

Fire Photoluminescent Exit Signs

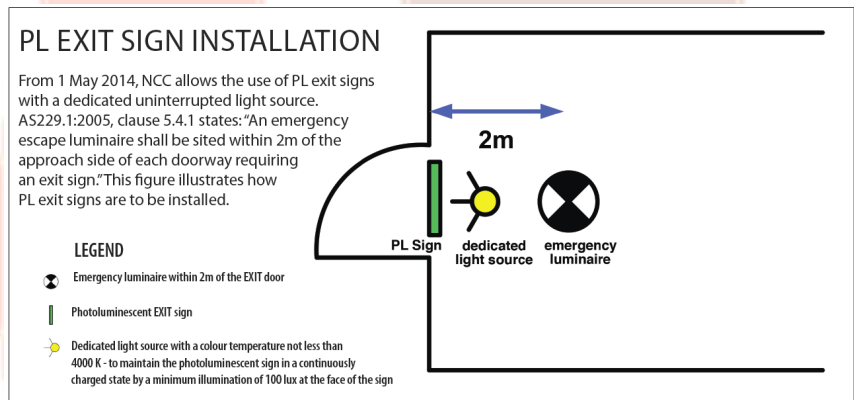
The Issue: The National Construction Code 2014 (Building Code of Australia contains new provisions that allow the use of Photoluminescent Exit Signs where specific criteria is met.

Our Advice: On 1 May 2014 an amendment to E4.8 of the National Construction Code of Australia (NCC) (formerly The Building Code of Australia), was enacted, permitting the use of photoluminescent ("PL") exit signs.

These photoluminescent 'glow in the dark' exit signs pose a major issue being the potential confusion amongst electricians, building owners and building managers, as to how photoluminescent exit signs may be used.

The installation of a photoluminescent exit sign requires the installation of two additional luminaires. Firstly, the NCC amendment requires that a photoluminescent exit sign must have a dedicated, uninterrupted light source continuously illuminating 100 lux onto the face of the sign. Secondly, the NCC already requires, via AS/NZS 2293.1, that an emergency luminaire must be installed within 2m of an exit door or typically where exit signs are located (AS2293-1 clause 5.4.1).

Unlike electrically powered exit signs, PL material cannot achieve a light output to be classified as an emergency luminaire, so this additional emergency luminaire is essential.



Emergency and exit lighting is an essential life safety device and the non-compliance with regulations regarding its correct installation and maintenance jeopardises the safety of building occupants. There is therefore a legal requirement to comply with the NCC and AS/NZS 2293.1 and the WH&S legislation. A serious breach can result in an indictable offence, and carries significant financial penalties and terms of imprisonment for individuals.

Below: Comparison between internally illuminated exit signs and PL exit signs shown before Power failure and then at 10minutes, 30 minutes and 60 minutes after power failure



Safety Issues

There is a strong consensus across a number of industry bodies, experts and academics that even when installed with the additional luminaires in accordance with NCC compliance, the use of PL signs significantly compromises safety.

Testing and empirical data support a worldwide consensus that the safety of an exit sign is determined by its luminance level and the appropriate luminance level to ensure safe egress in an evacuation scenario is between 8cd/m² (candela per square meter) and 15cd/m². The amendment to the NCC specifies a minimum luminance for PL exit signs of 30mcd/m² (0.03cd/m²) which is essentially 250 times less than the minimum 8 cd/m² luminance provided by an existing powered exit sign.

Additional information on this topic is available at www.lightingcouncil.com.au