Best Practice Specification
PHOTOLUMINESCENT DISASTER PREPAREDNESS SIGNS

Part 1 DESCRIPTION

1.01 System Description
Approved photoluminescent disaster preparedness signs shall communicate disaster preparedness information and shall be readily visible in all conditions of foreseeable use, including emergency conditions and darkness.

1.02 Photoluminescent Disaster Preparedness Signs
Photoluminescent disaster preparedness signs shall be provided to provide information relating to disaster mitigation, hazards and general direction of evacuation.

1.03 Approved Photoluminescent Disaster Preparedness Signs
Approved photoluminescent disaster preparedness signs shall:

a) Exceed PSPA class G classification and have independent luminance testing to support the minimum luminance levels detailed in following clause 2.04(h); **and**
b) Be produced using a High Temperature Curing (HTC) manufacturing process and independently tested to support the criteria detailed in following clause 2.04j.; **and**
c) Be coated with a clear protective powder coating; **and**
d) Be produced by a manufacturer with ISO 9001 Quality Assurance certification; **and**
e) Be warranted to last a minimum of 15 years outdoors.

1.04 Submittals
Documentation as detailed in 1.04a. through 1.04c. must be submitted.

a. Manufacturer's Product Data Sheets
Submit Product Data Sheets for product number verification.

b. Manufacturer's Installation Instructions
Submit installation instructions.

c. Test Reports
Submit independent test reports to verify compliance with relevant standards as detailed in Section 2.04 Performance Criteria.

1.05 Quality Assurance
Submit copy of Manufacturer's ISO 9001 Quality Assurance documentation.

1.06 Warranty
Submit warranty for luminance characteristics for a minimum 15 years of outdoor use.

Part 2 MATERIALS REQUIREMENTS

2.01 Photoluminescent disaster preparedness signs
a. Acceptable Manufacturer

The manufacturer of the products shall have at least 20 years experience manufacturing photoluminescent materials.

b. Authorised Representative
The manufacturer shall have a suitably trained and accredited regional representative.

2.02 Materials Composition
a. Photoluminescent Disaster Preparedness Signs
Photoluminescent pigment embedded in thermoset polyester manufactured using a High Temperature Curing (HTC) process at a temperature exceeding 160°C to integrally bond the active ingredients to 5005 0.9mm aluminium sheet.

2.03 Approved Disaster Preparedness Signs
Disaster preparedness signs for communicating disaster preparedness information shall consist of materials and be manufactured using processes as defined in section 2.02.

2.04 Performance Criteria
All HTC products 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 Non-metallic Materials.
PC – Loss in luminance after exposure < 10%

b. Salt Spray Resistance
ASTM B117-97 1000hrs, 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) – 20W Fluorescent lamp, 5000 lux for 60 minutes.
PC – Minimum luminance of:

4,900 mcd/m^2 after 2 minutes; **and**
950 mcd/m^2 after 10 minutes; **and**
250 mcd/m^2 after 30 minutes; **and**
120 mcd/m^2 after 60 minutes; **and**
10 mcd/m^2 after 480 minutes.

i. High Temperature Curing
Independently tested by placing 3 samples in an oven at 180°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.

Part 3 CONSTRUCTION REQUIREMENTS

3.01 Manufacturer's Instructions
Comply with manufacturer's product data, installation instructions and maintenance and cleaning instructions.

3.02 Examination
Site verification of conditions is required to verify installation surface and appropriate installation method.

3.03 Installation
Installation must be as per manufacturer's installation instructions.

3.05 Cleaning
Maintenance and cleaning should be carried out as per manufacturer's maintenance and cleaning instructions.

Part 4 METHOD OF MEASUREMENT

4.01 Accepted Quantity of Signs
Photoluminescent disaster preparedness signs shall be measured by the unit to determine the accepted quantity.

4.02 Accepted Quantity of Brackets
Brackets shall be measured by the unit to determine the accepted quantity.

Part 5 BASIS OF PAYMENT

5.01 Contract Unit Price

The accepted quantities, as determined in Part 4 Method of Measurement, shall be paid at the contract unit prices.