

## IEEE Standards Interpretations for IEEE Std C37.20.7™-2007 IEEE Guide for Testing Metal-Enclosed Switchgear Rated Up to 38 kV for Internal Arcing Faults

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### Interpretation Request #1

Under what conditions does ignition of indicators due to glowing particles constitute a FAILURE and when is it a PASS? Criterion 4 states that: "Indicators ignited as a result of the burning of paint or labels, glowing particles, and so on, are excluded" i.e. it is a PASS when indicators ignite as a result of glowing particles.

Criterion 4 continues with: "Holes in horizontally mounted indicators caused by particles that do not ignite the indicator are ignored." This implies that if indicators are ignited by glowing particles it is a FAILURE and contradicts the earlier statement in Criterion 4.

An interpretation of term "ignition" is requested. It is assumed that the definition of "ignition" in this context requires the presence of a flame which consumes cloth beyond that affected by the passing particle.

### Interpretation Response

The following is the C37.20.7 Working Group response to this request for interpretation. The request was reviewed and it was concluded that the Guide is correct as written. A line-by-line explanation is as follows:

Q: Under what conditions does ignition of indicators due to glowing particles constitute a FAILURE and when is it a PASS? Criterion 4 states that: "Indicators ignited as a result of the burning of paint or labels, glowing particles, and so on, are excluded" i.e. it is a PASS when indicators ignite as a result of glowing particles.

A: The intent of the indicator is to monitor for burning gases. Glowing particles are specifically excluded provided it can be positively shown that the ignition was caused by a glowing particle and not by escaping gases.

Q: Criterion 4 continues with: "Holes in horizontally mounted indicators caused by particles that do not ignite the indicator are ignored." This implies that if indicators are ignited by glowing particles it is a FAILURE and contradicts the earlier statement in Criterion 4.

A: The working group disagrees with the above interpretation of this sentence. Stating that holes in the horizontally mounted indicators caused by falling particles are ignored does not imply that ignition by glowing particles is a failure. It clearly states that both conditions, ignition by a glowing particle and small holes created by non-glowing particles, do not constitute a failure in the horizontal indicators only. For vertical indicators, glowing particle ignition is ignored, but holes in the indicators are cause for failure as they indicate part ejection in the assessment area as defined by Criterion 2.

Q: Please also confirm the following interpretation of the term "ignition." It is assumed that the definition of "ignition" in this context requires the presence of a flame which consumes cloth beyond that affected by the passing particle.

A: The working group agrees with this interpretation of the term "ignition."