

# Accelerated Weathering Test



## OTTONE ANTICO

series



MRK-010-0218

# 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,  $550 \pm 20 \text{ W/m}^2$  (290-800 nm)
- temperatura del pannello nero,  $65 \pm 5^\circ\text{C}$
- 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  $60^\circ$ ) ed il cambiamento di colore  $\Delta E$  (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,  $550 \pm 20 \text{ W / m}^2$  (290-800 nm)
- black panel temperature,  $65 \pm 5^\circ\text{C}$
- 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  $60^\circ$ ) and Colour Variation  $\Delta E$  (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 known.

ID Test Report	PROD. VERNIC	COD. FILM	PROG. N°	IMMAGINI
TR-IA-298-2012	9B-058-A004	6053/01	298	
TR-IA-301-2012	9C-058-A004	6053/01	301	
TR-IA-297-2012	9B-058-A004	6052/01	297	
TR-IA-300-2012	9C-058-A004	6052/01	300	
TR-IA-296-2012	9B-058-A004	5007/01	296	
TR-IA-299-2012	9C-058-A004	5007/01	299	





Laboratory  
Test

No. 343



Device:  
QSun 3000



Total duration:  
1276h

Unexposed area  
(reference)

Exposed  
area



Unexposed area  
(reference)

Exposed  
area



LAB. ID NUMBER: 27755  
POWDER COATING: 9B-058-A004  
HEAT TRANSFER FILM: --  
colour variation: **1,44**  
residual gloss: **93%**

LAB. ID NUMBER: 27757  
POWDER COATING: 9B-058-A004  
HEAT TRANSFER FILM: 5007/01  
colour variation: **1,97**  
residual gloss: **101%**

#### Technical Remarks

Excellent residual gloss and very low colour variation ( $\Delta E$ ), after 1276 hours.

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. 343



Device:  
QSun 3000



Total duration:  
1276h

Unexposed area  
(reference)

Exposed  
area



Unexposed area  
(reference)

Exposed  
area



LAB. ID NUMBER: 27755  
POWDER COATING: 9B-058-A004  
HEAT TRANSFER FILM: --  
colour variation: **1,44**  
residual gloss: **93%**

LAB. ID NUMBER: 27759  
POWDER COATING: 9B-058-A004  
HEAT TRANSFER FILM: 6052/01  
colour variation: **1,52**  
residual gloss: **95%**

#### Technical Remarks

Excellent residual gloss and very low colour variation ( $\Delta E$ ), after 1276 hours.

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. 343



Device:  
QSun 3000



Total duration:  
1276h

Unexposed area  
(reference)

Exposed  
area



Unexposed area  
(reference)

Exposed  
area



LAB. ID NUMBER: 27755  
POWDER COATING: 9B-058-A004  
HEAT TRANSFER FILM: --  
colour variation: **1,44**  
residual gloss: **93%**

LAB. ID NUMBER: 27761  
POWDER COATING: 9B-058-A004  
HEAT TRANSFER FILM: 6053/01  
colour variation: **1,35**  
residual gloss: **102%**

#### Technical Remarks

Excellent residual gloss and very low colour variation ( $\Delta E$ ), after 1276 hours.

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. 343



Device:  
QSun 3000



Total duration:  
1276h

Unexposed area  
(reference)

Exposed  
area



Unexposed area  
(reference)

Exposed  
area



LAB. ID NUMBER: 27756  
POWDER COATING: 9C-058-A004  
HEAT TRANSFER FILM: --  
colour variation: **0,31**  
residual gloss: **101%**

LAB. ID NUMBER: 27758  
POWDER COATING: 9C-058-A004  
HEAT TRANSFER FILM: 5007/01  
colour variation: **0,65**  
residual gloss: **103%**

#### Technical Remarks

Excellent residual gloss and very low colour variation ( $\Delta E$ ), after 1276 hours.

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. 343



Device:  
QSun 3000



Total duration:  
1276h

Unexposed area  
(reference)

Exposed  
area



Unexposed area  
(reference)

Exposed  
area



LAB. ID NUMBER: 27756  
POWDER COATING: 9C-058-A004  
HEAT TRANSFER FILM: --  
colour variation: **0,31**  
residual gloss: **101%**

LAB. ID NUMBER: 27760  
POWDER COATING: 9C-058-A004  
HEAT TRANSFER FILM: 6052/01  
colour variation: **0,51**  
residual gloss: **115%**

#### Technical Remarks

Excellent residual gloss and very low colour variation ( $\Delta E$ ), after 1276 hours.

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. 343**



**Device:  
QSun 3000**



**Total duration:  
1276h**

**Unexposed area  
(reference)**

**Exposed  
area**



**Unexposed area  
(reference)**

**Exposed  
area**



LAB. ID NUMBER: 27756  
POWDER COATING: 9C-058-A004  
HEAT TRANSFER FILM: --  
colour variation: **0,31**  
residual gloss: **101%**

LAB. ID NUMBER: 27762  
POWDER COATING: 9C-058-A004  
HEAT TRANSFER FILM: 6053/01  
colour variation: **0,38**  
residual gloss: **115%**

#### **Technical Remarks**

Excellent residual gloss and very low colour variation ( $\Delta E$ ), after 1276 hours.

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.