TECHNICAL TOOLS

Test and Technical documentation

MRK-012-0014R2

LIGHT-XXX

Sublimation powder coatings with special photoluminescent properties

Information:

1. *Product features*
2. *Technical information*
3. *Variants and special formulations*
4. *Product application*
5. *Accelerated weathering test*
6. *Possible usage*

Light-XXX

Sublimation powder coatings with photoluminescent properties

1.PRODUCT FEATURES

The main feature of Light series is photoluminescence: thanks to special additives, these transparent powder coatings can glow in the dark after exposure to light, thus making the surface photoluminescent.

Figure 1: Example of application of the Light series powder coating

2. TECHNICAL INFORMATION

TECHNICAL DATA

Chemical Nature	**MODIFIED POLYURETHANE**
Class resistance	INDOOR ONLY
Yield (Surface/mass)	13 m^2/kg
Specific Weight	1,20 ± 0,09 g/cm^3

APPLICATION AND CURING CYCLE

Available for corona charging.

Curing Cycle:

- **20 minutes at 200°C** (metal temperature)

Recommended thickness: 60 microns – yield 13.1 m^2/Kg,
70 microns – yield 11.2 m^2/Kg,
80 microns – yield 9.8 m^2/Kg.

Test	Standard reference	Result
Buchholz	ISO 2815	ok
Adhesion	ISO 2409	ok
Bending	ISO 1519	ok, no detachment
Direct Impact Test	ASTM D2794	ok, no detachment

The powders of the *Light* series have been formulated in 3 different colours, visible when the light previously absorbed is emitted:

- Light-001 → YELLOW coloration in the dark
- Light-002 → GREEN coloration in the dark
- Light-003 → BLUE coloration in the dark

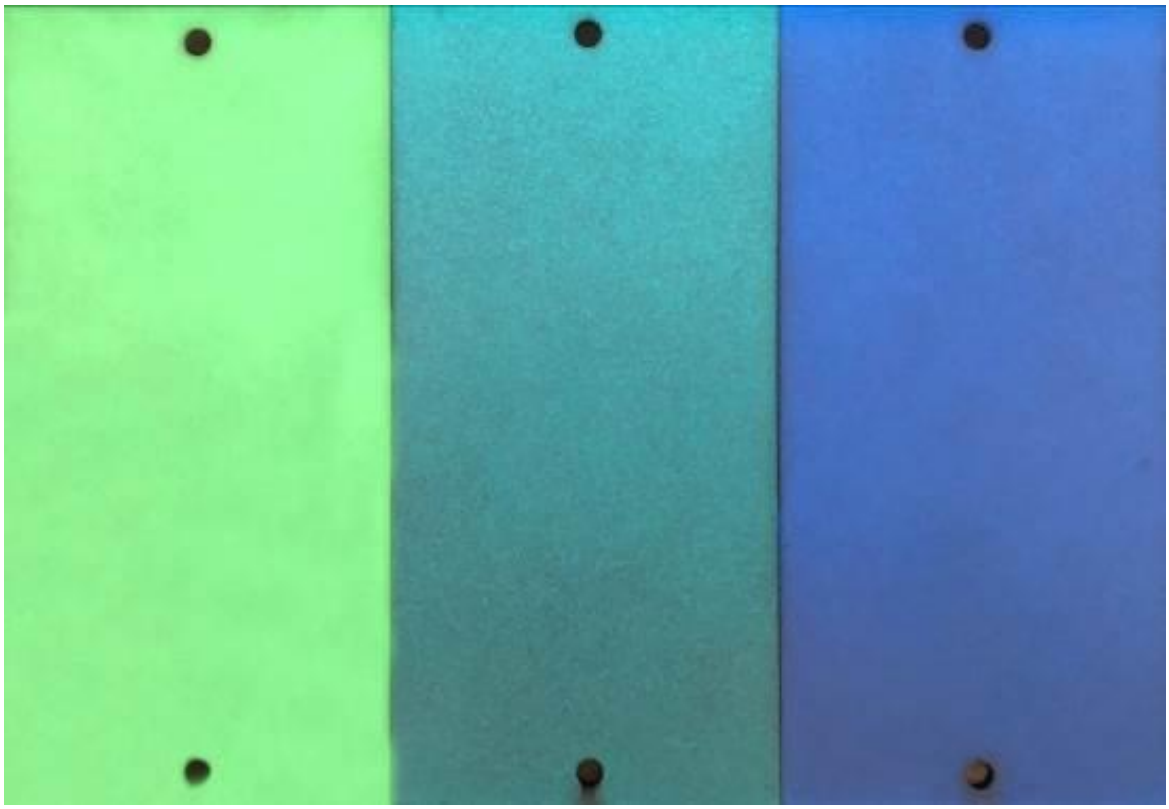

Figure 2: Light-001 (**Yellow**) – Light-002 (**Green**) – Light-003 (**Blue**)

3. VARIANTS AND SPECIAL FORMULATIONS

On customer's request, powder coatings are available in the following versions:

- Antimicrobial;
- Low cross-linking temperature;
- Textured;
- Glossy.

4. PRODUCT APPLICATION

It is recommended to apply a second coat to take full advantage of the features of photoluminescent powder coatings:

- *First Layer*: PE 411 (White polyester powder), in order to fully enhance the photoluminescent properties of the *Light* series powder coatings;

- *Second Layer*: Light series powder coating, transparent.

N.B. – The photo-emission must be preceded by adequate exposure to light sources: 10 minutes under artificial lights or just 5 minutes under natural light are enough to obtain a significant luminescence. Light emission is immediate and intense for one hour, then it continues for 10 hours at lower intensity.

N.B. – If the surface has been decorated with heat-transfer technology, light emission is strongly limited to the precise spots where the inks are, and it is totally absent in the case of black pigments: it is thus possible to obtain dramatic contrast effects between the dark spots of the decoration and the glowing surface.

Figure 3: Example of application of *Light* series powder coatings

5. ACCELERATED WEATHERING TEST

Light series powder coatings have been subjected to the accelered weathering test to evaluate their weather resistance and suitability for outdoor use. The test has been performed on samples painted with PE 411 + Light-001 and PE 411 + Light-002, placed into our laboratory machineries for 300 hours.

PE 411 + Light-001

PE 411 + Light-002

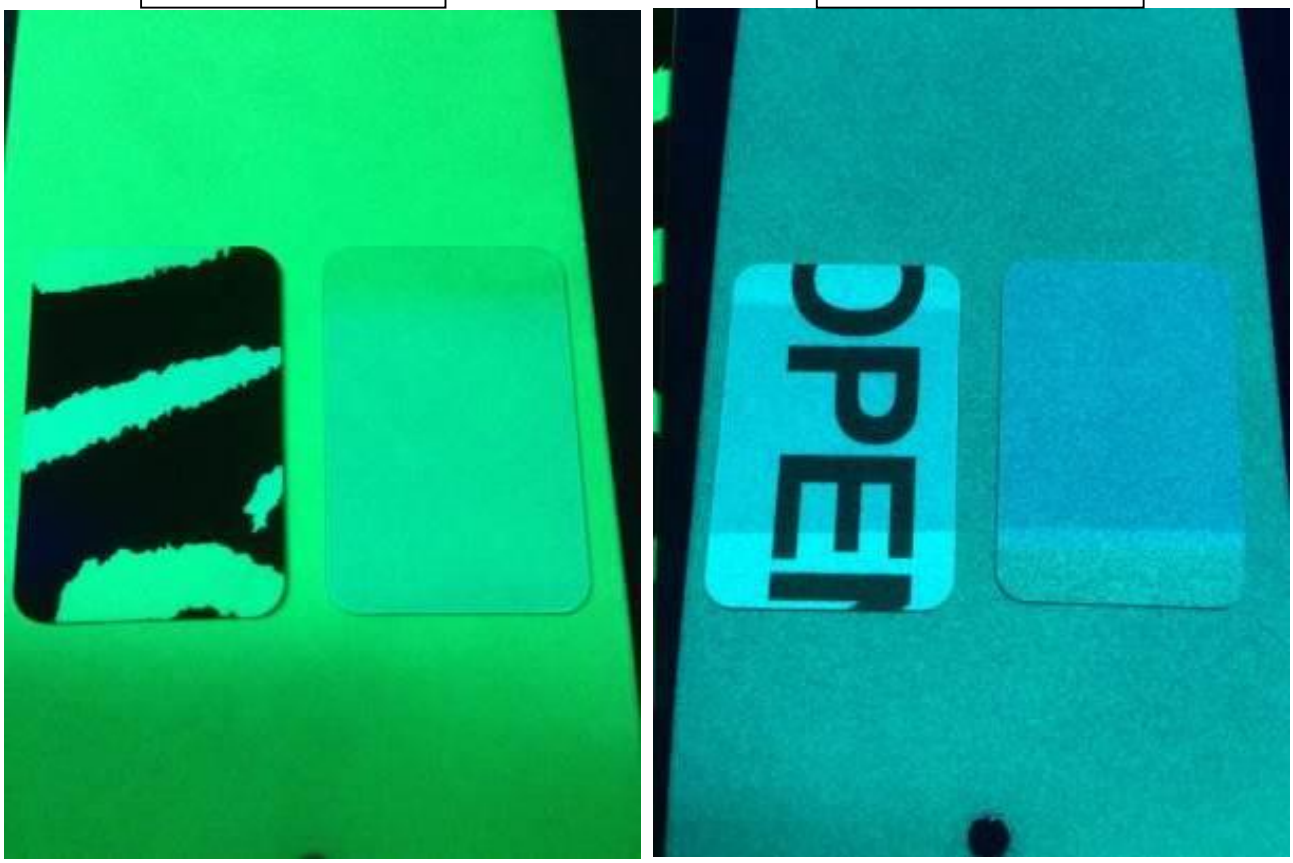

Figure 4: Sample after 300 hours of exposure

CONCLUSION

The test results (pictures here above) showed that powder coatings of the Light series are not suitable for outdoor use but only for indoor use.

6. POSSIBLE USAGE

Besides offering original and striking design solutions, these powder coatings are suitable for use with any type of signages and signboards. The application possibilities of Light series powders are endless. For instance, they can be used to create breathtaking effects.

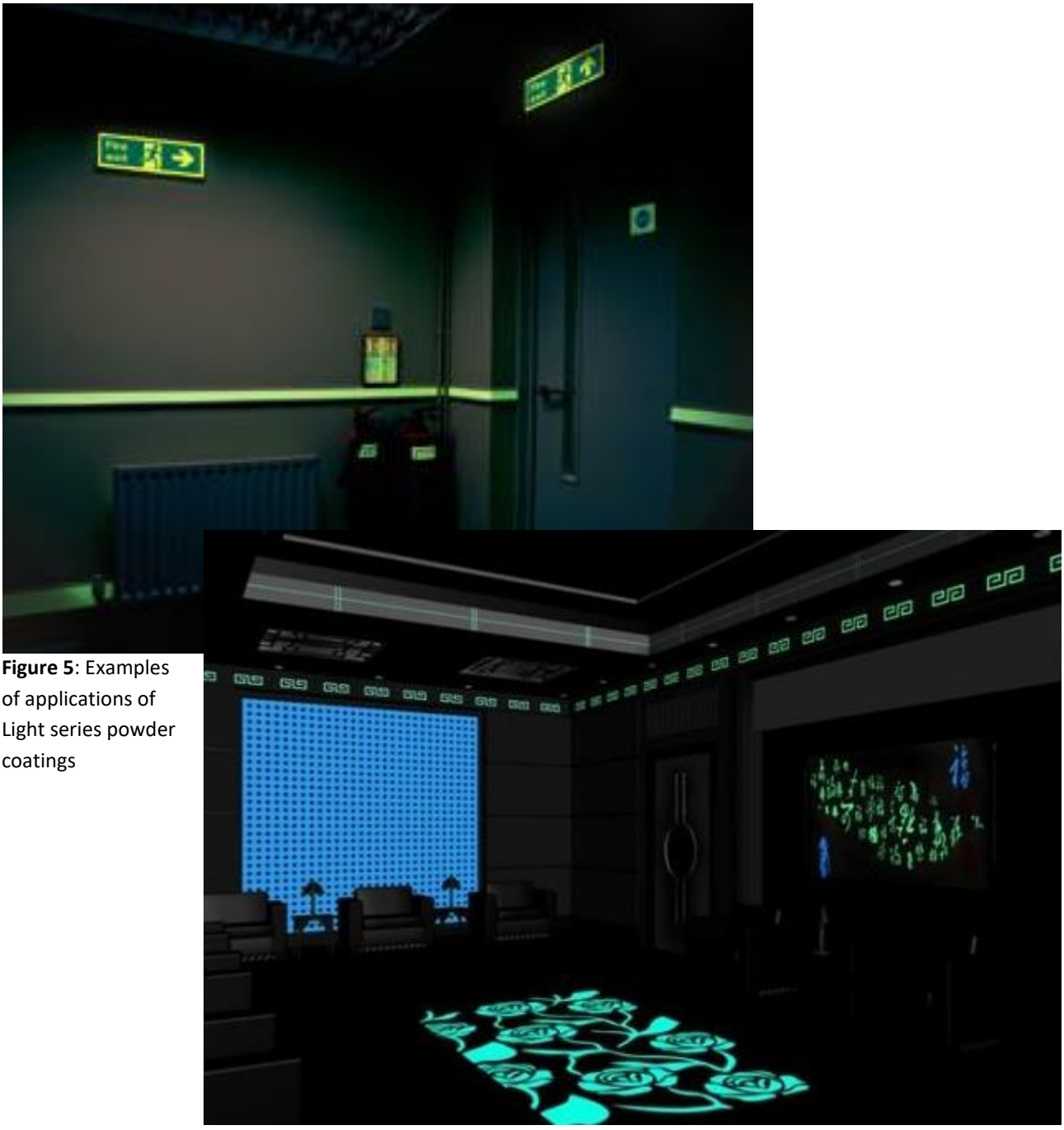

Figure 5: Examples of applications of Light series powder coatings

Dedicated marketing presentation:

- MRK-005-0031R3

Marchi di qualità registrati di Decoral System:

DECORAL SYSTEM S.R.L.

Viale del Lavoro, 5 - Arcole (VERONA) Italy- Tel. +39 045 7639111 - Fax +39 045 7639100

Email: info@decoral-system.com – Sito web: www.decoral-system.com