AS 60060.3—2008

Australian Standard®

# High-voltage test techniques

## Part 3: Definitions and requirements for on-site testing

STANDARDS
Australia

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- Australian Electrical and Electronic Manufacturers Association
- Australian Railway Association
- Energy Networks Association
- Engineers Australia
- Testing interests

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# Part 3: Definitions and requirements for on-site testing

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# PREFACE

This Standard was prepared by the Standards Australia Committee EL-007, Power Switchgear.

The objective of this Standard is to provide requirements for on-site high-voltage tests with direct voltage, alternating voltage, lightning impulse voltage and switching impulse voltage on equipment with highest voltage greater than 1 kV.

This Standard is identical with, and has been reproduced from IEC 60060-3, Ed. 1 (2006), *High-voltage test techniques – Part 3: Definitions and requirements for on-site testing*.

As this Standard is reproduced from an International Standard, the following applies:

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The terms 'normative' and 'informative' are used to define the application of the annex to which they apply. A normative annex is an integral part of a standard, whereas an informative annex is only for information and guidance.

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# INTRODUCTION

The requirements specified in IEC 60060-1 and IEC 60060-2 cannot always be achieved during on-site tests, due to a variety of external factors not present in factory and laboratory tests such as external electric and magnetic fields, weather conditions, etc.

On-site high-voltage tests are required:

– as withstand tests as part of a commissioning procedure on equipment to demonstrate that transport from manufacturer to site, and the erection on-site complies with manufacturer's specification;

– as withstand tests after on-site repair, to demonstrate that the equipment has been successfully repaired, and is in a suitable condition to return to service;

– for diagnostic purposes, e.g. PD measurement, to demonstrate if the insulation is still free from dangerous defects, and as an indication of life expectation.

NOTES

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# High-voltage test techniques
# Part 3: Definitions and requirements for on-site testing

## 1 Scope

This part of IEC 60060 is applicable to the following on-site test voltages and in service stresses, which are in relation to IEC 60060-1:

– direct voltage;

– alternating voltage;

– lightning impulse voltage of aperiodic or oscillating shape;

– switching impulse voltage of aperiodic or oscillating shape.

For special tests the following voltages are used:

– very low frequency voltage;

– damped alternating voltage.

This standard is applicable to equipment with a highest voltage $U_m$ greater than 1 kV. The selection of on-site test voltages, test procedures and test voltage levels for apparatus, equipment or installations is under the responsibility of the relevant technical committee. For special applications, on-site test voltages different from those described in this standard may be specified by the relevant technical committee.

NOTE 1 The different voltage waveforms listed above do not necessarily provide equal stress on the test object.

NOTE 2 The selection of the test voltage levels should take the larger tolerances and measuring uncertainties into account.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

References to international standards that are struck through in this clause are replaced by references to Australian or Australian/New Zealand Standards that are listed immediately thereafter and identified by shading. Any Australian or Australian/New Zealand Standard that is identical to the International Standard it replaces is identified as such.

~~IEC 60060-1:1989, *High-voltage test techniques – Part 1: General definitions and test requirements*~~

AS 1931.1, *High-voltage test techniques,* Part 1: *General definitions and test requirements* (identical to IEC 60060-1)

~~IEC 60060-2:1994, *High-voltage test techniques – Part 2: Measuring systems*~~

AS 1931.2, *High-voltage test techniques,* Part 2: *Measuring systems* (identical to IEC 60060-2)

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