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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

### TECHNICAL COMMITTEE N° 108: SAFETY OF ELECTRONIC EQUIPMENT WITHIN THE FIELD OF AUDIO/VIDEO, INFORMATION TECHNOLOGY AND COMMUNICATION TECHNOLOGY

#### Chairman's Advisory Panel - Q.45

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TC74 established a Chairman's Advisory Panel in 1987. The purpose of the panel was to provide the opinion of experienced members of TC74 to questions of the intent of specific requirements in IEC 60950. In October 2001 TC74 merged with TC92 to form TC108. Details of the organization of the committee will be confirmed at the TC108 plenary meeting to be held in November 2002. In the interim, the Chairman's Advisory Panel established by TC74 is continuing to respond to questions about the IEC 60950 series.

The following notes are to be read in conjunction with Opinions of the Panel.

1. The Panel consists of active members of TC108, but its Opinions are those of the Panel and are not voted decisions of the IEC.
2. If it is felt that the Question arose due to lack of clarity in a Publication, the matter is brought to the attention of the appropriate group in TC108.
3. Panel Opinions are restricted to interpretation of the words of the Publication in question, as the members of the Panel recollect the original intentions of TC108.
4. The use made of Panel Opinions by the originators of Questions for Interpretation, and by others, is their own responsibility. No guarantee can be given that a subsequent amendment of the Publication will support the Opinion.

Questions related to the IEC 60950 series are welcome. Such inquiries are to be forwarded through the questioner's National Committee to the TC108 Secretary. Responses are sent directly to the questioner, are shared with TC working group members through the TC108 IEC web site and sent to the Secretary of the IEC/EE/CTL for consideration.

TC108/TC74 Chairman's Advisory Panel

**QUESTION 45**

April 2002

**IEC 60950, Ed. 3, 4.7.3.1**

Background:

The equipment in question is a power supply intended for building in. The power supply consists of a PWB with most of its components on the upper side. This side is covered by a fire enclosure. The bottom of the fire enclosure is the board itself. On the lower side of the board there are a few smd-resistors which fulfil Subclause 4.7.2.2 , fifth dash (they are components in secondary circuits supplied by limited power source and are mounted on material of flammability class v-1 or better) and therefore they do not need a fire enclosure.

The power supply is built into an equipment with an enclosure bottom of material of flammability class HB

**Question**

Are the conductors (the copper traces) on the lower side of the PWB, which are in the primary circuit considered as "components" in the sense of Subclause 4.7.3.1 and is there a need to have a distance of 13mm to the bottom of the enclosure under the PWB, or is there a need for the mentioned barrier of flammability class V-1?

Is there another Clause requiring this barrier or is it possible to use the PWB as bottom of the fire enclosure?

**Opinion of the Panel**

As IEC 60950-1 is written, printed board traces that are merely conductors are not "components" and therefore 4.7.3.1 does not apply. Nevertheless, it is recognised that the traces on printed boards could overheat under fault conditions. Hence, in accordance with Method 1 of 4.7.1, the requirements of 5.3 apply (except for 5.3.6 c)), in other words, fault testing should be carried out.

Three further points should be noted.

1. It may be insufficient for the printed board to be flammability class V-1, because some other parts of 4.7.3.2 may also apply.
2. For transportable equipment, 4.6.4 also applies.
3. The question of a printed board forming a fire enclosure was never specifically considered when the standard was written. It is the intention of the Chairman's Advisory Panel to discuss this matter with experts in TC108/WG8, meeting in November 2002. Consequently, a future amendment to the standard, taking this situation into account, might contain more restrictive requirements.