Section 26 53 00

Ecoglo Photoluminescent Exit Signs (inc. Floor Proximity Exit Signs)

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Part 1 General

1.1 Summary

A Work Included: Supply and installation of photoluminescent exit signs to identify the Means of Egress.

1.2 References

A [Fire Code of the Philippines SECTION 10.2.5.12 EXIT MARKING]

B American Society for Testing & Materials (ASTM) E2073-10 – Standard Test Method for Photopic Luminance of Photoluminescent Phosphorescent) Markings

1.3 Design Requirements

A Photoluminescent exit signs shall be provided to identify all interior and exterior parts of the Means of Egress including, but not limited to, exit doors, exit stairways, exit ramps and exit passageways.

B In addition to the exit signs required at 1.3A, to assist with emergency egress in smoke conditions, photoluminescent floor proximity exit signs may also be provided on doors and in corridors along the Means of Egress.

C Locations. Signs shall be located:

a. at each point in the Means of Egress where the exit is not immediately visible to occupants;
b. to clearly indicate each door in the Means of Egress; and
c. to clearly identify the direction of travel to reach the nearest exit door.

D Position.

a. A sign provided to identify a door in the Means of Egress shall be positioned on a vertical surface within 600mm of the door and be positioned where it is least likely to be obscured from view and where it cannot be obscured when the door is open.
b. A floor proximity exit sign may also be positioned on, or adjacent to, doors in the Means of Egress through which occupants must pass. The bottom of the sign shall be not less than 150 mm, and not more than 450 mm, above the floor. The sign shall be mounted on the door or adjacent to the door with the nearest edge of the sign within 100 mm of the door frame.
c. Floor proximity exit signs may be positioned on walls along corridors in the Means of Egress through which occupants must pass. The bottom of the sign shall be not less than 150 mm, and not more than 450 mm, above the floor.

E Illumination: Where photoluminescent exit signs are installed, they shall be provided with not less than 54 lux of illumination from a light source with a colour temperature not less than 4000K for not less than 60 minutes prior to periods when the building is occupied, and continuously during the building occupancy.

F In the event of a power failure, a photoluminescent exit sign shall:

a. continue to provide a minimum luminance of 30mcd/m^2 for not less than 90 minutes; and
b. have its performance verified by testing in accordance with ASTM E2073-10, except the activation illumination in clause 8.3 is replaced with 54 lux.

G Viewing Distance. The maximum viewing distance and minimum text height is defined in Table 1.

Table 1

Maximum Viewing Distance (m)	Minimum Text Height (mm)
16	150
24	210

H Exit signs shall be aluminium based and manufactured using High Temperature Curing (HTC) technology.

1.4 Quality Assurance

A Manufacturer Qualifications: to have a minimum of 25 years' experience manufacturing photoluminescent materials.

1.5 Submittals

Submit the following [in accordance with Section 01 33 00 – Submittal Procedures]:

1 Product Data: Manufacturer's printed product data sheets for materials used in system.
2 Shop Drawings: Provide drawings showing details, dimensions, extent of work, and other data necessary for the satisfactory installation of the products stated herein.
3 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.
4 Test Reports: Showing compliance with required standards, ordinances and codes.
5 Substitutions: Not permitted, however requests for substitutions will be considered provided substitute products and methods of execution are submitted at least 15 days prior to the bid closing date. All requests shall include test results, product descriptions, confirmation of piece design and engineering calculations meeting design criteria.

1.6 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.

1.7 Warranty

A Provide manufacturer's limited warranty.

1 Warranty to cover defects in materials and workmanship: 5 years from 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 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. Visibility
ASTM E2073-10 Standard Test Method for Photopic Luminance of Photoluminescent (Phosphorescent) Markings except that the activation illumination in clause 8.3 is replaced with 54 lux. PC – Pass

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 S20 Photoluminescent BFP Exit Signs

Description:

a. Stores energy from ambient LED, fluorescent, metal halide or mercury vapor light.

b. Non-toxic, non-radioactive.

B Visibility rating: [16metres] [24metres] [As per Schedule attached at end of Section] [As indicated in drawings]

Click here to view Ecoglo S20 Photoluminescent BFP Exit Signs

Product Code	Product Name	Sign Size	Maximum Viewing Distance
S20-BFP2916-16m	Exit	290mm x 162mm	16m
S20-BFP4223-24m	Exit	420mm x 230mm	24m
S20-BFP2916L-16m	Exit Left	290mm x 162mm	16m
S20-BFP4223L-24m	Exit Left	420mm x 230mm	24m
S20-BFP2916R-16m	Exit Right	290mm x 162mm	16m
S20-BFP4223R-24m	Exit Right	420mm x 230mm	24m
S20-BFP162-16m	Chevron	50mm x 162mm	16m
S20-BFP230-24m	Chevron	70mm x 230mm	24m

Part 3 Execution

3.1 Examination

A Before installation, examine surfaces on which the Work of this Section depends. Notify [Contractor] if surfaces 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 debris, dirt, dust, grease, oil, loose material, or other matter that may affect installation of photoluminescent products.

3.3 Installation

A Install Signs [as per Schedule attached at end of Section] [as indicated in Drawings].

B Unless otherwise indicated in the specifications, install Signs in accordance with manufacturer's instructions. Obtain written instructions directly from manufacturer.

3.4 Cleaning

A At completion of installation, clean soiled Sign 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.

3.6 Protection

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

3.7 Signage Schedule

Specification articles (product selections) contained within square brackets [ ] are shown as example choices only.

Sign Designation	**Product Code**
[Sign designation on drawing]	[S20-BFP2916-24m]
[Sign designation on drawing]	[S20-BFP4223L-24m]

End of Section