

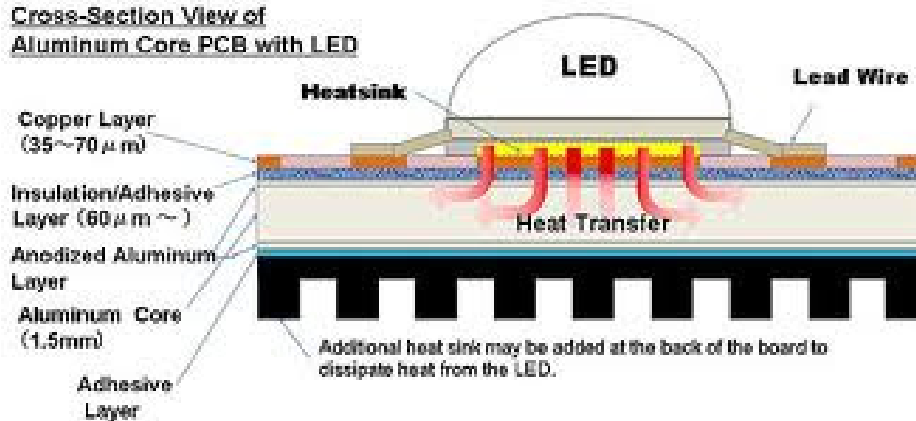
OSM/LUM DECISION SHEET (DSH)

Standard(s) (Incl. year)	Subclause(s):	Tracking No.	Year
EN 62031:2008/A2:2015 EN 60598-1:2015/A1:2018 EN 61347-1:2015 EN 62560:2012/A1:2015	General	DSH 1086A	2019
Category:			
LITE			
Subject:	Key words:	Developed by	Approved at
Insulation class MCPCB material used for LED modules	- Insulation between tracks - Insulation layer - Metal Core PCB	OSM/LUM-ETF5	2019 ETICS Plenary Meeting

Question

Is it possible to qualify the insulation layer between the track conductors and aluminium core in Metal Core PCB as an insulation layer providing reinforced insulation according to the following standards: EN 62031, EN 60598-1, EN 61347-1, EN 62560?

Cross-Section View of Aluminum Core PCB with LED



Decision

No, currently known MCPCB insulation systems are only to be considered as a single level of insulation (basic or supplementary).

Explanatory notes

MCPCB's can only be accepted as basic insulated substrate according EN 62031. The tests and the requirements in the standards together with the condition of use of LED module (e.g. mechanical stress during mounting/transportation, thermal stress during soldering process, fault condition in the electronic components, ...) cannot ensure that the insulation propriety of the layer between the track conductors and aluminium core will not be reduced all over the life.

For that reason in some applications it is needed an additional insulation (e.g. supplementary insulation to fulfill the requirements in class II luminaire, see also Annex X of EN 60598-1:2015).

Remark 1: the requirement for a supplementary insulation is in the luminaire equivalent to basic insulation. The approved basic insulation of the MCPCB's can be used in a luminaire for a supplementary insulation also.

Remark 2: the possibility to qualify MCPCB insulation as double or reinforced insulation is currently under study in IEC TC34 but the identification of a complete set of requirements to support this have not yet been possible to define. Liaison between CTL ETF5/OSM LUM and TC34 remains active to monitor this work.