

**COLLECTION OF THE CTL DECISIONS  
DECISION SHEET**

<b>Standard:</b> IEC 950 (1991) 2 <sup>nd</sup> ed., Amdts.1(1992), 2(1993), 3(1995), 4(1996); IEC 60950, 3 <sup>d</sup> edition (1999)	<b>Sub clause:</b>  2.1.1.1	<b>Sheet No.</b>  <b>439</b>
<b>Subject:</b> Connectors and Openings	<b>Key words:</b> Contact with hazardous voltages, test finger	<b>Decision taken at the</b> <b>39<sup>th</sup> meeting 2002</b>
<p><b>Question:</b>          Is it the intent of the fourth dash of Clause 2.1.1.1 which reads “functional or basic insulation of parts or wiring at hazardous voltages” to include a 2 mm air gap of clearance from the tip of the test finger since that dash says “basic insulation” and 2mm or clearance is basic insulation? A subassembly of IT equipment (e.g., uninterruptible power supply) has modular power supplies that are located in operator accessible compartments and are removable by the user. If the power supply is removed, the supply connector becomes exposed within the compartment. It is not permitted to make a contact with a hazardous voltage not exceeding 1000 volts a.c. or 1500 volts d.c. Is this requirement sufficient or is there a need for an additional gap between the part at hazardous voltage and the tip of the test finger figure 19 of IEC 950 (figure 2A in IEC 60950)?</p> <p><b>Decision:</b>          Contact is verified by means of a test finger, figure 19 of IEC 950 (figure 2A of IEC 60950), which shall not contact parts described above when applied to openings in the enclosure (compartment) after removal of parts that can be detached by an operator, including fuseholders, and with operator access doors and covers open. It is permitted to leave lamps in place for this test. Connectors that can be separated by an operator, other than plugs and socket-outlets complying with 60083, IEC 60309 and IEC 60320 shall also be tested during disconnection. Where contact is not permitted in the above tests, there is no requirement for a minimum air gap between the tip of the test finger and the part at a hazardous voltage not exceeding 1000 V a.c or 1500 V d.c.</p> <p><b>Explanatory notes:</b>          The above question was discussed at the Helsinki meeting of TC74/WG8 and it was noted that different test houses are applying Clause 2.1.1.1 differently. Some are requiring an additional air gap between the test finger and the part at hazardous voltage, similar to the requirement for voltages in excess of the limits stated above. A proposal has been submitted to revise IEC 60950-1 first edition to reflect the decision above. This Decision serves in the interim to ensure consistent interpretation of the 2.1.1.1 requirements pending formal revision of the standard.</p>		