

Guide for Use of Ecoglo Products in Path Marking Systems



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Ecoglo photoluminescent products used in path marking systems are in accordance with the following Standards: UL 1994 Luminous Egress Path Marking Systems and CAN/ULC-S572 Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems. Ecoglo path marking products should be installed as per the directions in this guide.

NOTE: Products not to be used where lights are controlled by motion detectors.

Photoluminescent path marking systems provide building occupants with consistent, coherent information so that they can be evacuated efficiently from any occupancy to a safe area.

The purpose of such systems is to provide luminous markings that provide an outline of the egress path and mark any changes in elevation, obstructions, or changes in direction.

The purpose is not to provide illumination of the area.

Charging and subsequent activation of photoluminescent components to produce light emission in dark surroundings requires pre-exposure of the components to the installed light sources. The luminance performance during the decay mode of the photoluminescent components depends upon the light spectral characteristics of the light source, the excitation illuminance at the location of the photoluminescent component and the duration of the excitation.

All the components in a path marking system shall have a luminance contrast with the surroundings when in use and for at least the time allocated for escape in normal conditions.

Egress Marking

The entry point of doors in egress routes at exit stairway shafts should be marked with a photoluminescent door exit sign made in safety green, with the emergency exit symbol (running man) and an arrow. The mounting height of the sign should not be higher than 457mm above the finished floor. The sign should be installed either on the door itself (as shown in Figure 1), or on the wall surface directly adjacent to the door on the latch-side.

For the door-mounted option, the vertical centerline of the sign should be centered with the door, or should be in the half of the door, either the right or left, that contains the latch. In case of double-doors, both doors should be marked and the signs should be in the center of the doors. For door-mounted signs, arrows may be omitted.

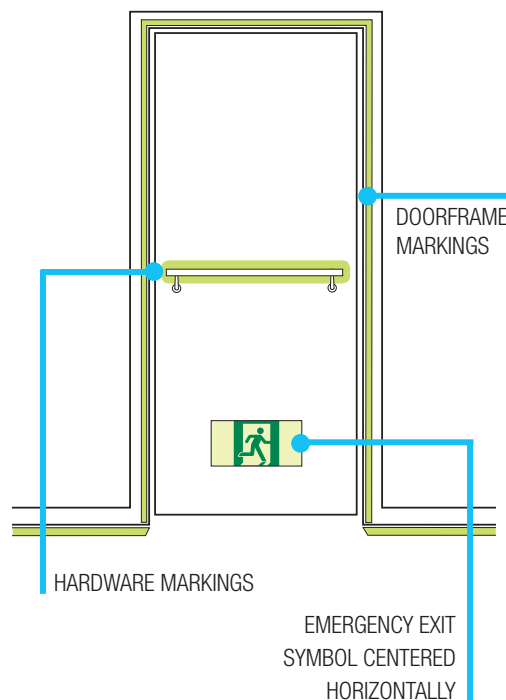
For the wall-mounted option, the sign should be mounted on the wall surface directly adjacent to the latch-side of the door, as close as practicable to the door but in no case more than 150 mm from the door to the edge of the sign. In the case of double-doors, signs should be placed on the wall surface directly adjacent to the hinge-sides of both doors.

Where the wall surface directly adjacent to the latch side is too narrow to accommodate the sign, the door-mounted option is preferred, but the sign may be placed on an adjacent perpendicular wall. Arrows are mandatory for wall-mounted signs.

Note: The mounting height of floor proximity path markers is to be in accordance with local and national codes but is not to exceed 457 mm above finished floor height.

Directional indicators (arrows) are to be mounted at changes in direction and at locations intended to lead persons out of, or from entering a dead end corridor.

Figure 1
Example of Exit Door Markings



Doorframe Markings (See Doorframes)
Hardware Markings (See Hardware)
Emergency Exit Symbol (See Egress Marking)

Recommended Ecoglo Products:

Emergency Exit Symbol

S5 Series Running man exit signs

Hardware (knobs, etc.)

Door handles or opening devices on emergency exit doors should be highlighted with photoluminescent path markings. Doorknobs and latches should be marked by placing a photoluminescent marker behind the hardware or by applying a photoluminescent strip directly to push-pads, bars or panic hardware (see Figure 1).

Recommended Ecoglo Products:

Door Hardware Markings
S5-DHM1010 Door Handle Marker G6-003 Guidance Strip

Doorframes

The entire perimeter of doorframes of exit doors should be marked with photoluminescent strips (see Figure 1).

Recommended Ecoglo Products:

Door Frame Markings
G6-003 Guidance Strip

Identification Sign for Floor and Stair Name

The signs should be mounted ON BOTH SIDES OF THE DOOR (outside stairwell and inside stairwell) at shoulder height (1500mm above the floor) permanently on the wall at the latch side of the door to an exit stair shaft.

Contact Ecoglo for Floor Identification Markers specific to your use.

Exit Stairs

Steps

The entire horizontal leading edge of the step should be marked with a solid and continuous photoluminescent strip. The dimensions, distances and locations should be consistent and uniform throughout the same exit as shown in Figure 3.

Note: The strips should extend for the full width of each step.

The placement of the strips on the leading edge of the step should be:

- Maximum: 13 mm from the leading edge of the step
- Minimum: 0 mm from the leading edge of the step

The installation of path markings must not result in tripping or slipping hazards. Proper physical installation instructions can be found in the Installation Instructions section of this Guide.

Recommended Ecoglo Products:

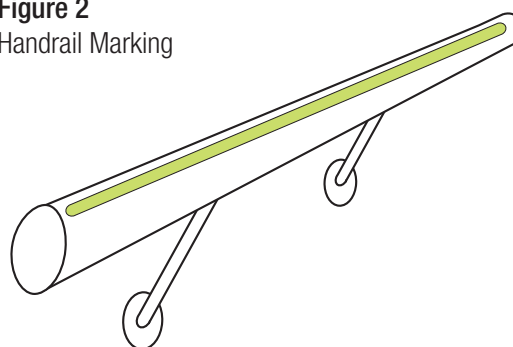
Step and Landing Products
E14-075 Step Edge Contrast E2-071 Step Edge Contrast E15-073 Step Edge Contrast G6-003 Guidance Strip

Handrails

All handrails and handrail extensions should be marked with a solid and continuous photoluminescent strip. The dimensions, distances and locations should be consistent and uniform throughout the same exit.

Figure 2

Handrail Marking



The strip should be placed at least on the top surface of all handrails along their entire lengths and include handrail extensions, and newel post caps.

Where handrails or handrail extensions bend or turn corners, the strips should be as continuous as practicable and no discontinuity should be greater than 100 mm.

In existing buildings where handrail material or design makes it difficult to apply photoluminescent strip on the top surface, a photoluminescent strip may be placed on the side of a handrail.

Recommended Ecoglo Products:

Handrail Products
H3-001 Handrail Marker H5-001 Handrail Marker G3-001 Guidance Strip G6-003 Guidance Strip

Ecoglo H series handrail strip matching the radius of a round handrail should be used on round handrails.

G series flat guidance strip should be used on flat handrails.

Floor Perimeter Demarcation Lines

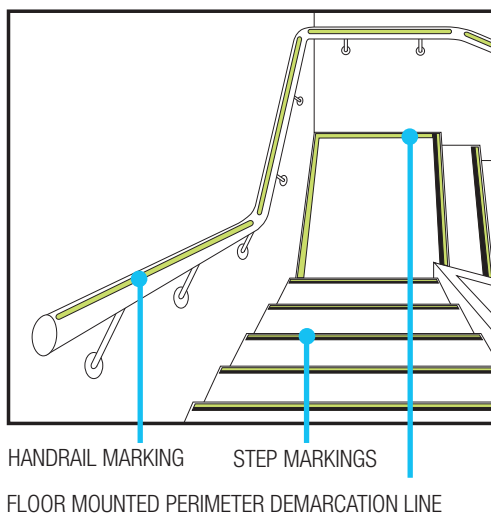
Ecoglo floor perimeter demarcation lines are intended to outline the egress path by providing pathway marking lines on both sides of the path (see Figure 3 and Figure 4). Stair landings and other parts of the egress route should be provided with floor perimeter demarcation lines. The lines should be solid and continuous. The continuity of the demarcation lines may be interrupted to accommodate obstructions such as conduits, mouldings, corners or bends, but discontinuities should not exceed 100 mm. The dimensions, distances and locations should be uniform and consistent throughout the same exit. Demarcation lines should be located on the walls/vertical surface.

Floor-mounted option: Perimeter demarcation lines may be located on the floor if the option of marking the walls is not acceptable. They should be placed as close as practicable to the wall and should extend to within 50 mm of the markings on the leading edge of landings (see Figure 3). Where an obstruction (such as a standpipe) is located within the egress path, the demarcation line may extend across the floor so that the obstruction is outside of the outlined area. Demarcation lines on floors should continue across the floor in front of all doors, except in front of intermediate and final exit doors.

Floor Perimeter Marking, Floor-Mounted Option

(Ecoglo suggests this option only be used when wall mounting is not possible.)

Figure 3
Floor Perimeter Marking, Floor-Mounted Option



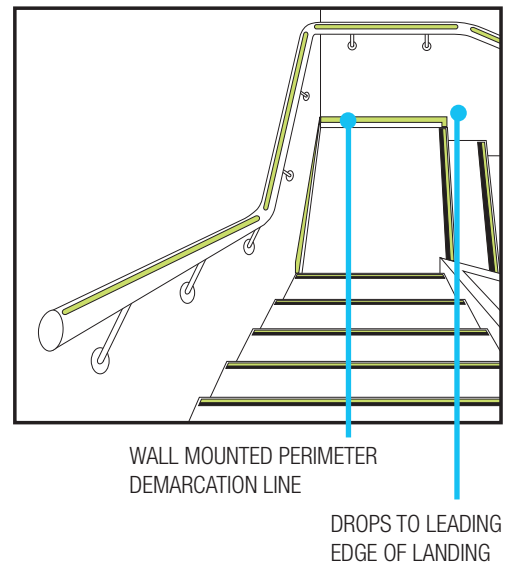
Wall-mounted option: Perimeter demarcation lines using Ecoglo guidance strips may be located on the wall with the bottom edge no more than 100 mm above the finished floor. At the top or bottom of stairs, demarcation lines should drop vertically to the floor within 50mm of the step or landing edge (see Figure 4). Demarcation lines on walls should transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path (for instance, to exclude obstructions or dead ends from egress pathways). Demarcation lines on walls should continue across the face of all doors, or may transition to the floor and extend across the floor in front of such doors, except in front of intermediate and final exit doors. Perimeter demarcation lines are not required:

- on the side of steps; and
- where an area is selected not to be outlined because it is not part of the egress path, for example an obstruction or dead end.

Floor Perimeter Marking, Wall-Mounted Option

(Ecoglo recommends this option.)

Figure 4
Floor Perimeter Marking, Wall-Mounted Option



Recommended Ecoglo Products:

Perimeter Demarcation Line Products

- G3-001 Guidance Strip
- G6-003 Guidance Strip



Installation Instructions For
S5 Series Signs
(including Floor Identification Signs)

Flat Surfaces

IMPORTANT: Ecoglo S5 Series Signs require ambient lighting to operate. They have been evaluated for activation by Fluorescent or LED lighting of minimum 1 foot-candle (10.8 lux).

Ambient lighting is to be maintained at a minimum of 1 foot-candle (10.8 lux) from either fluorescent or LED lighting when the photoluminescent system is in use.

Control of ambient lighting is to be restricted to authorized personnel.

WARNING: The system must not be used where the ambient illumination is less than 1 foot-candle (10.8 lux)

Installation Instructions for S5 Series Signs

(inc. Floor Identification Signs)

1. Preparation of Surface

- Thoroughly clean the surface with industrial strength cleaner if necessary.
- Remove any loose paint or sealant then allow surface to dry.

2. Positioning of Signs

- Mark position on the door or wall where sign is to be placed.

Note:

Floor Identification signs – the mounting height must be in accordance with local and national codes.

3. Placement of Signs

- Peel the protective layer from the back of the sign to expose the adhesive ensuring nothing comes into contact with it.
- Line the sign up with the markings you made.
- Apply pressure evenly over the sign to fix it fast to the surface.

4. Maintenance of Signs

- Regular dusting with a soft cloth or brush is recommended to keep the sign clean.
- If the sign is noticeably dirty, clean with a sponge or cloth.

See Cleaning Instructions for more detailed information.



Installation Instructions For

Step Edge Contrast E Series

Concrete and Timber

IMPORTANT: Ecoglo E Series products require ambient lighting to operate. They have been evaluated for activation by Fluorescent or LED lighting of minimum 1 foot-candle (10.8 lux). Ambient lighting is to be maintained at a minimum of 1 foot-candle (10.8 lux) from either fluorescent or LED. Control of ambient lighting is to be restricted to authorised personnel.

WARNING: The system must not be used where the ambient illumination is less than 1 foot-candle (10.8 lux).

Please also note:

The mounting height of floor proximity path markers is to be in accordance with local and national codes but is not to exceed 18 inches (45.7 cm) above finished floor height.

The spacing between the corner of a change of direction of the path of egress and the luminous segment is not to exceed 4 inches (10.2 cm).

Step Edge Contrast - E Series Concrete and Timber

1. Preparation of Surface

- Thoroughly clean the surface with industrial strength cleaner if necessary.
- Allow surface to dry.
- **If painted or coated, remove using an angle grinder with abrasive flap disc.**
- Brush/vacuum off the dust.
- Wipe surface with acetone.



Note: Installation onto Concrete Surfaces

- It is preferable to use adhesive only for concrete installations. The adhesive will allow some movement to compensate for thermal contraction and expansion and will provide durable adhesion to the concrete substrate.

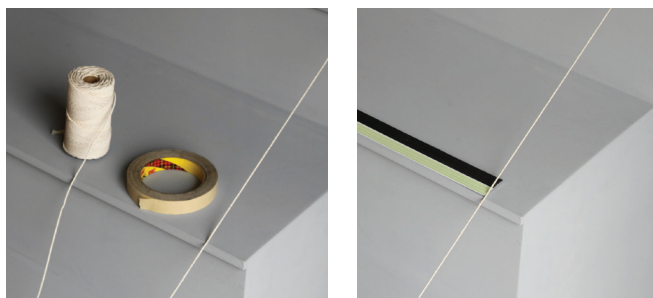
** Where adhesive only installation is preferred on surfaces that have a sealer applied (eg concrete, exposed aggregate and some tiles) a test patch should be laid and allowed to temperature cycle over a minimum of 14 days to ensure a good bond is achieved.*

If the adhesive does not hold then mechanical fixers should be used.

If mechanical fixing is not practical due to potential damage to the substrate please contact Ecoglo.

2. Alignment of the Strips

- Mark 50mm from the left edge of the top step.
- Mark 50mm from the left edge of the bottom step.
- Place a string line between the marks to ensure the strip on each step will be correctly aligned.



- The maximum recommended length for installation in outdoor situations is 1.5 metres.
- There must be a 3mm gap between lengths. This allows for thermal expansion in extreme weather conditions and also aids in water drainage off the step tread.
- Leave a 3mm gap either side of built-in steps

3. Preparation of the Strip

- Clean back of contrast strip with soft cloth and if necessary use methylated spirits (or similar solvent) to remove oil or grease
- Allow to dry for approximately 1 minute.

(For installations requiring adhesive & fixers go to step 8)

4. Applying the Adhesive

- Apply a 3mm zigzag bead of polyurethane adhesive (such as Wurth KD Bond and Seal or Bostik Seal n Flex FC) to the back of the strip, 3mm in from the edges.
- Continue along the length of the strip.



Adhesive Usage:

E2 Series - 30 metres per 600ml

E4 Series - 25 metres per 600ml

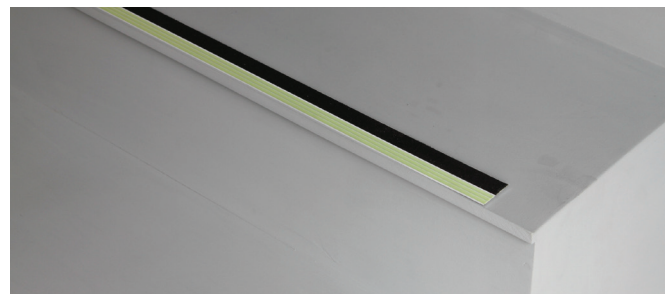
E14 Series - 25 metres per 600ml

G6-003 - 30 metres per 600ml

Ecoglo can supply Wurth KD Bond and Seal in 600ml Sausage form with Applicator Gun.

5. Placement of the Strip

- Line up the strip with your alignment marks and position approximately 2-3mm back from the front straight edge of the step.
- Place in position with the photoluminescent (light green) component of the strip to the leading edge of the step (see image below).



Steps with exposed sides:

Ensure the nosing is set back from exposed side by at least 20mm to ensure the outer edge of the nosing does not present a sharp hazard.

Tile Steps

If the tiles are not perfectly aligned then the contrast strip must be cut into pieces the width of each tile and placed so that the grout line is exposed.

Step Edge Contrast - E Series Concrete and Timber

And G6-003 Guidance Strips when used on steps

6. Apply Pressure to the Strip

- Apply even pressure to spread the adhesive beneath the strip using a hand roller.
- If necessary stand on each strip to ensure good contact between the strip and the step.



7. Allow the Adhesive to Cure

- Immediately following installation close off the area for a period of 8 hours to avoid the Ecoglo strip being moved whilst the adhesive is in the early stages of “cure”.
- Wait until adhesive has fully cured (allow at least 24 hours) before trimming any excess from each strip with a sharp blade.

8. Installations requiring Adhesive and Fixers

a. Outdoor Timber installations - 2 stage process

Note: Indoor installations only require adhesive

For outdoor timber installations both adhesive and fixers should be used because installation onto outdoor timber surfaces varies due to the uneven nature of timber, the various types of timber (eg pine or kwila), the protective coating (eg paint or sealer) and seasonal temperature variances.

Stage 1:

- Apply adhesive as per steps 3-4 taking care to keep adhesive away from pre drilled holes.
- Place strip as per steps 5-6.
- Leave the adhesive to cure for 7 days before installing the fixers.

Stage 2:

- Place a screw fixer into each hole and drill in securely using a battery drill.
- Do not fully tighten the fixers to avoid compressing the adhesive.

For timber installations the strips should be pre-drilled through the anti-slip material. The table below shows the number of drill holes required to allow for the natural contraction and expansion of timber.



b. Concrete Installations

Note: Adhesive only is usually sufficient, however, if adhesive and fixers are preferred, follow the instructions below.

DO NOT use fixers without considering the effects of temperature variance and thermal expansion, especially outdoors. If in doubt contact Ecoglo.

- Position the strip approximately 2-3mm from the front straight edge of the step and using the pre-drilled holes mark where the fixers are to be placed.
- Using a 6mm masonry bit and a concrete drill, drill the hole that will house the plastic anchor.
- Wipe away any dust or debris.
- Place the anchor fully into the holes.
- Apply adhesive as per steps 3-4 taking care to keep adhesive away from the pre-drilled holes.
- Place strip as per steps 5-6.
- Place a screw fixer into each hole and drill in securely using a battery drill.
- Do not fully tighten the fixers to avoid compressing the adhesive.

Hole Drilling Specifications

Hole Drilling Specification	Less than 350mm	350mm - 650mm	650mm - 950mm	950mm - 1250mm	1250mm - 1500mm
Number of Holes	2	3	4	5	6

Holes for fixers are usually drilled as part of manufacturing. If for any reason the product was ordered, or supplied, without holes where fixers are required then Ecoglo recommend the hole spacings shown in the table above for maximum durability.

Installation Instructions For

Guidance Strips G Series

Flat Surfaces

IMPORTANT: Ecoglo G Series products require ambient lighting to operate. They have been evaluated for activation by Fluorescent or LED lighting of minimum 1 foot-candle (10.8 lux). Ambient lighting is to be maintained at a minimum of 1 foot-candle (10.8 lux) from either fluorescent or LED lighting when the photoluminescent system is in use. Control of ambient lighting is to be restricted to authorized personnel.

WARNING: The system must not be used where the ambient illumination is less than 1 foot-candle (10.8 lux).

Please also note:

The mounting height of floor proximity path markers is to be in accordance with local and national codes but is not to exceed 18 inches (45.7 cm) above finished floor height.

The spacing between the corner of a change of direction of the path of egress and the luminous segment is not to exceed 4 inches (10.2 cm).

Guidance Strips G-Series Flat Surfaces

Ecoglo G-Series guidance strips are extremely versatile and can be applied on various types of surface, including walls, skirting board, floors, door frames, flat sided handrails and steps*. Generally, as long as the substrate is clean, flat and dry the product can be successfully installed.

Ecoglo G-Series guidance strips have a self-adhesive backing with a release tape for simple installation. (See Section 4 of these instructions if in any doubt about adhesion).

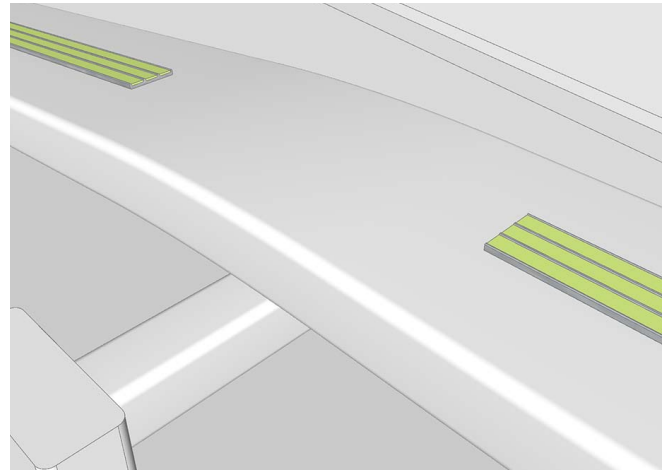
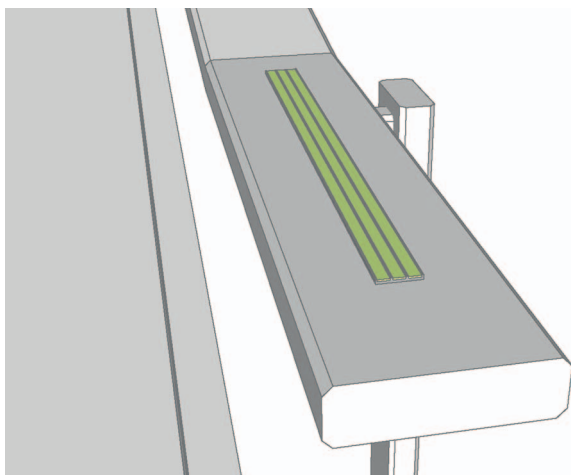
***Ecoglo G6-003 guidance strips are suitable for use on indoor steps which are not subject to daily use or heavy foot traffic. For outdoor steps, or steps which will be subjected to frequent or heavy foot traffic, visit www.ecoglo.com or contact Ecoglo at info@ecoglo.com for information on more suitable Ecoglo products.**

1. Preparation of Surface

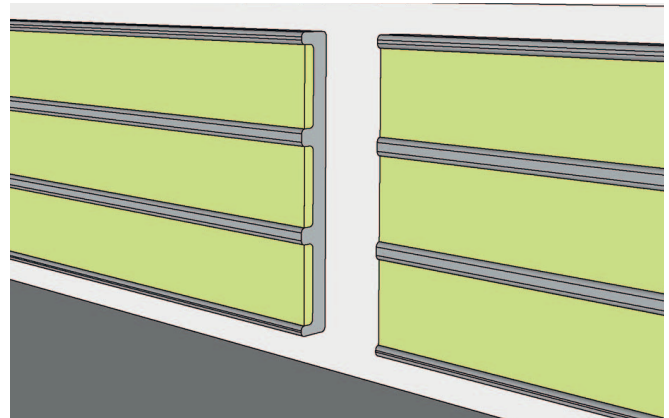
- Thoroughly clean the surface with an industrial strength cleaner if necessary.
- Remove any loose paint or sealant and then allow the surface to dry.
- If the surface has been painted or coated, check that adhesive is compatible with the paint or seal coating.
IF IN DOUBT REMOVE COATING.
- The tape is suitable for a temperature range of 0-40C.
- Maximum installation length is 1500mm.

2. Positioning, Alignment of the Strips

- If installing on a flat handrail or other surface such as a wall, mark the position where the strip is to be placed. Use a chalkline, plumb-line or spirit level if necessary to ensure the line is straight.
- If installing on steps, mark 50mm from the left edge of the top step, and 50mm from the left edge of the bottom step. Place a string line between the marks to ensure the strip on each step will be correctly aligned. This will give a straight, true line.
- Offer up the strip to the surface it is to be attached to, to make sure both surfaces are parallel. If the strip does not sit perfectly flat against the surface without being held in place, carefully bend the strip until it sits perfectly flat against the surface.



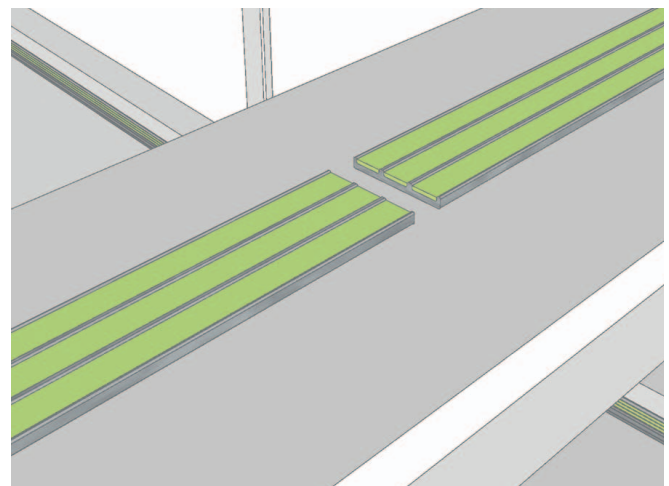
Do not bend guidance strips over bends. Set the strip 50mm from the bend.



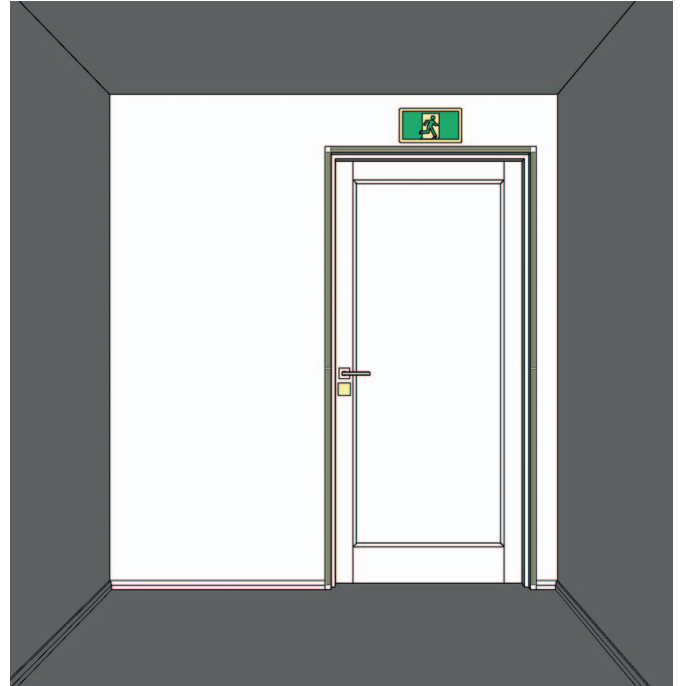
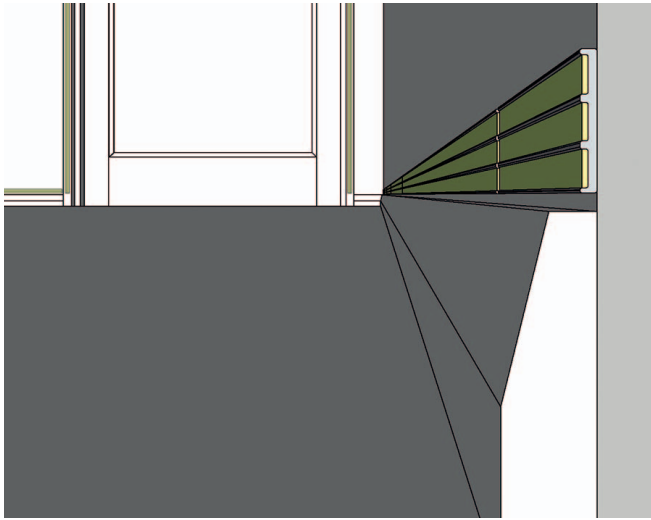
Where strips are to be butted together, there must always be a 3mm expansion gap between them. This allows for expansion and contraction between the Ecoglo strip and the building surface.

3. Placement of Adhesive-backed Strip

- Carefully peel off the release-tape backing from the strip.
- Carefully line the strip up with any alignment marks.
- Press the strip firmly in place to ensure even contact between the adhesive tape and the surface to which it is being applied.



Guidance strip can be used to mark corridors, lobbies and indoor lengths of path and can be mounted either on the floor within 100mm of the wall, or on the wall within 100mm of the floor. Gaps of 3mm must be placed between strips.



4. Mechanical Fixers (Screws or Rivets)

- For handrails in schools or other places where vandalism may occur, screws (for timber, as described above) or rivets (for metal) **MUST** be used. Install one screw/rivet 10-15mm in from each end of each strip.
- For outdoor timber installations screws **MUST** also be used so that the adhesive tape isn't able to lift if the timber distorts or absorbs moisture due to normal weather conditions. 5mm pan head screws are suitable to be screwed down firmly but not so tight that the tape squashes under the strip. Install one screw 10-15mm in from each end and one screw in the middle of each strip.
- If in doubt about the adhesion of the strips to any substrate, use screws/rivets for additional security. Install one 10-15mm in from each end and one in the middle of each strip.



For guidance strips on handrails used in schools or public places, screws or rivets must be installed 10 – 15mm in from the end of each strip.

5. Maintenance of Strips

- Regular vacuuming or brushing with a stiff bristle head brush is recommended to keep the strips clean.
- If strips are noticeably dirty, clean with a sponge or cloth.

See Cleaning Instructions for more detailed information.



Ecoglo International Limited

Email: info@ecoglo.com

www.ecoglo.com

Installation Instructions For

Handrail H Series

Wall Mounted and Freestanding Round Handrails

IMPORTANT: Ecoglo H Series products require ambient lighting to operate. They have been evaluated for activation by Fluorescent or LED lighting of minimum 1 foot-candle (10.8 lux). Ambient lighting is to be maintained at a minimum of 1 foot-candle (10.8 lux) from either fluorescent or LED lighting when the photoluminescent system is in use.

Control of ambient lighting is to be restricted to authorized personnel.

WARNING: The system must not be used where the ambient illumination is less than 1 foot-candle (10.8 lux)

1. Preparation of Surface

- Thoroughly clean the surface with an industrial strength cleaner.
- Remove any loose paint or sealant and then allow the surface to dry.
- Handrail must be dry



2. Alignment

- To ensure the Ecoglo Handrail Strip is installed in line, place a string line, slightly off centre, from the top end of the handrail to the bottom.
- This will serve as a guide for where to place each strip accurately onto the rail.



3. Placing Strip onto Handrail

- Remove the backing paper from the tape
- Line up the outside edge with the string line. The strip should be positioned approximately 50mm from the end of the handrail.
- Press firmly down.
- Repeat the above steps for the full length of the handrail leaving a 3mm gap between each length of handrail.



- If the overall length of the handrail is longer than 1 metre as supplied, then the 1 metre lengths should be placed at each end of the handrail and a separate unit should be measured and cut for the middle section.
- Following any cutting of the product, ensure edges are filed smooth and rounded.



4. Mechanical Fixers (screws or rivets)

- For handrails in schools or other places where vandalism may occur, screws (for timber, as described above) or rivets (for metal) **MUST** be used. Install one screw/rivet 10-15mm in from each end of each H series strip.
- For outdoor timber installations screws **MUST** also be used so that the adhesive tape isn't able to lift if the timber distorts or absorbs moisture due to normal weather conditions. 5mm pan head screws are suitable to be screwed down firmly but not so tight that the tape squashes under the strip. Install one screw 10-15mm in from each end and one screw in the middle of each H series strip.
- If in doubt about the adhesion of the strips to any substrate, use screws/rivets for additional security. Install one 10-15mm in from each end and one in the middle of each H series strip.

Note: Flat Handrails (applies to indoor installations only)

- Ecoglo G3-001 or G6-003 can be used on indoor handrails that have flat tops. The same method of installation applies.



Note: Under no circumstances, should handrail product be installed on or around a curve. This includes bends at each end of the handrail.

5. Maintenance of Strips

- Regular dusting with a soft cloth is recommended to keep the strips clean.
- If strips are noticeably dirty, clean with a sponge or cloth.

Instructions For

Path Marking System Inspection and Maintenance



Inspection and Maintenance Procedures

The following inspections are recommended to ensure ongoing compliance with the relevant building code.

Action	Complete
There has been no change in the configuration of the building which renders the marked escape routes unusable.	
All products are still configured as at installation and there is no material damage to any of these products.	
All products are clean from general dust build up and any other specific obscuring deposits.	
All products are clearly visible and have not been covered up by carpet or other materials.	
All products mark a clear path and have not been obstructed by physical hazards such as trolleys, machinery, partitions, etc.	
All lights checked that the positions have not altered from design.	
All lights are in working order and clean.	
All automated lighting control systems are operational as per design.	

The above checks should be carried out regularly and at least once every 12 months to ensure reliability of the system in the case of fire or other emergency.

Any repairs or replacements required should be carried out immediately. A log of all inspections including results and any corrective measures taken should be recorded and kept on the premises for inspection by the building management and fire department. The log should contain the inspection dates and printed name and signature of the person performing the inspection.

In situations where signs and markings are likely to become dirty, it is recommended that frequent checks and cleaning are done.



Instructions For

Cleaning

Signs and Escape Path Markings



Cleaning Instructions For Signs and Escape Path Markings

Overview

- Regular cleaning to remove built up dirt and objects will ensure the Ecoglo products will continue performing to expectation.
- The photoluminescence will continue performing even after UV exposure or exposure to moisture.

Floor and Step Mounted Products

- Vacuuming or brushing with a stiff bristle head (dry or wet) is often enough to keep the strips clean.
- The glowing strip can also be wiped clean with a (dry or wet) sponge or cloth.
- High-pressure water (but not steam cleaning) can also be used.
- Observation will determine if cleaning is required however a regular clean every 4 to 6 weeks or after particularly heavy use should ensure correct performance.

Wall Mounted Products

- Dusting with a soft cloth or brush is often enough to keep the signs clean.
- The glowing material can also be wiped clean with a (dry or wet) sponge or cloth.
- Observation will determine if cleaning is required.

Note

- Do not use highly alkaline or acidic cleaning agents. The pH of the cleaning agents should be between pH 5 and pH 12.
- If cleaning agents are applied at more than pH 10, the Ecoglo material should be rinsed with pH neutral (pH 6 to pH 8) solution afterwards.



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