



INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE NO. 74: SAFETY AND ENERGY EFFICIENCY OF IT EQUIPMENT

Chairman's Advisory Panel - Q.40

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.

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

1. The Panel consists of active members of TC74, but its opinions are those of the Panel and are not voted decisions of the IEC.
2. Where it is felt that a query arose due to lack of clarity in a standard, the matter was brought to the attention of the appropriate group in TC74.
3. Panel opinions were restricted to interpretation of the words of the standard in question, as the members of the Panel recollect the original intentions of TC74. The Panel was not concerned with the application of the standard by test agencies and approval authorities.

Questions related to IEC 60950, Edition 3 are welcome. Such inquiries are to be forwarded through the questioner's National Committee to the TC74 Secretary. Responses are sent directly to the questioner, are shared with TC working group members through the TC74 IEC web site and sent to the Secretary of the IECEE/CTL for consideration.

TC 74 Chairman's Advisory Panel

QUESTION 40
January 2000

Question

Class II equipment

1.2.4.2 of EN 60950 Class II Equipment: Equipment in which protection against electric shock does not rely on BASIC INSULATION only, but in which additional safety precautions, such as DOUBLE INSULATION or REINFORCED INSULATION, are provided, there being no provision for protective earthing or reliance upon installation conditions.

If the transformer is installed within an enclosure in an area which is only accessible to service personnel, and the ferrite core is further marked with a warning label according to paragraph 2.6.1 of EN 60950, does in such a case the above underlined passage imply that insulation between circuits at hazardous voltage to the core can rely on BASIC INSULATION only as sufficient for achieving the protection against electric shock?

A support to an interpretation such as ours we also find in the first page of clause 9.2 of 61558-1 IEC:1997, as follows:

9.2 Transformers with a protection index other than IPOO shall be so constructed and enclosed that there is adequate protection against accidental contact with **hazardous live parts** and, for **class II transformers**, with metal parts separated from **hazardous live parts** by **basic insulation** only. The requirement applies even after removal of detachable parts, except for:

- lamps with caps other than E10;
- type D fuse-carriers.

The insulating properties of lacquer, enamel, paper, cotton, oxide film on metal parts and sealing compound shall not be relied upon to give the required protection against accidental contact with **hazardous live parts**.

NOTE 1 - Self-hardening resins are not regarded as sealing compound.

Shafts, handles, operating levers, knobs and the like shall not be **hazardous live**.

*Compliance is checked by inspection and by the relevant tests of IEC 529. For **ordinary transformers**, the test is made with the standard test finger shown in figure 2 only.*

*In addition, apertures in **class II transformers** and apertures in **class I transformers** other than those in metal parts connected to an earthing terminal are tested with the test pin shown in figure 3.*

The test finger and the test pin are applied, without appreciable force, in every possible position.

Opinion of the Panel

The construction described in the question, summarized below, is considered to comply with the standard.

- The unearthed ferrite core of the transformer is insulated from all HAZARDOUS VOLTAGE circuits by BASIC INSULATION complying with the relevant requirements of the standard; and
- The core is marked with a warning label complying with 2.6.1 of IEC 60950, third edition; and
- The transformer will be installed in a SERVICE ACCESS AREA as defined in the standard, i.e. not accessible to a USER.

Subclause 1.2.4.2, CLASS II EQUIPMENT, is not relevant to this question, because the construction does not fall within that definition. The words underlined in the question relate to the installation of complete equipments, not to individual components.

Subclause 9.2 of IEC 61558-1 is not relevant to this question because it relates to transformers that are accessible to USERS.

Action

None.