

Australian Standard[®]

**High-voltage switchgear and
controlgear**

**Part 202: High-voltage/low-voltage
prefabricated substation**



This Australian Standard® was prepared by Committee EL-007, Power Switchgear. It was approved on behalf of the Council of Standards Australia on 8 November 2007. This Standard was published on 31 January 2008.

The following are represented on Committee EL-007:

- Australian British Chamber of Commerce
 - Australian Electrical and Electronic Manufacturers Association
 - Australian Railway Association
 - Energy Networks Association
 - Engineers Australia
 - Testing interests
-

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**Part 202: High-voltage/low-voltage
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Originated as AS 61330—2005.
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PREFACE

This Standard was prepared by the Standards Australia Committee EL-007, Power Switchgear, to supersede AS 61330—2005, *High-voltage/low-voltage prefabricated substation*.

The objective of this Standard is to ensure that prefabricated substations meet the needs of the users in the areas of high-voltage and low-voltage.

This Standard is identical with, and has been reproduced from IEC 62271-202, Ed. 1.0 (2006), *High-voltage switchgear and controlgear – Part 202: High-voltage/low-voltage prefabricated substation*.

Common numbering of Standards falling under the responsibility of EL-007

In accordance with the decision taken by Committee EL-007, a common numbering system will be established in order to align the numbering of Australian Standards falling under the responsibility of EL-007 with IEC Standards. All high-voltage switchgear and controlgear Standards will, at their next revision (or as equivalent Standards become available in IEC), become parts of the AS 62271 (High-voltage switchgear and controlgear) series. The table below gives the relationship between future numbering and existing Standard numbers. Standards current at the time of publication of this Standard are marked with an asterisk (*).

AS 62271 Series	High-voltage switchgear and controlgear	Previous AS Number
1	Common specifications	*AS 2650
100*	High-voltage alternating-current circuit-breakers	AS 2006
102*	Alternating current disconnectors and earthing switches	AS 1306
103	Switches for rated voltages above 1 kV and less than 52 kV	*AS/NZS 60265.1
104	Switches for rated voltages of 52 kV and above	*AS 60265.2
105	Alternating current switch-fuse combinations	*AS 2024
106	Alternating current contactors and contactor-based motor-starters	*AS 60470
110*	Inductive load switching	AS 4372
200*	AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	AS 2086
201*	AC insulation-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV	AS 2264
202*	High-voltage/low voltage prefabricated substations	AS 61330
203*	Gas-insulated metal-enclosed switchgear for rated voltages above 52 kV	AS 2263
301*	Dimensional standardization of terminals	AS 2395
303	Use and handling of sulphur hexafluoride (SF ₆) in high-voltage switchgear and controlgear	*AS 2791
304	Additional requirements for enclosed switchgear and controlgear from 1 kV to 72.5 kV to be used in severe climatic conditions	*AS 4243
308*	Guide for asymmetrical short-circuit breaking test duty T100a	-

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- (a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.
- (b) In the source text 'IEC 62271-202' should read 'AS 62271.202'.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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

Prefabricated substations are defined as a type-tested assembly comprising an enclosure containing transformers, low-voltage and high-voltage switchgear, connections and auxiliary equipment to supply low-voltage energy from a high-voltage system or vice versa. These substations are in locations accessible to the public and should ensure protection to persons according to the specified service conditions.

This means that, in addition to the specified characteristics, ratings and relevant test procedures, particular attention has been paid to the specification concerning the protection of persons, both operators and general public. Use of type-tested components and suitable design and construction of the enclosure ensure this protection. The correct design and performance of the prefabricated substation are verified by means of relevant type tests described in this standard, including internal arc tests.

STANDARDS AUSTRALIA

Australian Standard**High-voltage switchgear and controlgear**
Part 202: High-voltage/low-voltage prefabricated substation

1 General**1.1 Scope**

This part of IEC 62271 specifies the service conditions, rated characteristics, general structural requirements and test methods of HV/LV or LV/HV prefabricated substations, which are cable-connected, to be operated from inside (walk-in type) or outside (non-walk-in type) for alternating current of rated voltages above 1 kV and up to and including 52 kV on the HV side, and for one or more transformers for service frequencies up to and including 60 Hz for outdoor installation in locations with public accessibility.

Prefabricated substations can be situated at ground level or partially or completely below ground level.

In general, a prefabricated substation comprises the following main components (functions):

- enclosure;
- power transformers;
- HV and LV switchgear and controlgear;
- HV and LV interconnections;
- auxiliary equipment and circuits.

However, relevant provisions of this standard are applicable to designs where not all these components exist (for example, an installation consisting of power transformer and LV switchgear).

NOTE Non-prefabricated substations should comply with the applicable requirements of IEC 61936-1.

1.2 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 60076 (all parts), *Power transformers*

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

AS 60076-1, *Power transformers—General* (IEC 60076-1, Ed.2.1(2000) MOD)

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