



REPORT 25-15

OBJECT: Analyse the behaviour of different coatings, sublimated with coloured stripes printed by a plotter, and exposed to accelerated weathering test.

REQUESTED BY: **Decoral System**

OBJECT: Analyse the behaviour of different coatings, sublimated with coloured stripes printed by a plotter, and exposed to accelerated weathering test.

1. Purpose:

Evaluating the behaviour of different sublimated coatings available on the market to the accelerated weathering test.

2. Samples description:

The data of the tested samples are reported in the table below:

ID Lab.	Sample type	Sublimatic paint product	Thickness
1	Ferrous alloy panel	Pre-painted white and glossy colaminated	140 µm
2	Ferrous alloy panel	Pre-painted white and glossy colaminated	136 µm
3	Ferrous alloy panel	Double-layer matt liquid paint	204 µm
4	Aluminium panel	Double-layer glossy liquid paint	176 µm
5	Ferrous alloy panel	Pre-painted white and glossy colaminated	60 µm
6	Aluminium panel	Matt white liquid paint	45 µm
7	Aluminium panel	PE 411 + DS-0407S	153 µm
8	Aluminium panel	PE 411 + DS-0810S	145 µm

Table 1: samples description

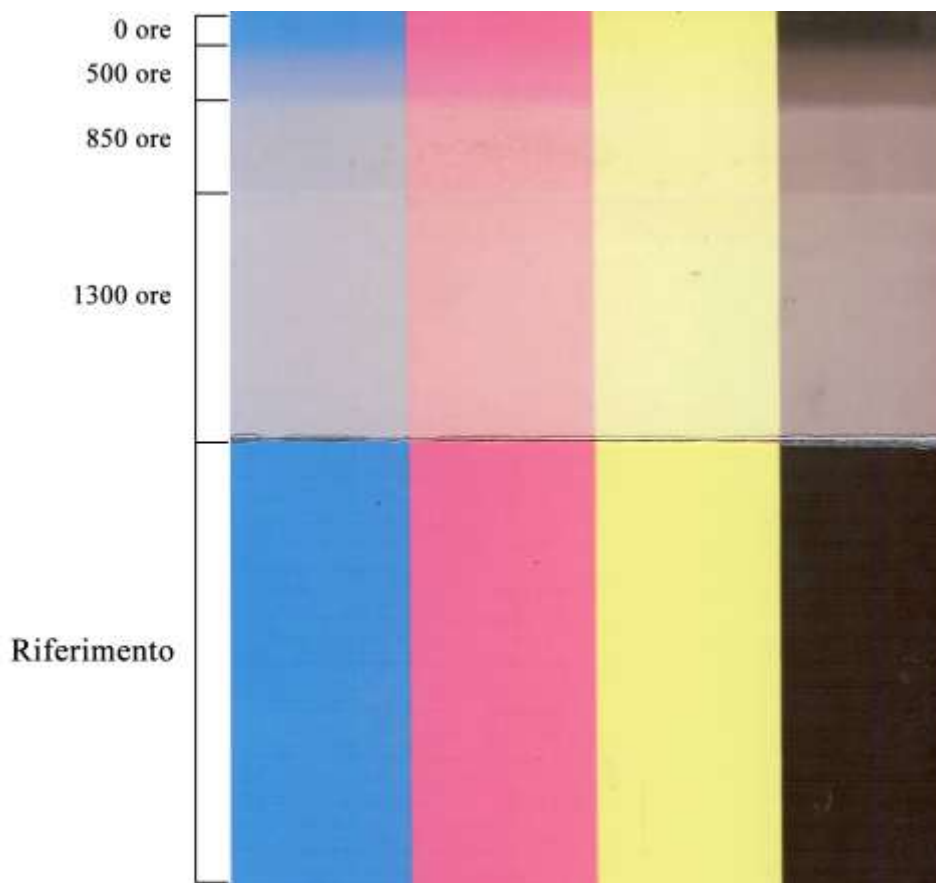
Equipment for the test :

QSun 3000

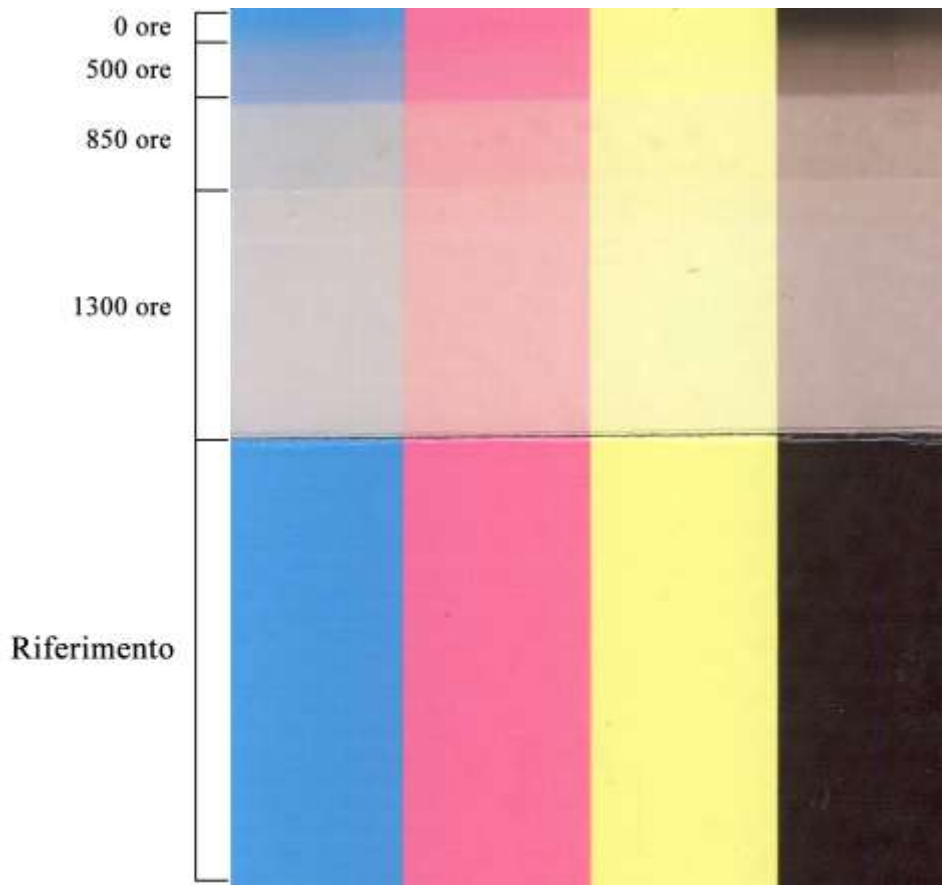
Glossmeter Elcometer Geom. 60° (Registration number GFE OHO 78807 C)
Standard reference: ISO 2813: 2002

3. Tests:

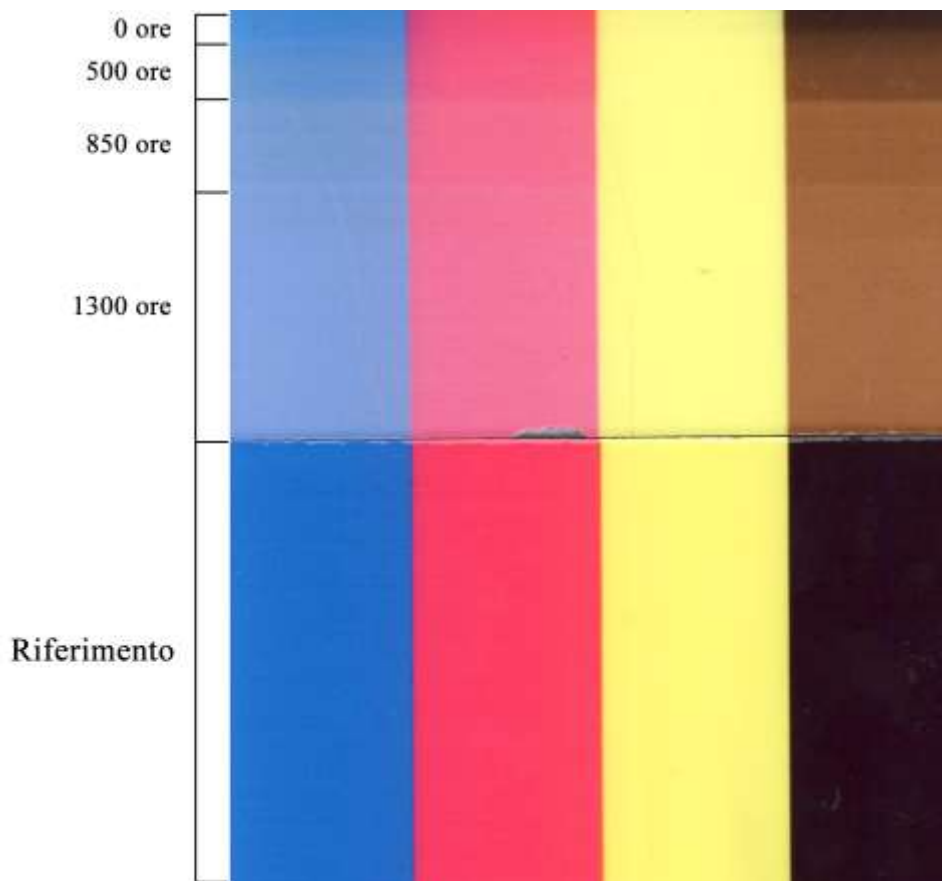
From the samples, sublimated with coloured stripes printed by plotter, were obtained 60 x 100 mm panels for accelerated weathering test. The test lasted totally 1300 hours. From beginning of the test, at intervals of ca. 400/450 h, the covering of the samples was increased by 1cm each time. See pictures below:



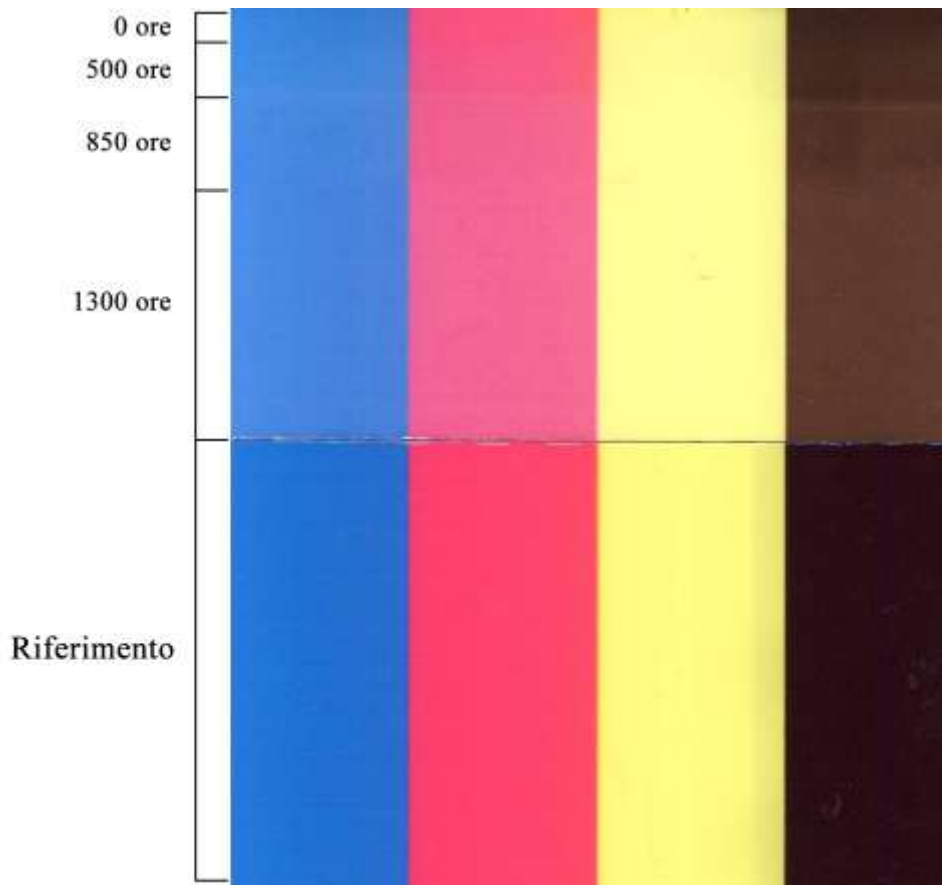
Picture 1: Pre-painted white and glossy colaminated



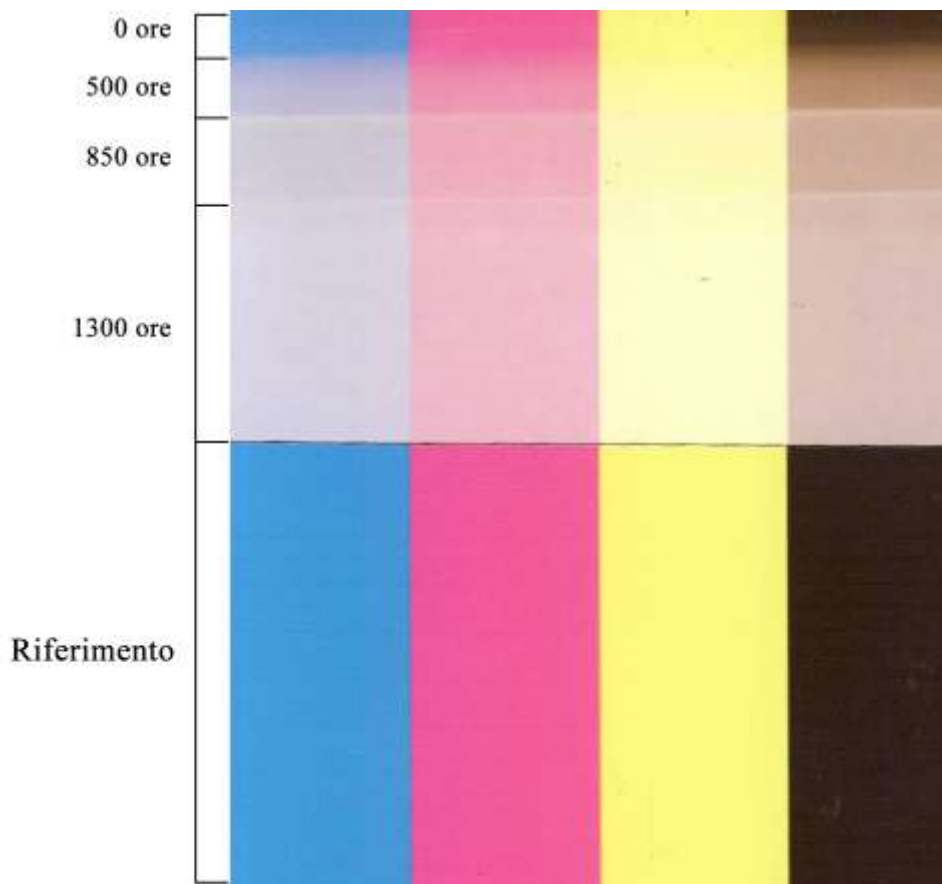
Picture 2: Pre-painted white and glossy colaminated



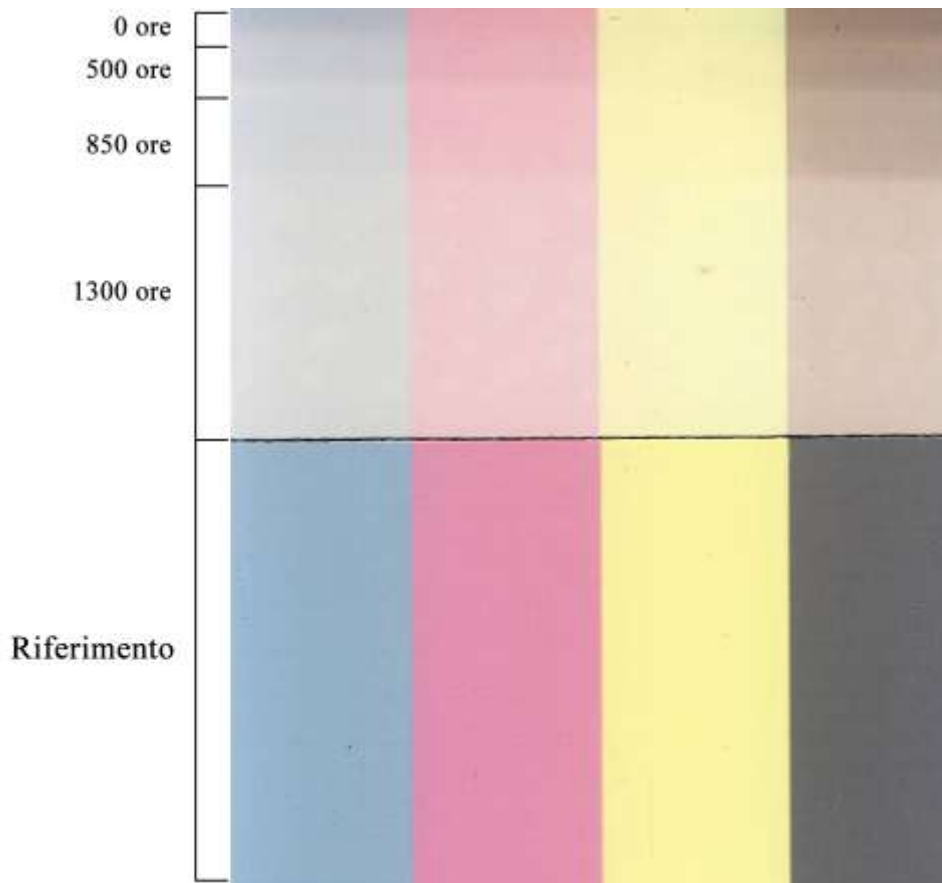
Picture 3: Double-layer matt liquid paint



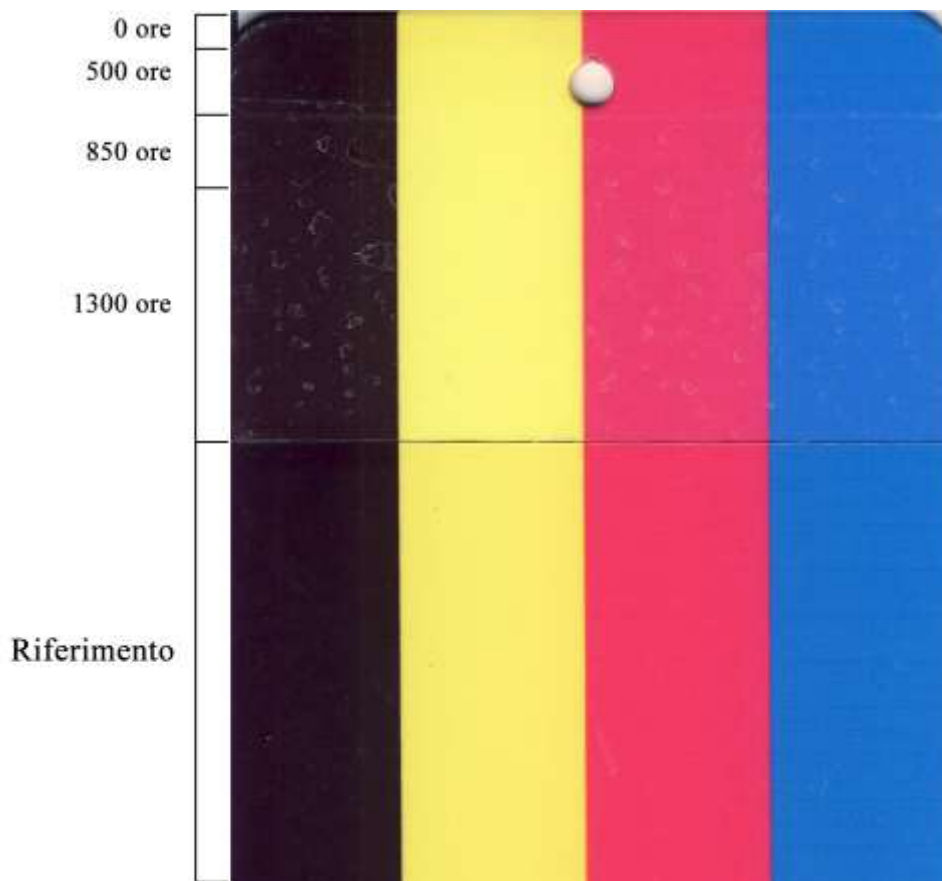
Picture 4: Double-layer glossy liquid paint



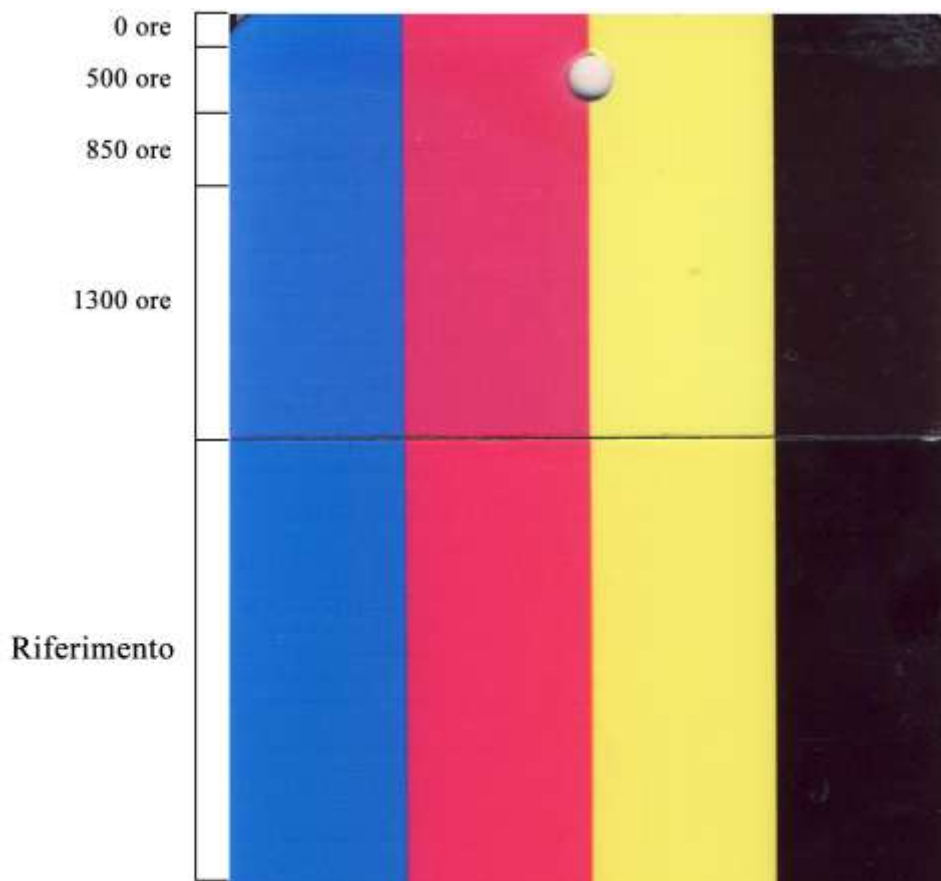
Picture 5: Pre-painted white and glossy colaminated



Picture 6: Matt white liquid paint



Picture 7: PE 411 + DS-0407S



Picture 8: PE 411 + DS-0810S

4. Conclusions:

All samples from 1 to 6 show an evident degradation, visible to naked eye after only few hours. Some samples show also surface defects (blistering and cracking), appeared during the test. The tested samples available on market seem not to protect the sublimatic inks.

The alternatives, prepared with coating products Decoral System, which are especially designed for sublimation, show much lower degradation values, not visible to naked eye, even after 1300 hours (sample 7 and 8).

The special additives in the formulations work in synergy, protecting the pigments sublimated inside the coating layer.

5. Attachments:

- Original samples (Lab archive)

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