

Section 10 45 00

Ecoglo Photoluminescent Fire Protection Signs

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It is offered as a guide to experienced and knowledgeable construction professionals who assume full responsibility for its interpretation and use.

Square brackets [] containing text indicate an option to be considered/inserted by the specifier. Remove brackets and unused options before printing.

Section 10 45 00

Photoluminescent Fire Protection Signs

Part 1 General

- 1.1 Summary
 - A Work Included: Supply and installation of photoluminescent fire protection signs.
- 1.2 Quality Assurance
 - A Manufacturer Qualifications: to have minimum of 20 years' experience with similar work.
- 1.3 Submittals
 - A Submit the following [in accordance with Section 01 33 00 – Submittal Procedures]:
 - 1 Product Data: Manufacturer's product data sheets for each sign used in project.
 - 2 Manufacturer's Instructions: Pre-printed material describing installation of product, system or material, including special notices, safety data sheets outlining hazards and safety precautions and maintenance and cleaning instructions.
 - 3 Test Reports: Showing compliance with required standards, ordinances and codes.
 - 4 Substitutions: Substitutions must be submitted and approved prior to bid date. All requests shall include test results, product descriptions, confirmation of piece design and engineering calculations meeting design criteria.
- 1.4 Delivery, Storage and Handling
 - A Handle and store products in a manner to prevent damage, deterioration and soiling to products, other building components, assemblies, other products, the structure, the Site and surrounding property and in accordance with manufacturer's instructions.
 - B Store packaged or bundled products in original and undamaged containers and packaging with manufacturer's seals and labels intact. Do not remove from packaging or containers until ready to be installed.
 - C Store products subject to damage from weather in weatherproof enclosures.
- 1.5 Warranty
 - A Provide manufacturer's limited warranty. Warranty to cover defects in materials and workmanship.
 - 1 High Temperature Curing (HTC) Products: (5) years from the date of delivery of the signs.
 - 2 30 Year Warranty on photoluminescent performance of HTC signs when positioned indoors.

Part 2 Products

2.1 Manufacturers

- A Contract Documents are based on products by Ecoglo International Ltd. (www.ecoglo.com)
- B Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 Materials

- A Photoluminescent pigment embedded in thermoset polyester manufactured using a High Temperature Manufacturing (HTC) process at a temperature exceeding 160°C to integrally bond the active ingredients to 5005 0.9mm aluminium (aluminum) sheet.
- B All HTC Signs to meet or exceed the performance criteria specified in the following tests or standards. PC = Performance Criteria
 - a. UV Resistance ASTM G155-04 Cycle 1 1000hrs, Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Nonmetallic Materials. PC – Loss in luminance after exposure < 10%
 - b. Salt Spray Resistance ASTM B117-97, Standard Practice for Operating Salt Spray (Fog) Apparatus. PC – Slight corrosion build up along scribes, no blistering or filiform growth along scribes.
 - c. Washability ASTM D4828-94 (2003), Standard Test Methods for Practical Washability of Organic Coatings. PC – crayon, pen, 3M soil: all rating 10, being complete removal of soilant.
 - d. Rate of Burning ASTM D635-03, Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position. PC – Time of burn 0 seconds, does not burn.
 - e. Surface Flammability ASTM E162-02, Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source. PC – Flame spread index 7.6, ignites with difficulty.
 - f. Toxicity Bombardier Toxic Gas Generation Test SMP800-C. PC – Pass.
 - g. Radioactivity ASTM D3648-2004, Standard Practices for the Measurement of Radioactivity. PC – Pass.
 - h. Luminance
Independent luminance testing shall be undertaken as follows:
Excitation Condition (charging) – 150W Xenon lamp, 1000 lux for 5 minutes. PC – Minimum luminance of:
 - 2,000 mcd/m² after 2 minutes; and
 - 400 mcd/m² after 10 minutes; and
 - 100 mcd/m² after 30 minutes; and
 - 50 mcd/m² after 60 minutes; and
 - 20 mcd/m² after 120 minutes.
 - i. High Temperature Curing Independently tested by placing 3 samples in an oven at 150°C for 20 minutes and then examining the samples after removing from the oven. PC – the samples shall have no shrinkage, delamination, distortion, or yellowing.

2.3 Components

- A Basis of design: Ecoglo Photoluminescent Fire Protection Signs
1 Description:

- a. Requires not less than 54 lux of illumination continuously during building occupancy
 - b. Stores energy from ambient daylight, fluorescent, metal halide, mercury vapor or LED light
 - c. Non-toxic, non-radioactive
 - d. No electricity or batteries required
 - e. [Aluminium ceiling or flag mounting kit]
- B Mounting type: [Ceiling] [Flag] [Surface]

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Product Code	Product Name	Sign Definition	Sign Size
S5-FEXT2010	Fire Extinguisher	Fire extinguisher located here	200mm x 100mm
S5-FH1010	Fire Hose	Fire hose located here	100mm x 100mm
S5-FA1010	Fire Alarm	Fire alarm located here	100mm x 100mm
S5-BG1010	Break Glass	In case of emergency break glass	100mm x 100mm
S5-FEGL2010	Break Glass	In case of emergency break glass	200mm x 100mm

Part 3 Execution

3.1 Examination

- A Before installation, examine surfaces on which the work of this section depends. Notify [Contractor] if substrates do not comply with requirements of this section.
- B Do not proceed with work of this Section until all unsatisfactory conditions have been corrected, if any.
- C Commencement of Work will imply acceptance of surfaces.

3.2 Preparation

- A Clean surfaces to remove dirt, dust, grease, oil, loose material, frost, paint, coatings, or other matter that may affect bonding or installation of photoluminescent products.
- B Test substrates for fit with products before using adhesives or mechanical fastening.

3.3 Installation

- A Unless otherwise indicated in the specifications, install products in accordance with manufacturer's instructions. Obtain written instructions directly from manufacturer.

3.4 Cleaning

- A At completion of installation, clean soiled product surfaces in accordance with manufacturer's instructions.

3.5 Waste Management and Disposal

- A Separate waste materials for [reuse] [and] [recycling] at nearest used building materials facility.

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3.6 Protection

- A Do not allow heavy objects to come into contact with installed products.

End of Section