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High-voltage switchgear and controlgear – Part 312: Guidance for the transferability of type tests of high-voltage/ low-voltage prefabricated substations

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 312: Guidance for the transferability of type tests of high-voltage/low-voltage prefabricated substations

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IEC TR 62271-312, which is a Technical Report, has been prepared by subcommittee 17C: Assemblies, of IEC technical committee 17: High-voltage switchgear and controlgear.

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

Draft TR	Report on voting
17C/737/DTR	17C/753B/RVDTR

Full information on the voting for the approval of this Technical Report can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62271 series, published under the general title *High-voltage switchgear and controlgear*, can be found on the IEC website.

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

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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HIGH-VOLTAGE SWITCHGEAR AND CONTROLGEAR –

Part 312: Guidance for the transferability of type tests of high-voltage/low-voltage prefabricated substations

1 Scope

This document refers to high-voltage / low-voltage prefabricated substations (hereinafter prefabricated substations) as specified in IEC 62271-202:2014.

This document, among other options as agreed between manufacturer and user, can be used for the transferability of type tests performed on one or more prefabricated substations with a defined set of ratings and arrangement of components to another prefabricated substation with a different set of ratings or different arrangement of components. It supports the selection of appropriate representative test objects for that purpose in order to optimize the type testing procedure for a consistent conformity assessment.

This document utilises a combination of sound technical and physical principles, manufacturer and user experience and mutually agreed upon methods of calculation to establish pragmatic guidance for the transferability of type test results, covering various design and rating aspects.

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.

IEC 60050-441:1984, *International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses*
IEC 60050-441:1984/AMD1:2000

IEC 60076-1:2011, *Power transformers – Part 1: General*

IEC 60076-2, *Power transformers – Part 2: Temperature rise for liquid-immersed transformers*

IEC 60076-7, *Power transformers – Part 7: Loading guide for mineral-oil-immersed power transformers*

IEC 60076-11, *Power transformers – Part 11: Dry-type transformers*

IEC 60076-12, *Power transformers – Part 12: Loading guide for dry-type power transformers*

IEC 60282-1:2020, *High-voltage fuses – Part 1: Current-limiting fuses*

IEC 61439-1:2020, *Low-voltage switchgear and controlgear assemblies – Part 1: General rules*

IEC 62271-1:2017, *High-voltage switchgear and controlgear – Part 1: Common specifications for alternating current switchgear and controlgear*

IEC 62271-200:2011, *High-voltage switchgear and controlgear – Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV*

IEC 62271-202:2014, *High-voltage switchgear and controlgear – Part 202: High-voltage/low-voltage prefabricated substation*

IEC TR 62271-208:2009, *High-voltage switchgear and controlgear – Part 208: Methods to quantify the steady state, power-frequency electromagnetic fields generated by HV switchgear assemblies and HV/LV prefabricated substations*