Brillux Industrial Coatings

Technical Data Sheet

Lumifekt Powder PE 5989

Phosphorescent clear coating powder with polyester base as a phosphorescent coating for functional (e.g. safety sector) or decorative applications on interior and exterior surfaces silk matt

Basis
Polyester resin

Colors
Luminescent green
(in daylight: greenish white)

Gloss grade
Silk matt

Properties
- long-lasting green luminescent effect [1)]
- good weather resistance
- high gloss and color stability
- no change in the luminescent effect due to weathering
- after complete curing or cross-linking, the coating film poses no health risks

1) Note: When the eye has time to adjust to the dark, the visibility of the luminescent effect improves considerably. This compensates excellently for the significant decline of the luminescent effect during the first 30 minutes. A daylight fluorescent lamp performs especially well as an excitation source (distance approx. 1 m, 15–30 min.).

Field of Application
As a high quality, functional or decorative coating for diverse applications,
e.g. the safety sector (escape route signs, information signs, directional arrows,
stair railings, door frames, switches, switch boxes, etc.),
toys, bedroom furnishings (e.g. handles, lamps, etc.).

Technical data

Density
1.41 to 1.47 g/cm³
(in accordance with DIN ISO 8130-2)

Theoretical coverage
approx. 690 m²/kg
(with 1 µm dry film thickness)

Grain distribution

< 9%	< 10 µm
43 ± 2%	< 32 µm
> 95%	< 90 µm

(laser measuring instrument)

Cross-cut test
Gt 0 C
(in accordance with DIN EN ISO 2409)

Erichsen cupping
≥ 6 mm
(in accordance with DIN EN ISO 1520)

Buchholz hardness
≥ 90
(in accordance with DIN EN ISO 2815)

Pencil hardness
2 H
(Wolff Wilborn Type 291)

Salt spray test
> 500 h
(in accordance with DIN EN ISO 9227-NSS)

Condensation water test
> 500 h
(in accordance with DIN EN ISO 6270-2)

Accelerated weathering Xenon
after 700 h: residual gloss
≥ 50 % of initial gloss
(in accordance with DIN EN ISO 16474-2)

Impact test
direct: ≥ 10 ip
(in accordance with ASTM D 2794-69)

Labeling
See current safety data sheet.

Coating suggestion

Substrates [1) 2)]	Prime coat [3)]	Top coat
Aluminum preferably yellow or green chromatized (in accordance with DIN EN 12487) or chromium-free no-rinse pretreatment **Steel** preferably iron or zinc phosphatized **Cast iron** **Galvanized steel and others**	**Only on white substrates,** e.g.: Universal Polyester Powder 5910.-.9016 approx. 90 µm	Lumifekt Powder PE 5989 100–120 µm

1) Generally, the substrate must be free from grease, oil, separating and drawing agents as well as corrosion products and other impurities (this especially applies to the use of directly fired gasovens) and pretreated according to the corrosion protection requirements.
2) Note: For an optimal luminescent effect, the substrate must be white. If this is not the case, this powder coating is to be applied in a two-layer structure with a bottom layer of white powder coating.
3) To achieve optimal intercoat adhesion with a two-layer **powder coati**ng application, the prime coat must only have just begun to gel. An object temperature of 110–130 °C with a holding time of 8–10 minutes is recommended for this. If the prime coat has fully cross-linked, problems with intercoat adhesion may be observed

Process

Compatibility
Different batches or powder coat qualities cannot always be mixed/are not always compatible to one another. Surface defects – such as gloss reduction, specks, craters, orange peel effect, etc. – may result from incompatibility. To be sure, appropriate tests shall be carried out before application.

Application temperature
15 to 25 °C

Air humidity
< 75% r.h.

Application methods

Generally make sure the substrate is grounded properly. The fluidizing, conveying and dosing air must be free from oil and condensation water. . In order to obtain a uniform coating quality, a constant fresh / recovered powder ratio should be maintained. The recovery powder portion in the circulation system should normally be less than 35%.

Corona application
Depending on geometry of parts and application use corresponding coating-programs (in some cases it may be necessary to limit the spraying current)

For application-systems without limited spraying current:

Voltage:
70–100 kV
(for the first coat)
40–50 kV
(for overcoating)

Tribo application
Is possible

Curing conditions

Duration:	Object temperature:
25 to 50 min.	at 180 °C
15 to 30 min.	at 190 °C
10 to 20 min.	at 200 °C

Packaging
20 kg

Storage
1 year after receipt.
Store in original closed container, dry and at room temperature (max. 25°C).
Protect against heat and direct sunlight.

Remark
This Technical Data Sheet is based on intense development work and many years of practical experience. The contents do not constitute any contractual relationship. The user/buyer is not released from his/her obligation to test our products for suitability for the intended application. In addition, our General Terms and Conditions shall apply.
As soon as a new edition of this Technical Data Sheet is issued, the previous specifications become invalid.
If you need the current version, please contact your Brillux consultant.
Version 4

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