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TECHNICAL REPORT

Fire hazard testing -
Part 2-16: Glowing/hot-wire based test methods - Summary of the round robin tests related to the use of pyrometer for glow-wire temperature measurements according to IEC 60695-2-10

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IEC TR 60695-2-16 has been prepared by IEC technical committee 89: Fire hazard testing. It is a Technical Report.

The text of this Technical Report is based on the following documents:

Draft	Report on voting
89/1611/DTR	89/1621/RVDTR

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this Technical Report is English.

A list of all parts in the IEC 60695 series, published under the general title *Fire hazard testing*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

– reconfirmed,
– withdrawn, or
– revised.

INTRODUCTION

Since over the recent years new technologies related to the measurement of temperature are increasing on the market, IEC Technical Committee 89 "Fire hazard testing" has decided to investigate the possibility to improve the temperature measurement system described in the IEC 60695-2-10.

Therefore, during its 2019 plenary meeting, the IEC TC 89 created the Ad-Hoc Group 14 "Glow-wire testing; Optimization of the temperature measuring system" with the task to investigate possible variation factors affecting the current temperature measurement system described in IEC 60695-2-10 and consequentially to possibly develop a proposal for improvement of IEC 60695-2-10.

Between 2019 and 2023 the Ad-Hoc Group activities focused on:

– Evaluation of the possible displacement of the thermocouple within the glow-wire pocket hole;
– Evaluation of the comparability of temperature measurements between the thermocouple and the pyrometer

During the investigation of the above-mentioned items, the Ad-Hoc Group 14 performed a pre-round robin test, where the participation was limited to the Ad-Hoc Group 14 members, and two round robin tests, where the participation was open to all National Committee experts.

The outcome of the work of the Ad-Hoc Group resulted in a proposal for a new Annex to IEC 60695-2-10, describing the minimum technical characteristics and usage conditions for the pyrometer, as alternative temperature measurement system to the thermocouple.

The IEC has decided to develop this Technical Report for knowledge retention purposes as well as to create a reference for future activities either related to the improvement of IEC 60695-2-10 or for other projects involving the execution of round robin activities.

1 Scope

This part of IEC 60695-2 specifies the results of the round robin tests related to the use of the pyrometer, for the measurement of the glow-wire temperature, according to IEC 60695-2-10.

This Technical Report summarize the objectives and the results of a pre-round robin test and two round robin tests, performed by the IEC: "Glow-wire testing: Optimization of the temperature measuring system".

The outcome of the work conducted by the IEC resulted in a proposal for a new Annex in IEC 60695-2-10, describing the minimum technical characteristics and usage conditions for the pyrometer, as an alternative temperature measurement instrument to the thermocouple.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 13943:2023, *Fire safety – Vocabulary*