

Are PL Signs compliant with the Building Code of Australia (BCA) and Fire safety?

Yes. PL Signs were accepted into the BCA on 1st May 2014 as alternatives to internally lit exit signs (fluorescent tube or LED). PL Signs are compliant and accepted by the BCA, fire departments and local councils. The design of your lighting system that includes exit signs needs to take into account certain factors if upgrading to PL exit signs. All of these are dealt with by Lumasign to ensure a fully compliant result.

There are suggestions that PL Signs are not compliant? What does this mean?

This could be referring to any number of very general and false suggestions. This is simply not true and misleading. See above.

Who has authority to decide whether a PL Sign upgrade is compliant?

BCA Certifiers or your local council. It is just the same as when a building is developed and its design needs to comply with the DA that it was approved under and the BCA. In this process the approving local council or a BCA certifier will assess and approve the building to ensure it meets all requirements. They are the only parties with the authority to approve or deny it.

What considerations need to be taken into account in order for the upgrade to be compliant?

Consideration	Answer
The PL exit sign needs to be a compliant design in accordance with the BCA and relevant standards	Lumasign PL signs are a compliant design that meet all requirements. This has been tested by a NATA approved laboratory.
Enough light is focused on the sign to charge it in an emergency situation	Lumasign exit signs have been tested by a NATA approved laboratory under the required conditions and are compliant.
That the integrity of the emergency lighting system that allows for safe evacuation remains intact	Lumasign works with BCA certifiers to design emergency lighting systems that include PL exit signs that are compliant and meet all BCA requirements.

Are Lumasign upgrades compliant? How will I know?

Yes. All Lumasign upgrades are compliant. A reputable BCA certifier will be involved in the entire process and issue a confirmation of compliance for the upgrade. Your building will be totally compliant.

How does a traditional internally lit exit sign work?

Internally lit exit signs are lit by fluorescent lamps (older designs) or LED lamps (newer designs). A fluorescent lamp has a ballast controlling it whilst an LED has a driver. Up to this point, it is just like many other lights. Accompanying the lamps and their control gear is an emergency backup system comprising a battery and inverter. This is kept charged constantly by the mains power. In an emergency where the power is cut off, the emergency backup system takes over and provides the power in place of the mains power to continue to run the lamps for at least 90 minutes.

How does a PL exit sign work?

In the case of a PL exit sign, the sign contains photoluminescent pigments that absorb UV light energy from surrounding light sources and store this like a charge which is then released as light in the form of a glow. So when the power is cut and standard lighting turns off, a PL exit sign continues to glow afterwards and fulfils the role of an emergency exit sign.

The PL exit signs need to last at least 90 minutes at a certain level of brightness. Lumasign exit signs are tested and reported on and meet all required testing standards.

Do Photoluminescent exit signs require a dedicated light source?

Yes it does. A dedicated light source means a light that is on at all times and will serve the purpose of providing enough light to charge the sign with energy so that it can emit its glow when required. 1-2W of power is found to be adequate with LED lighting.

What is the lifetime of an internally lit exit sign?

An internally lit exit sign is dependent upon its technology and quality as to how long it lasts. The uphill battle with internally lit signs in terms of lifetime is that they have several components which are points of failure. The lamp control gear (ballast for fluorescent or driver for LED), inverter or battery. Any one of these components failing can result in the exit sign failing or becoming non-compliant.

LED exit signs offer longer lifetimes, however, they also offer another point of failure which are the LED lamps. LED exit signs often do not have replaceable lamps like fluorescents and if they fail, then the whole exit sign needs to be replaced.

In both technologies, a battery is present. The battery by nature degrades over time and is the relevant factor in whether an exit sign passes the critical discharge test. Only by conducting a discharge test will you know if the battery is still performing satisfactorily.

Fluorescents typically last 2-5 years and LED exit signs 3-8 years. Obviously some can last less or longer, however most have a warranty for no more than 3 years which should give an idea of expectation. There are many claims that exit signs will last 5-10 years. Lumasign's view is that a warranty should be provided to support it. In any case, most managers will know how often exit signs need to be replaced and should make their own judgement.

In both cases, the battery can last a much shorter time.

What is the lifetime of a PL exit sign?

A PL exit sign lasts significantly longer. It does not have the components that can fail like traditional internally lit exit signs. Its ability to glow does diminish a very small amount over time. Lumasign exit sign's photoluminescent properties diminish approx. 1.65% per year. This means they remain compliant for over 25 years before possibly requiring replacement. Lumasign provides a 15 year warranty which covers this degradation and general structure of the sign.

What about the PL sign light source? That can fail too right?

The light source can fail, however the expense in the replacement of an exit sign is mostly in the emergency backup system i.e. the inverter and battery. A PL exit sign doesn't have this. That is why internally lit exit signs cost \$150-300 to replace when a similar power light might cost in the vicinity of \$20-\$40 if you stripped away the battery backup system. Apart from the backup system, exit signs are just a simple luminaire and a 10W fluorescent lamp and ballast, or a 4W LED lamp and driver.

The replacement cost of a PL exit sign's light source is no more than replacing a standard lamp. A 3W LED MR16 that should last at least 5 years costs approximately \$6-12 and will do the job. Lumasign's illuminated mounting bracket has replacement LED strips with a 5 year warranty which are even cheaper.

The key point is you are replacing a simple light source, not an entire battery backup system.

The sign itself will last at least 15 years, which is why we provide a 15 year warranty. There are many claims purporting an exit sign will last 5-10 years, however only a 3 year warranty is provided.

Are PL exit signs going to be cheaper to maintain over internally lit exit signs?

Yes, they will be cheaper by far.

Are PL exit signs going to be cheaper to install?

Yes, the simplest way is to ask us for a quote and you can see for yourself.

There are suggestions that PL signs are not commercially viable overall, is this true?

Unfortunately there has been a lot of unsubstantiated information released by organisations with vested interests in the preservation of internally lit exit sign technologies. Much of this is simply wrong and attempting to misrepresent PL technology. See the financial summary attached for realistic numbers.

Is there any legal exposure by installing PL exit signs?

There is no legal exposure. PL exit signs are approved under the BCA. If installed in a complying manner, there is no legal exposure just like any other product. A reputable BCA certifier is available to sign off on the design in your building and confirm compliance.

Are there any safety issues relating to lighting systems containing PL exit signs?

There are no safety issues. Like any exit sign, it needs to be in working condition in order for the emergency lighting system to be compliant. Provided a Lumasign PL sign has a working light source, such as a Lumasign illuminating bracket, then it is compliant. Similarly an internally lit exit sign needs to have all of its components working and it will be compliant. It's quite simple.

There has been a carefully considered set of requirements documented for the use of PL exit signs under the BCA. Provided you are adhering to this then there are no legal, safety or other issues. A reputable BCA certifier will confirm all this.

Are there any safety issues with PL exit signs themselves?

There are no safety issues. Lumasign PL exit signs are made from harmless, non-toxic materials.

Can PL Exit signs be used in all areas, not just areas with means to automatically exhaust smoke? Yes.

Externally illuminated signs cannot be installed in areas that do not have means to automatically exhaust or exclude smoke. However, PL signs are both externally and internally illuminated by virtue of their photoluminescent material properties, therefore they are excluded from this restriction and can be installed in areas without the need of additional means to automatically exhaust or exclude smoke.

What maintenance regime is required to ensure PL exit signs remain compliant?

Due to the absence of a battery backup system, the only requirement under the BCA for maintenance pertains to cleaning of the face of the sign.

In addition to this, we suggest a visual inspection be conducted to confirm the light sources are working.

Suggested requirements are as follows:

Requirement	Solution
The sign face is clean (standard requirement for all exit signs)	Cleaners to dust the sign face every 12 months
The light source that charges the sign is working	A visual inspection of light sources will quickly determine if they are in working condition. Any that are not working should be replaced.

Traditional exit signs are inspected every 6 months as part of a fire safety inspection , do PL exit signs require the same inspection?

No they do not, as stated above most requirements are removed due to the absence of a battery backup system. Only the cleaning requirements of the signs remain, as with any exit sign.

However, we recommend that you engage your existing fire safety contractor to assess your PL signs and confirm the aforementioned two maintenance suggestions are being met.