This information is available on the Internet at www.hansen-neon.de or www.klinger-neon.de N10E/02/2003
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Contact protection for illuminated advertisement systems according to EN 50107

Section 7 of the European standard EN 50107 regulates the protection against accidental direct contact of active (live) parts. This section stipulates how high-voltage fluorescent tube devices and systems must be manufactured and installed in order to eliminate any danger to persons.

Also defined in this standard is the term "arm's reach". Within this zone, the protection requirements are higher than outside.

All electrode connections must be protected by means of a silicone cap.

All external metal parts must be earthed.

Protection of the electrode connections

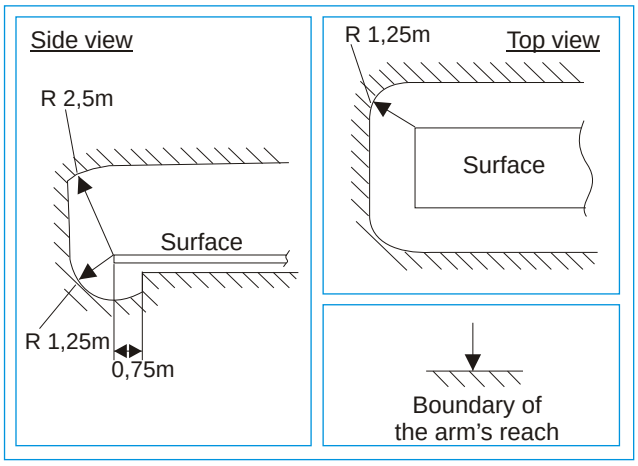
The EN 50107 requires the use of protective covers (silicone caps) for all electrode connections. Silicone caps are also required within sealed enclosures.

Note:

The silicone cape is not valid as mechanical protection. For this purpose, a suitable metal or plastic housing is required.

Arm's reach

The standard uses the following drawing to explain the arm's reach:



The "arm's reach" is the zone extending from any point on a surface where persons usually stand or move about to the limits which a person can reach with the hand in any direction without assistance.

The arms reach extends to a height of 2.5 m and applies indoors as well as outdoors.

Within the arm's reach,

the following protection requirements are valid:

- **In case of open tube installation (i.e. the fluorescent tubes are exposed and can be contacted), a mechanical protective enclosure according to IP 2x and an open circuit protection is required.**
- **No open circuit protection is required if a complete mechanical protection of the fluorescent tubes is provided (e.g. by the housing of a neon letter or an acrylic glass display).**
- **External metal parts must be earthed.**
- **All electrode connections must be protected by silicone caps.**

Notes:

A complete mechanical protection is achieved if the housing does not exhibit any opening with a diameter of more than 12 mm (degree of protection IP 2x), even if a tube should break.

A protection against ingress of water is not required according to EN 50107.

Please refer to page 13 for a detailed explanation on the degree of protection IP 2x.

Outside the arm's reach,

the following protection requirements are valid:

- **In case of open tube installation (i.e. the fluorescent tubes are exposed and can be contacted), a mechanical protective enclosure according to IP 2x or an open circuit protection is required.**
- **No open circuit protection is required if a complete mechanical protection of the fluorescent tubes is provided (e.g. by the housing of a neon letter or an acrylic glass display).**
- **External metal parts must be earthed.**
- **All electrode connections must be protected by silicone caps.**