

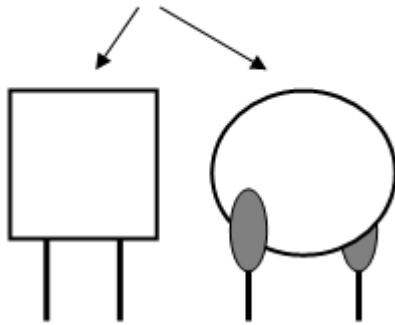
☒ **CTL Provisional DECISION SHEET (PDSH)**  
☐ **CTL DECISION SHEET (DSH)**

| Standard(s) (incl. year)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Subclause(s)                                        | Tracking No.        |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|---------------------|--|--|
| IEC 62368-1:2014<br>IEC 62368-1:2018<br>IEC 62368-1:2023                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5.5.2                                               | PDSH 2305           |  |  |
| <b>Category</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                     |                     |  |  |
| ITAV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                     |                     |  |  |
| <b>Subject</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>Keywords</b>                                     | <b>Developed by</b> |  |  |
| Insulation properties of housing of subclass Y capacitors                                                                                                                                                                                                                                                                                                                                                                                                                                                  | - subclass Y capacitor<br>- housing<br>- insulation | ETF 2               |  |  |
| <b>Question</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                     |                     |  |  |
| Capacitors complying with IEC 60384-14:2013 + IEC 60384-14:2013/AMD1:2016 and earlier versions are permitted to bridge certain levels of insulation. Does the housing of such capacitors provide the same level of insulation?<br><br>Example: A subclass Y1 capacitor is permitted to bridge double or reinforced insulation. Is it permitted that this capacitor's housing serves as double or reinforced insulation to other circuit parts, such as a transformer core?                                 |                                                     |                     |  |  |
| <b>Decision</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                     |                     |  |  |
| The housings of subclass X and Y capacitors complied with IEC 60384-14:2013 + IEC 60384-14:2013/AMD1:2016 and earlier versions are considered to provide insulation at the same level as the capacitors provide between the leads according to IEC 62368-1 annex G.11, with the exception of the areas near to the leads.<br><br>The housing of such capacitors shall not be user accessible or exposed to undue mechanical stress, which could degrade the insulating properties of the housing material. |                                                     |                     |  |  |
| <b>Explanatory notes</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                     |                     |  |  |
| <u>Enquiry:</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                     |                     |  |  |
| Date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2026-01-20                                          |                     |  |  |
| <u>PDSH:</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                     |                     |  |  |
| Year of publication:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2026                                                |                     |  |  |
| To be approved at CTL plenary:                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2027                                                |                     |  |  |
| <u>DSH</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                     |                     |  |  |
| Publication date:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                     |                     |  |  |
| The new version of IEC 60384-14:2023 covers this potential loss of insulation in the normative text of Annex J: "Annex J (normative) Description of creepage/clearance distance measurement for cased and conformal coated capacitors" (IEC 60384-14:2023), and following the Figure J.3 (IEC 60384-14:2023).                                                                                                                                                                                              |                                                     |                     |  |  |
| Those changes introduced back then in IEC 60384-14:2023 result from the coordinated work of TC 40 (in charge of developing IEC 60384-14) and TC 108.                                                                                                                                                                                                                                                                                                                                                       |                                                     |                     |  |  |

Supplementary information:

1. Reference is made to CTL decision 738 for IEC 60950-1:2001 and IEC 60950-1:2005, referring to OSM/EE decisions 95/9 and 97/1 for EN 60950-1:2001 for sub-clause 1.5.7.1;
2. The enclosure of Y1 capacitors is considered to comply with the requirements for reinforced insulation with the exemption of the area near to the leads where the insulation is thinner.

Only the white area is to  
be considered as  
reinforced insulation.



Note - Voltage test levels in IEC 60384-14 & 603084-1 on external insulation are sometimes slightly lower for some applications than those required by IEC 62368-1 for solid insulation. For practical purposes, the decision is valid because (a) the external insulation of the IEC 60384-14 capacitors are subjected to a relatively robust "voltage proof" testing (per Table 3/Test c of 60384-1, and Table 10 of IEC 60384-14) and (b) the capacitors meet the 'component standard' requirements for such insulation and use.

The decision does not only apply to subclass Y1 capacitors, but also to other types, such as those specified in Table G.12 of IEC 62368-1:2023.