

## ICEL Technical Statement No. 6

### Conversions of mains lighting luminaires using kits in “socks”

For some years some conversions of mains lighting luminaires have been carried out with the control gear and batteries enclosed in “socks” rather than conventional rigid enclosures.

The “socks” are typically intumescent fabric and the control gear and batteries are enclosed in the sock in a “sausage” format, linked to the converted luminaire so that the conversion equipment can be pushed into the ceiling. This often entails passing the conversion equipment through a hole in a ceiling made to accept the converted mains downlight unit.

#### Mechanical strength

The “sock” conversion has the advantage of being very flexible but offers limited mechanical protection to the enclosed equipment.

Clause 22.6.4 of BSEN 60598-2-22 requires that the mechanical strength tests given in 4.13 of BSEN 60598-1 shall be applied with a minimum impact energy of 0.35Nm to all external parts

The “sock” construction is unlikely to provide adequate mechanical protection without the conversion equipment itself being housed in suitable enclosures. The interconnecting wiring must likewise be adequately protected.

#### Resistance to Fire

The “sock” fabric shall withstand the test given in 13.3.2 of BSEN 60598-1 but at a test temperature of 850°C. Ties or wrap fixings used to secure the conversion equipment inside “socks” shall also withstand the test given in 13.3.2 of BSEN 60598-1 but at a test temperature of 850°C. In addition they shall maintain their function to secure the equipment in “socks” during the specified test.

#### Terminals

Terminals must be adequately rated and suitably protected to meet the Creepage distances and Clearances requirements of section 11 of BSEN 60598-1.

#### Wiring

Wiring used to connect conversion equipment to a converted luminaire shall comply with the requirements of clause 4.10 of BSEN 60598-1 and adequately resist mechanical damage. Where conversion equipment is separated from the converted luminaire by more than 1 m wiring shall additionally, adequately resist the effects of fire as described below:

The cables should have a duration of survival of 60 min when tested in accordance with BS EN 50200:2006 (which corresponds to a classification of PH 60 as detailed in BS EN 50200:2006, Annex D) and a duration of survival of 30 min when tested in accordance with BS EN 50200:2006, Annex E.