Accelerated Weathering Test

Gicolor S.r.l.

NATURE
series

MRK-010-0303

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.

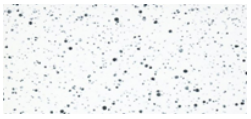
Figure: apparecchiature per l'invecchiamento accelerato.
Pictures: equipment for the Accelerated Weathering Test

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-NE-178-2015	Nature-001		178	
TR-NE-179-2015	Nature-002	solo base	179	
TR-NE-180-2015	Nature-003	solo base	180	
TR-NE-181-2015	Nature-004	solo base	181	
TR-NE-182-2015	Nature-005	solo base	182	
TR-NE-183-2015	Nature-007	solo base	183	
TR-NE-184-2015	Nature-008	solo base	184	

Test Report: Florida Natural Exposure

GiColor S.r.l.

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Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32773
POWDER COATING: Nature-01
HEAT TRANSFER FILM: --
Colour variation (ΔE): **1,06**
residual gloss: **89%**

Technical Remarks

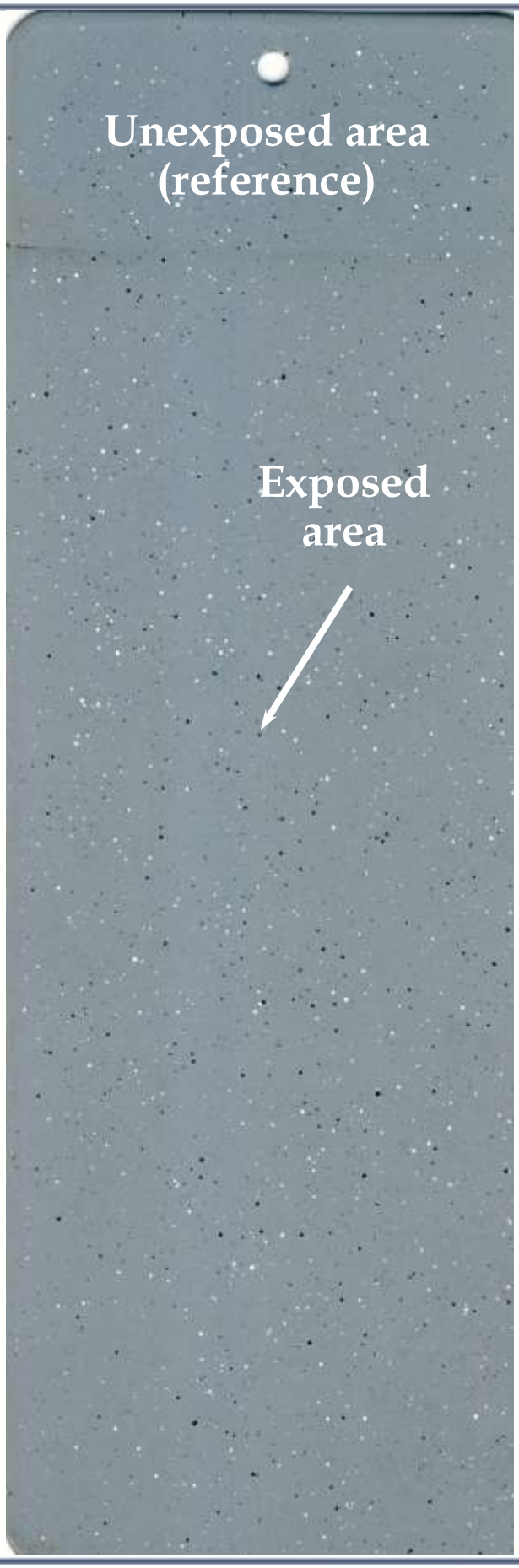
Excellent residual gloss and low colour variation (ΔE).

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS
The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).



Test Report: Florida Natural Exposure

Gicolor S.r.l.

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Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32774
POWDER COATING: Nature-02
HEAT TRANSFER FILM: --
Colour variation (ΔE): **0,42**
residual gloss: **53%**

Technical Remarks

Suffcient residual gloss and low colour variation (ΔE).

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS
The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).

Test Report: Florida Natural Exposure

Gicolor S.r.l.

180

Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32775
POWDER COATING: Nature-03
HEAT TRANSFER FILM: --
Colour variation (ΔE): **0,49**
residual gloss: **83%**

Technical Remarks

Good residual gloss and low colour variation (ΔE).

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS

The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).

Test Report: Florida Natural Exposure

Gicolor S.r.l.

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Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32776
POWDER COATING: Nature-04
HEAT TRANSFER FILM: --
Colour variation (ΔE): **0,27**
residual gloss: **90%**

Technical Remarks

Excellent residual gloss and low colour variation (ΔE).

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS

The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).

Test Report: Florida Natural Exposure

Gicolor S.r.l.

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Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32777
POWDER COATING: Nature-05
HEAT TRANSFER FILM: --
Colour variation (ΔE): **1,39**
residual gloss: **70%**

Technical Remarks

Good residual gloss and low colour variation (ΔE).

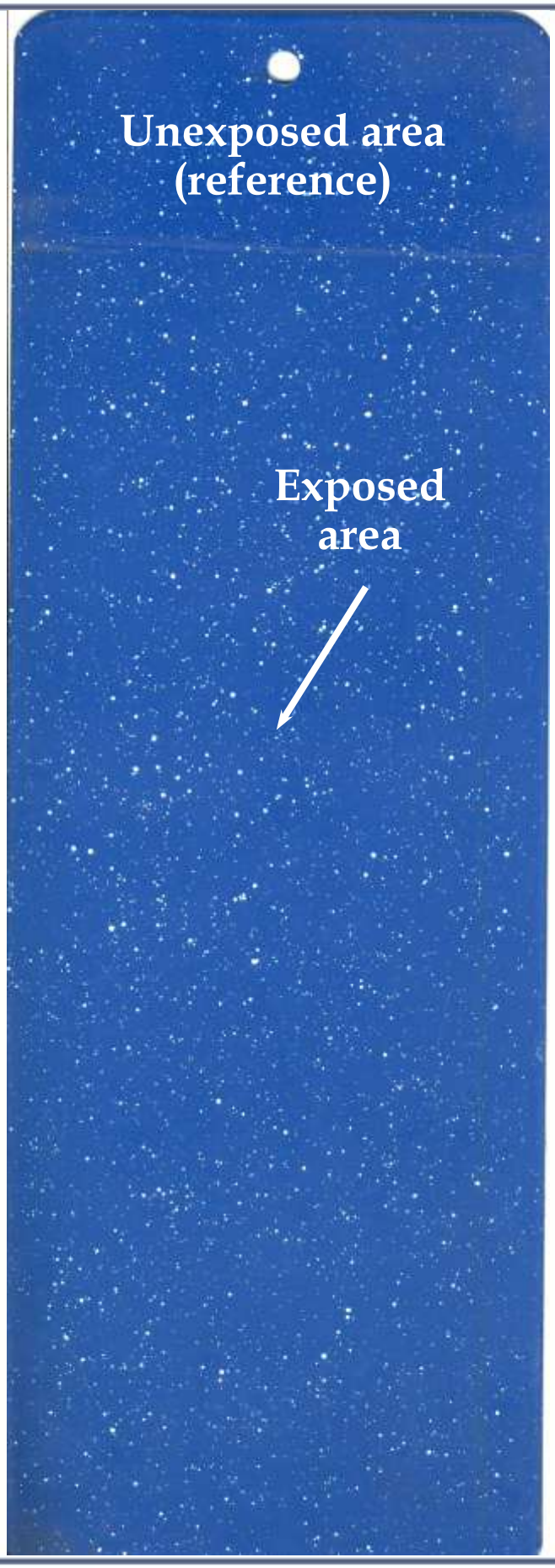
Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS

The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).



Test Report: Florida Natural Exposure

GiColor S.r.l.

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Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32779
POWDER COATING: Nature-07
HEAT TRANSFER FILM: --
Colour variation (ΔE): **3,66**
residual gloss: **51%**

Technical Remarks

Sufficient residual gloss and low colour variation (ΔE).

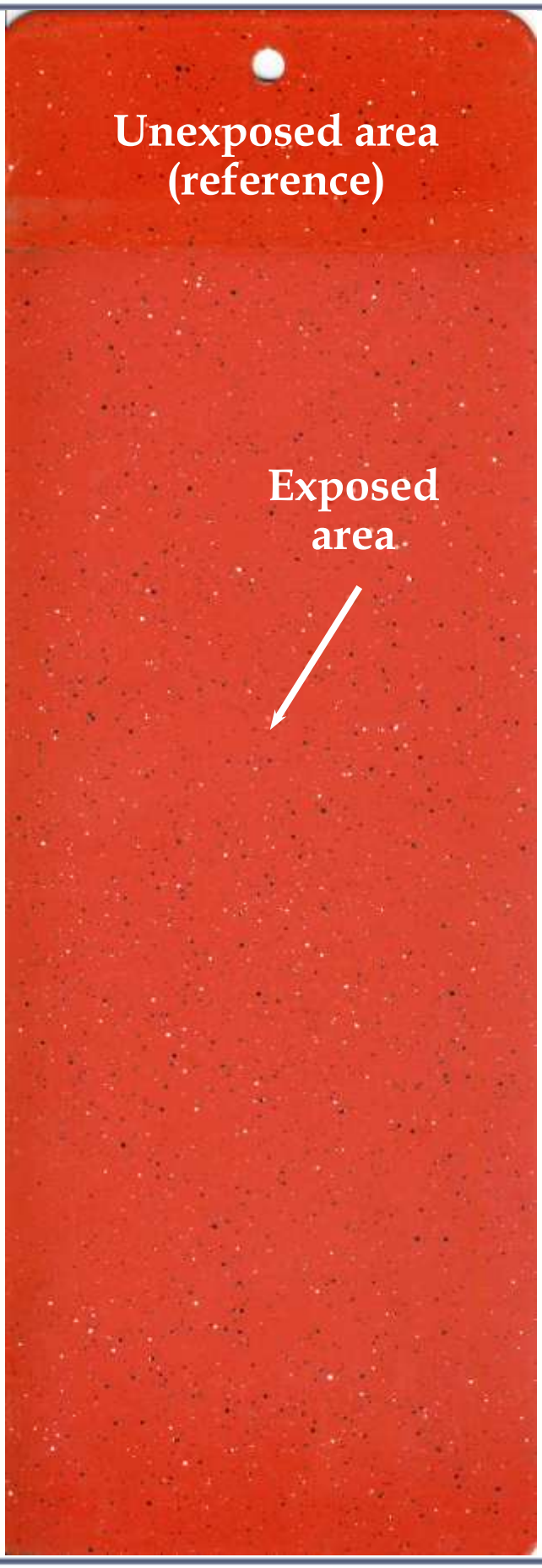
Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS

The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).



Test Report: Florida Natural Exposure

Gicolor S.r.l.

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Florida Test

Total duration: 12 months

EXPOSURE PERIOD:

FROM: **25/11/2013**

TO: **25/11/2014**

LAB. ID NUMBER: 32780
POWDER COATING: Nature-08
HEAT TRANSFER FILM: --
Colour variation (ΔE): **0,85**
residual gloss: **63%**

Technical Remarks

Sufficient residual gloss and low colour variation (ΔE).

Technical Opinion:

Suitable for OUTDOOR USE

Test was carried on samples prepared according to technical specifications supplied by raw materials manufacturers.

QUALICOAT REQUIREMENTS
The residual gloss shall be at least 50% of the original gloss. The ΔE values shall not exceed the maximum values prescribed in the annexed table (see Appendix A7 of Qualicoat Specifications).