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METAL-ENCLOSED SWITCHGEAR FOR RATED VOLTAGES OF 72.5 kV AND ABOVE

STANDARDS ASSOCIATION OF AUSTRALIA
Incorporated by Royal Charter

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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations were officially represented on the committee entrusted with the preparation of this standard:

Australian British Trade Association
Australian Electrical and Electronic Manufacturers Association
Confederation of Australian Industry
Electricity Supply Association of Australia
Railways of Australia Committee
Testing Authorities
The Institution of Engineers, Australia

This standard, prepared by Committee EL/7, Power Switchgear, was approved on behalf of the Council of the Standards Association of Australia on 30 March 1979, and was published on 1 July 1979.

To keep abreast of progress in industry, Australian standards are regularly reviewed. Suggestions for improvement to published standards, addressed to the head office of the Association, are welcomed.

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AUSTRALIAN STANDARD

METAL-ENCLOSED SWITCHGEAR FOR RATED VOLTAGES OF 72.5 kV AND ABOVE

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PREFACE

This standard was prepared by the Association's Committee on Power Switchgear. During its preparation, consideration was given to IEC 517, High-voltage Metal-enclosed Switchgear for Rated Voltages of 72.5 kV and Above, including Amendment No 1, April 1977, and acknowlegdement is made of the assistance received therefrom.

The standard generally follows IEC 517 in technical content, but where it deviates technically by way of additional or different requirements, this is indicated by a ruled line in the margin against the clause, or part thereof, affected.

The standard follows the sequence of clauses in IEC 517, but the clauses have been re-numbered in accordance with SAA style. Appendix C lists the IEC clause and table numbers alongside those given in this standard for reference purposes.

This standard requires reference to the standards listed below. Where an Australian standard, which is based on an IEC standard is listed, the equivalent IEC number is shown in parenthesis:

AS 1018 Recommendations for Partial Discharge Measurements (IEC 270)

AS 1170 SAA Loading Code, Part 2—Wind Forces

AS 1217 Methods of Measurement of Airborne Sound Emitted by Machines

AS 1265 Bushings for Alternating Voltages Above 1000 V (IEC 137)

AS 1306 High Voltage Isolators (Disconnectors) and Earthing Switches (IEC 99)

AS 1824 Insulation coordination (IEC 71)
Part 1—Basic Principles, Standard Insulation Levels and Test Procedures
Part 2—Application Guide

AS 1931 High Voltage Testing Techniques
Part 1—General Definitions, Test Requirements, Test Procedures and Measuring Devices (IEC 60)

AS 1939 Classification of Degrees of Protection Provided by Enclosures for Electrical Equipment (IEC 529)

AS 2006 High Voltage Alternating Current Circuit-breakers (IEC 56)

AS C1 Standard Voltages and Frequency for AC Transmission and Distribution Systems (IEC 38)

AS C320	Classification of Insulating Materials for Electrical Machinery and Apparatus on the Basis of Thermal Stability in Service
IEC 141	Tests on Oil-filled and Gas-pressure Cables and Their Accessories
IEC 376	Specifications and Acceptance of New Sulphur Hexafluoride
IEC 480	Guide for the Checking of Sulphur Hexafluoride (SF_6) taken from Electrical Equipment.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

METAL-ENCLOSED SWITCHGEAR FOR RATED VOLTAGES OF 72.5 kV AND ABOVE

SECTION 1. SCOPE AND OBJECT

1.1 SCOPE. This standard applies to metal-enclosed switchgear, the insulation of which is obtained at least partly, by an insulating fluid other than air at atmospheric pressure and designed for alternating current of rated voltages of 72.5 kV and above, it covers both indoor and outdoor installations.

The metal-enclosed switchgear specified in this standard consists of individual elements intended to be directly connected together and able to operate only in this manner.

This standard completes and amends, if necessary, the various relevant standards applying to the individual elements constituting metal-enclosed switchgear.

1.2 OBJECT. The purpose of this standard is to establish provisions concerning classification, construction, ratings and tests of the switchgear.

SECTION 2. DEFINITIONS

2.1 APPLICATION OF SECTION. For the purpose of the standard the definitions in this Section apply.

2.2 GENERAL TERMS.

2.2.1 Switchgear — a general term covering switching devices and their combination with associated control, measuring, protective and regulating equipment, also assemblies of such devices and equipment with associated interconnections, accessories, enclosures, and supporting structures, intended in principle for use in connection with generation, transmission, distribution and conversion of electric power.

2.2.2 Metal-enclosed switchgear — switchgear assemblies with an external metal-enclosure intended to be earthed, and complete except for external connections.

2.2.3 Factory-assembled switchgear — switchgear built in the factory as transportable assemblies constructed and tested under the responsibility of the manufacturer.

2.2.4 Transportable assembly—an assembly or sub-assembly of metal-enclosed switchgear suitable for shipping without being dismantled.

2.3 ENCLOSURE AND PARTS.

2.3.1 Enclosure — the surrounding part of the metal-enclosed switchgear used to retain the insulating fluid under the prescribed conditions necessary to maintain safely the insulation level. It prevents personnel from inadvertently approaching live and moving parts contained therein and protects the internal components of the equipment against external effects.

2.3.2 Compartment — a part of metal-enclosed switchgear, totally enclosed except for means necessary for interconnection and control.

NOTE: A compartment may be designated by the main component contained therein, e.g. circuit-breaker compartment, busbar compartment.

2.3.3 Partition — a part of the enclosure of a compartment separating it from another compartment.

2.3.4 Bushing — a structure carrying a conductor through a partition or an enclosure and insulating it therefrom, including the means of attachment to the partition or enclosure.

2.3.5 Fixed connection — two or more conductors fixed together to ensure circuit continuity, e.g. by bolting, screwing or spring-loading, and not normally intended to be opened or closed.