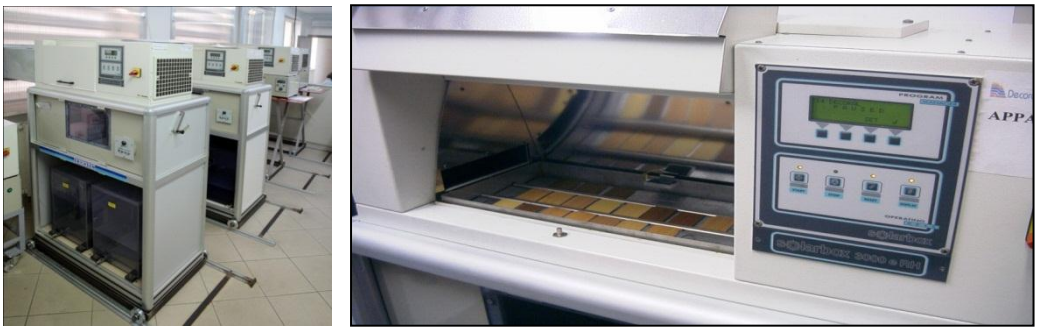

Figure: apparecchiature per l'invecchiamento accelerato.
Pictures: equipment for the Accelerated Weathering Test

Accelerated Weathering Test

All samples are exposed to radiation of Xenon lamps and to wet/dry cycles by special equipment (Q-Sun, SOLARBOX). Such equipment is used in accordance with international standards imposed by norm ISO 11341, i.e. complying with the following settings:

- light intensity, 550 ± 20 W / m^2 (290-800 nm)
- black panel temperature, 65 ± 5 ° C
- wet cycle 18 minutes
- dry cycle 102 minutes.

At the end of the test, whose minimum duration is 1000 hours, Residual Gloss (EN ISO 2813, with an angle of incidence 60°) and Colour Variation ΔE (CIELAB method - ISO 7724 / 3) are measured comparing pre-test values. In this way it is possible to evaluate the aging of surfaces using standard indexes. The accuracy of the test is verified through the use of samples in white, whose aging behaviour is know.

ID Test Report	PROD. VERNIC	COD. FILM	PROG. N°	IMMAGINI
TR-IA-38-2013	8G-921-A005	1430/11M	38	
TR-IA-39-2013	8G-921-A005	2305/21M	39	
TR-IA-36-2013	8G-953-A005	1430/10M	36	
TR-IA-37-2013	8G-953-A005	2305/21M	37	
TR-IA-41-2013	8G-972-A005	1827/12M	41	
TR-IA-40-2013	8G-972-A005	2305/17M	40	

Test Report: Accelerated Weathering Test

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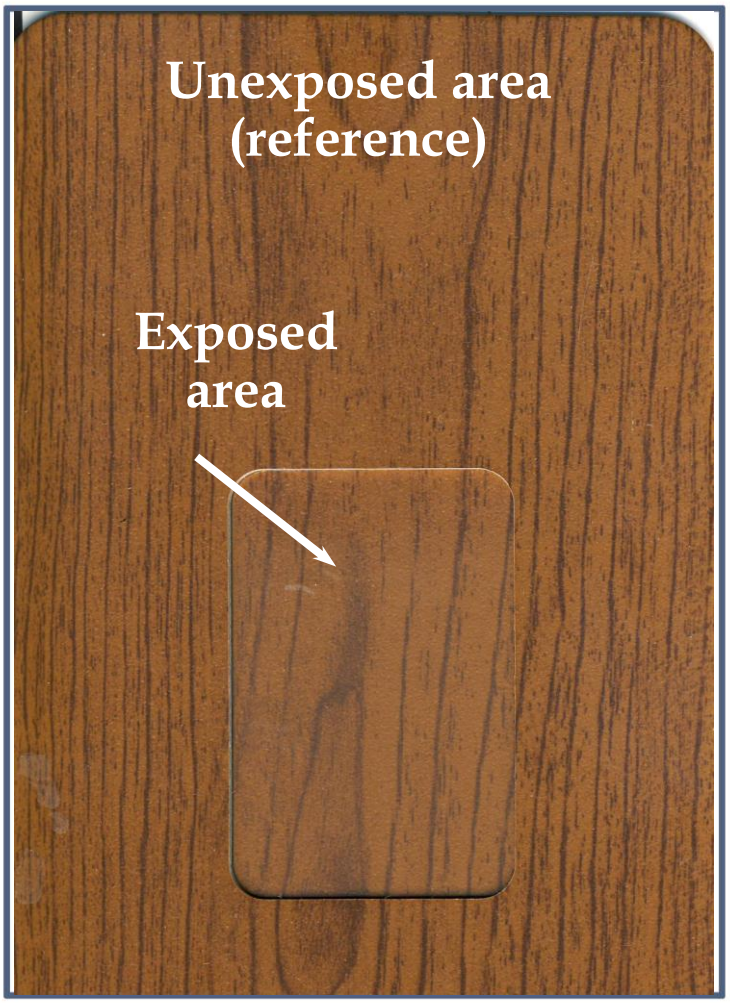
Laboratory Test

No. 359

Device: QSun 3000

Total duration: 898h



LAB. ID NUMBER: 28746
POWDER COATING: 8G-953-A005
HEAT TRANSFER FILM: 1430/10M
Colour variation(ΔE): **1,13**
residual gloss: **55%**

Technical Remarks

Sufficient residual gloss and very low colour variation (ΔE), after 898 hours on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Laboratory Test

No. 359

Device: QSun 3000

Total duration: 898h

LAB. ID NUMBER: 28747
POWDER COATING: 8G-953-A005
HEAT TRANSFER FILM: 2305/21M
Colour variation(ΔE): **0,8**
residual gloss: **64%**

Technical Remarks

Sufficient residual gloss and very low colour variation (ΔE), after 898 hours on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

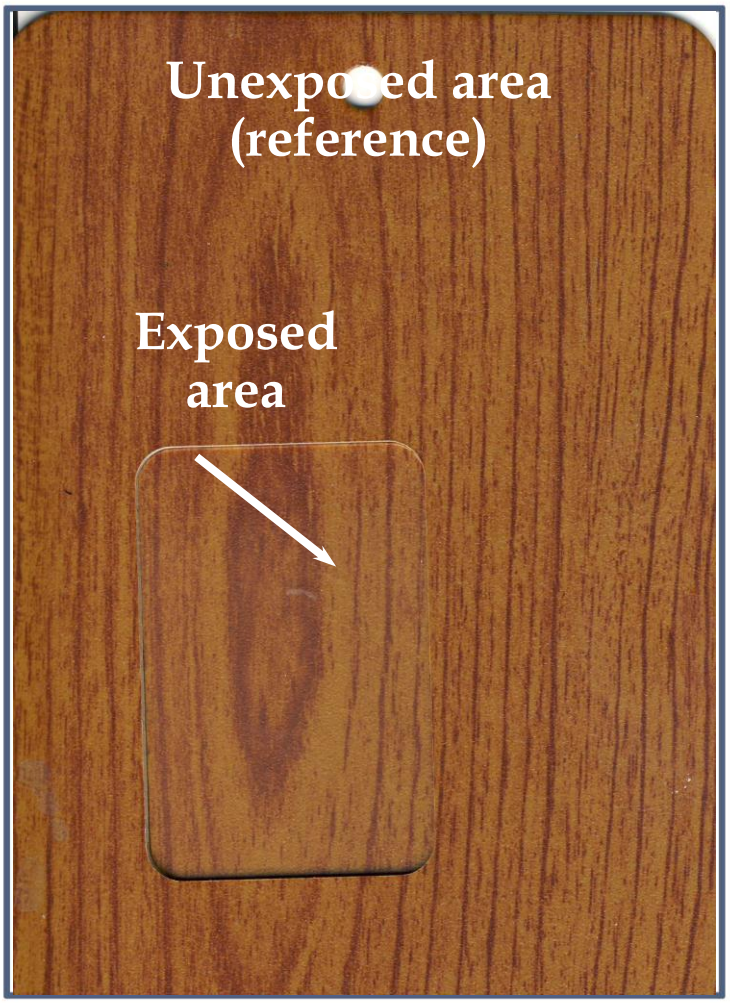
Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Laboratory Test

No. 359

Device: QSun 3000

Total duration: 898h



LAB. ID NUMBER: 28748
POWDER COATING: 8G-921-A005
HEAT TRANSFER FILM: 1430/11M
Colour variation(ΔE): **1,34**
residual gloss: **76%**

Technical Remarks

Good residual gloss and very low colour variation (ΔE), after 898 hours on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

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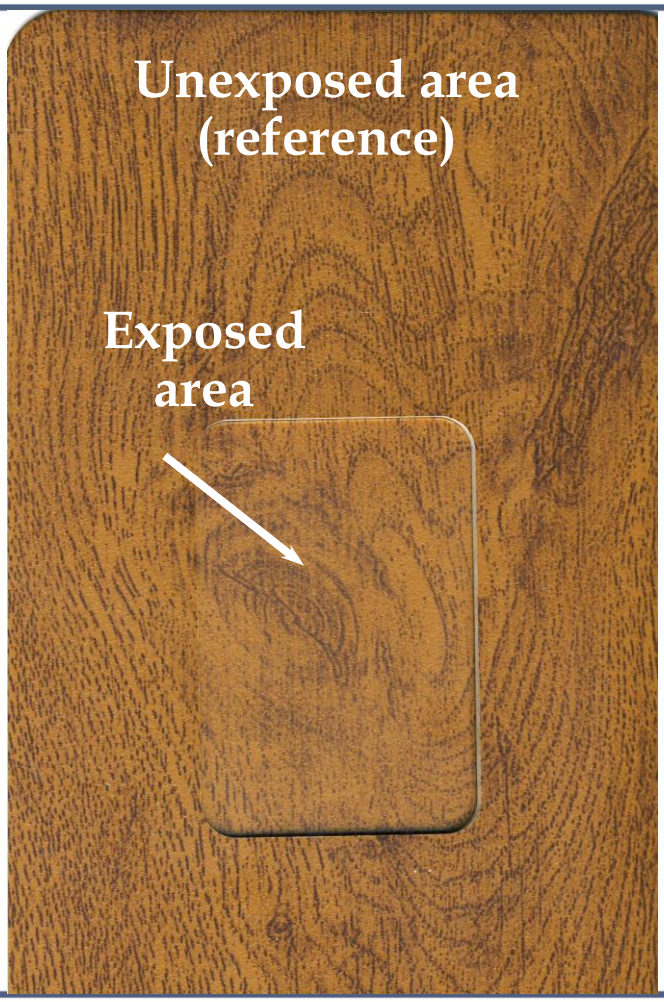
Laboratory Test

No. 359

Device: QSun 3000

Total duration: 898h



LAB. ID NUMBER: 28749
POWDER COATING: 8G-921-A005
HEAT TRANSFER FILM: 2305/21M
Colour variation(ΔE): **1,14**
residual gloss: **78%**

Technical Remarks

Good residual gloss and very low colour variation (ΔE), after 898 hours on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

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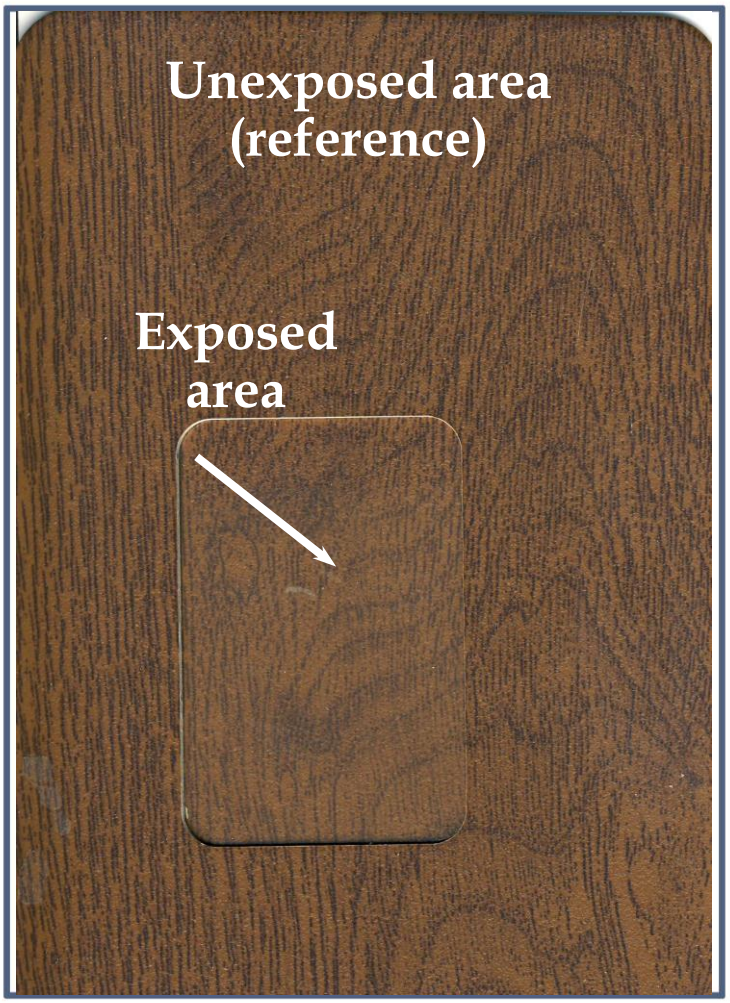
Laboratory Test	No. 359	Device: QSun 3000	Total duration: 898h



LAB. ID NUMBER: 28750
POWDER COATING: 8G-972-A005
HEAT TRANSFER FILM: 2305/17M
Colour variation(ΔE): **1,07**
residual gloss: **57%**

Technical Remarks

Good residual gloss and very low colour variation (ΔE), after 898 hours on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.

Test Report: Accelerated Weathering Test

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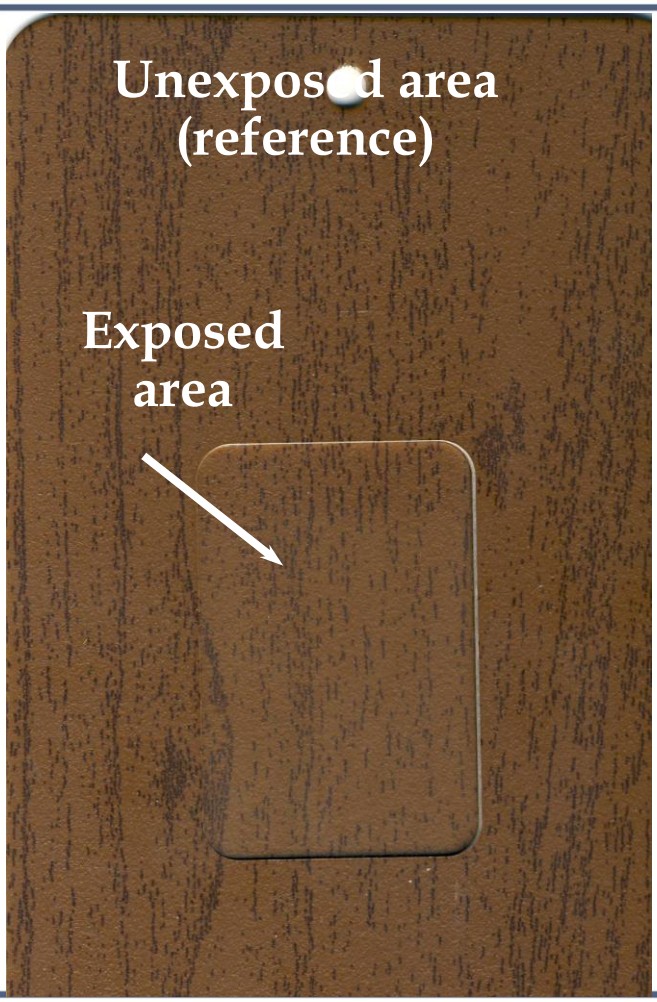
Laboratory Test

No. 359

Device: QSun 3000

Total duration: 898h



LAB. ID NUMBER: 28751
POWDER COATING: 8G-972-A005
HEAT TRANSFER FILM: 1827/12M
Colour variation(ΔE): **0,42**
residual gloss: **64%**

Technical Remarks

Good residual gloss and very low colour variation (ΔE), after 898 hours on decorated sample.

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers. However, the resistance against accelerated weathering test is only one of the conditions necessary for the evaluation of the resistance of the finished product. For a final assessment see further analysis on natural exposure in Florida.