

1. Product designation

Ⓝ **Everlux®-RL** - Reflecto-luminescent Safety Signs

2. Product description

A new product at global level, with the advantage of combining two concepts in signs: the photoluminescent sign and the retro-reflective sign.

Made of composite aluminium with 3mm thickness, coated in one of the sides with a retro-reflective film where a layer of photoluminescent paint is applied.

Signalling system with a double functionality:

- By incidence of external light (from vehicles/machineries or head torch lights) it reacts as a retro-reflective product, i.e., the light is sent back in the same direction it come from, allowing the total visibility of the object;
- In the complete absence of light, it acts as a photoluminescent product: having absorbed the luminous radiation while exposed to the surrounding light (or the light from the vehicles/machineries or head torch lights) and in a black-out situation, the signs will remain visible.

3. Application

According to Everlux Catalogue, in the Chapter "Everlux-RL".

4. Fire reaction


- Non flammable, self-extinguishing (old class of fire reaction-M1).
- The product that we use has a core fire retardant (a mixture of a polymer with minerals that not burns).Consequently, applying the fire test according to EN 13501-1 the Everlux-RL products are classified B - s1 - d0 (Fire behaviour B - smoke emission s1 and Flaming droplets/particles- d0 (0 means absence)). As information, a product with this classification is valid for the following use application - Wall and ceiling installations.
- According to ASTM D 635-10, the Everlux-RL products are classified HB (HB = horizontal burning), the flame front does not pass the 25 mm reference mark and are Class CC1 according to the IBC (International Building Code).


5. Retro-reflective Properties


The retro-reflective fabric used in the Ⓝ **Everlux®-RL** products meets all the coefficient values of retro-reflection specified in the European Norm EN 12899-1 and ASTM D4956-13.

The minimum performance requirements for a Type I^(a) retro-reflective sheeting color "White" and the minimum retro-reflection coefficient (RA) for the Ⓝ **Everlux®-RL** ^(b), according to both normative documents are shown in the tables that follow.


- 1) According to the ASTM D4956-13, considering a 0.2° [12'] observation angle and a -4° entrance angle, the value for the retro-reflection coefficient for the  **Everlux®-RL** is the following:

Retro-reflective fabric in white	Retro-reflection coefficient (RA) $\left(\frac{cd}{lux \times m^2}\right)$
ASTM D4956-13	70
 Everlux®-RL	70

- 2) According to EN 12899-1, considering a 20' (0.33°) observation angle and a +5° entrance angle, the value for the retro-reflection coefficient for the  **Everlux®-RL** is the following:

Retro-reflective fabric in white	Retro-reflection coefficient (RA) $\left(\frac{cd}{lux \times m^2}\right)$
EN 12899-1	50
 Everlux®-RL	50

- (a) According to ASTM D4956-13 a retro-reflective sheeting Type I is a retro-reflective sheeting referred to as "engineering grade" that is typically an enclosed lens glass-bead sheeting. Applications for this material include permanent highway signing, construction zone devices, and delineators.

- (b) The brand of ENGINEER GRADE CLASS 1 sheeting used in the  **Everlux®-RL** is made of retro reflective self-adhesive material which is protected on the top by a transparent and/or coloured transparent coating. The sheeting is used in vertical traffic road sign applications and for those signs requiring an excellent retro reflective power, both in day and night light. The sheetings come with an indelible mark (commercial mark) identifying the manufacturer and the granted exposure minimum lifetime (7 years).

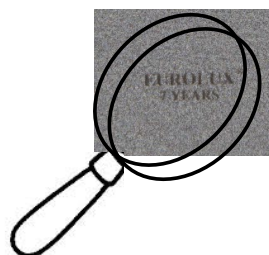



Image of the indelible mark of the Retro-reflective film used in the  **Everlux®-RL** products

6. Photoluminescent properties

The  **Everlux®-RL** products demonstrate the following photoluminescent properties:

Norms	Luminance properties:		Period of light decay
	10 minutes	60 minutes	Luminance intensity greater than a 0.3 mcd/m ²
 Everlux®-RL	57 mcd/m ² ⁽¹⁾	7 mcd/m ² ⁽¹⁾	845 minutes ⁽¹⁾
	28 mcd/m ² ⁽²⁾	3.6 mcd/m ² ⁽²⁾	460 minutes ⁽²⁾
	20 mcd/m ² ⁽³⁾	2.9 mcd/m ² ⁽³⁾	380 minutes ⁽³⁾

⁽¹⁾ Values obtained in tests by stimulation with a Xenon bulb, with 1000lux for 5 minutes, according to DIN 67510-1.

⁽²⁾ Values obtained in tests by stimulation with an OSRAM L18W/765 daylight effect bulb (6500 K), with 25lux for 15 minutes.

⁽³⁾ Values obtained in tests by stimulation with an OSRAM L18W/840 white light bulb (4000 K), with 25lux for 15 minutes.

7. Dimensions, Pictograms and Colours

In conformity with Everlux catalogue, in accordance with the National and International Rules and Norms in force.

8. Printing

By serigraphy with transparent high quality paint resistant to UV rays.

9. Cleaning

Products that do not require any special care and that can be cleaned manually and gently with a dry or wet cloth dampened with water (with no detergent).

10. Guaranty

In normal fixing conditions and with the appropriate cleaning procedures, we offer a 3-year guaranty.

Considering that in outdoor applications the signs will be permanently exposed to temperature changes, humidity and other extreme conditions, we provide a warranty for 1 year and 6 months.

11. Health and Safety

The products do not contain radioactive substances. In terms of toxicity, it is considered a safe product (European Norm EN 71-3).

12. Quality and Certification

Ⓢ **Everlux**[®] products are certified by Lloyd's Register Type Approval System.

Their quality is guaranteed by a strict process of quality control, using testing methods in our own laboratory and complying with the applicable Norms.

13. Legal framework

All of our signs are in conformity to the following Regulatory framework¹:

- ISO 16069
- Norms DIN 67510
- ISO 7010
- Norms ISO 3864

¹ Note: the absence of the year, means that is used the last version published