

EMC compliance for lighting equipment

Electromagnetic interference can reduce the performance of electrical products and cause disruption to communications. With the rapid growth in commercial and domestic electronic systems and the use of digital technology, electromagnetic compatibility is an increasingly important issue.

To address this problem, the Australian Communications and Media Authority (the ACMA) introduced electromagnetic compatibility (EMC) regulatory arrangements to protect the performance of electrical products and prevent disruption to communications. All products that fall within the scope of the regulations must be compliant and must be appropriately labelled with a C-Tick mark. It is important that manufacturers and importers understand the methods and regulation of compliance.

Accountability for compliance with the EMC regulatory arrangements rests with the Australian supplier; who can be the importer, manufacturer or agent of the importer or manufacturer; who has taken responsibility for the supply of the products in Australia.

Electrical lighting

Electric lighting products, such as incandescent lamps, luminaires, ferro-magnetic (fluorescent lighting) and electronic ballasts that connect to low voltage mains electricity supply or battery operated products fall within the scope of [AS/NZS CISPR 15](#). The international standards that are equivalent to AS/NZS CISPR 15 are CISPR 15 or the European EN 55015.

The ACMA has limited the level of radiofrequency emissions (radiated and conducted) from all lighting equipment with a primary function of generating or distributing light intended for illumination purposes. Products include UV and IR radiation equipment, neon advertising signs, street/flood lighting intended for outdoor use and transport lighting as installed in buses and trains.

All two and three phase AC electrical mains connected lighting equipment, battery powered and DC powered lighting equipment must also comply with the EMC regulatory arrangements.

Depending on the risk of interference from the product, compliance level 1 or 2 will apply. Most electrical and electronic products are covered by the EMC regulatory arrangements. Most lighting equipment will be under medium risk (compliance level 2) with the exception of incandescent lights and battery powered lighting which are low risk (compliance level 1).

Low risk (compliance level 1) applies to simple devices and includes battery powered devices. (See also – Battery powered devices fact sheet)

Incandescents

While compliance with the applicable standard is mandatory, there are no requirements to hold a test report, label or maintain a Supplier's declaration of conformity (DoC) for low risk (compliance level 1) devices. If a supplier however chooses to voluntarily label their device then they must maintain a DoC.

Emergency lighting

Currently, emergency lighting is considered to be lighting equipment that reverts to an alternative power source in an emergency configuration. It should be tested in both the mains on mode and the emergency (mains off) mode of operation. AS/NZS CISPR 15 contains limits and instructions for the testing of luminaires while in the emergency mode.

Responsibility for compliance

Within the lighting industry, products may reach the market by the manufacture, importation or contract supply of complete luminaires or complex components, for example, ballasts, gear trays, transformers. All supply routes may be used by the same company. The obligation to comply with EMC arrangements rests with the

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manufacturer or importer of complete luminaires or complex components.

To ensure the medium risk requirements (compliance level 2) are met, the product must be labelled and be compliant with an applicable standard. The supplier must also hold compliance records containing:

- > a completed DoC (For compliance level 1 and 2, the local supplier also has the option of holding a DoC supplied by an overseas manufacturer however the legal responsibility for the device complying with the applicable standard still remains with the local supplier);
- > a product description; and
- > a test report or technical construction file (TCF).

To keep the EMC regulations simple, the supplier is only required to register once with the ACMA to use the C-Tick label. All other documents, the DoC and the supporting evidence that establishes the conformity of the device with an applicable standard is held by the supplier for audit purposes. Once these basic requirements have been satisfied, a product can be offered for sale.

Responsibility under the EMC regulatory arrangements is related to the question of who is the supplier. Any party carrying out the refit of existing lighting installations is a supplier under the terms of the EMC scheme and is responsible for compliance of:

- > complex assemblies/components (if they import or manufacture those components); and
- > refitted luminaires (if the refitted luminaires are effectively a new product).

Compliance routes

A test report or TCF may be used to declare compliance with an applicable standard. The TCF route is particularly useful for lighting companies with a large number of products that fall into various categories or 'families' of devices that are sufficiently similar for them to be grouped together; for example, grouped into wattage range or product types, such as compact or circular fluorescents.

Compliance should be demonstrated on a typical example of a product within the family group that may be used as a benchmark. All other similar devices would be covered as variants and listed in the compliance records with a description of

the changes to the basic model. In this way, four or five compliance records with listed variants may cover the supplier's range of lighting products.

Changes to existing luminaires likely to result in changes to the radiofrequency signature

Some changes made to an existing luminaire will affect the radiofrequency (RF) signature of the original device and will result in what is effectively a new product. The most critical of these changes include:

- > removal of power factor correction capacitor;
- > inclusion of a blocking inductor into the luminaire circuit;
- > introduction of an electronic ballast;
- > re-configuration of the luminaire wiring layout; and
- > introduction of an emergency conversion pack.

Definitions

Complex assemblies are defined as a device that is supplied in a configuration that contains two or more component devices and does not form part of a larger device. Complex assemblies must meet the applicable standard if sold separately on the Australian market. Examples of a complex assembly include the following:

- > gear trays (a mechanical/electrical sub-assembly that includes the ballast and wiring to lamp holders);
- > electronic ballasts;
- > dimmers, sensors and other light regulating devices; and
- > electronic transformers.

More information

More information about the [EMC regulatory arrangements](#) is available on the ACMA website.

You can also contact comply.label@acma.gov.au.

Please note: this document is intended as a guide only and should not be relied on as legal advice or regarded as a substitute for legal advice in individual cases.

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