AS 2756—1997
Reconfirmed 2016

Australian Standard®

Low-voltage switchgear and controlgear—Mounting rails for mechanical support of electrical equipment

This Australian Standard was prepared by Committee EL/6, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 12 September 1996 and published on 5 February 1997.

The following interests are represented on Committee EL/6:

Australasian Railway Association

Australian British Chamber of Commerce

Australian Electrical and Electronic Manufacturers Association

Bureau of Steel Manufacturers of Australia

Electricity Supply Association of Australia

Independent Electrical Switchboard Manufacturers Association

Institution of Engineers Australia

Ministry of Commerce, New Zealand

National Electrical Contractors Association of Australia

Sydney Water Corporation

Testing interests

WorkCover Authority of N.S.W.

This Standard was issued in draft form for comment as DR 96054.

STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 2756—1997
Low-voltage switchgear and controlgear—Mounting rails for mechanical support of electrical equipment

RECONFIRMATION NOTICE

Technical Committee EL-006 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 15 August 2016.

The following are represented on Technical Committee EL-006:

Association of Accredited Certification Bodies
Ausgrid
Australian Industry Group
Bureau of Steel Manufacturers of Australia
Business New Zealand
Electrical Contractors Association of New Zealand
Engineers Australia
National Electrical and Communications Association
National Electrical Switchboard Manufacturers Association
Rail Industry Safety and Standards Board

NOTES

Australian Standard®

Low-voltage switchgear and controlgear—Mounting rails for mechanical support of electrical equipment

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7337 0788 2

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/6, Industrial Switchgear and Controlgear, to supersede AS 2756—1985, *Low voltage switchgear and controlgear—Mounting rails for mechanical support of electrical equipment*.

This Standard is the result of a consensus among representatives on the Joint Committee to produce it as an Australian Standard.

It applies to three basic types of rail section currently available in steel or aluminium alloys for the mounting and mechanical support of items of low-voltage switchgear and controlgear equipment.

It is based on IEC 715:1981, *Dimensions of low-voltage switchgear and controlgear — Standardized mounting on rails for mechanical support of electrical devices in switchgear and controlgear installations* and Amendment 1 (1995).

The differences between this Standard and AS 2756—1985 are indicated by a rule in the margin and affect Clause 3.1, Figure 1 and Appendix A and are based on IEC 715 Amendment 1.

Attention is drawn to the fact that the grade of cold-rolled steel sheet, specified in Appendix A as being suitable for the manufacture of the steel mounting rail sections, is not at present covered by AS 1595 and that AS 2338 does not provide for the 1.5 mm material thickness specified for some rail sections.

In accordance with the international system of units (SI), the unit used for tensile stress in Appendix A and torsional stress and shear modulus in Appendix B is the megapascal (MPa) whereas newtons per square millimetre (N/mm^2) is used in IEC 715. Also in Appendix B of this Standard, the unit for torque is the newton metre (N.m) whereas the newton millimetre (N.mm) is used in IEC 715. Accordingly, the numerical values for such terms differ from those in IEC 715.

The application guide in Appendix B differs considerably from IEC 715 and has been redrafted. The calculations in Appendix B of IEC 715 for torsional deflection of these non-annular rail sections are not included.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

CONTENTS

Originated as AS 2756—1985.
Second edition 1997.

FOREWORD

Manufacturers and users of switches, circuit-breakers, relays, contactors, terminal blocks and other discrete items of low-voltage electrical equipment have for some time studied the problem of mounting such equipment within an assembly in such a manner as to facilitate easy fixing, removal or rearrangement.

A solution which has already found a degree of 'natural standardization' in a number of highly industrialized countries is the production of steel or aluminium alloy mounting rail sections onto which any such equipment, grouped within a particular physical size, may be attached.

The following two methods are used for fixing the equipment items onto mounting rails:

(a) By clipping directly onto the rail (a method particularly suitable for Top hat and G section rails).

(b) By means of accessory items such as sliding nuts, hooked or T head bolts (a method particularly suitable for C section rails).

In the case of G section rails, the first of these methods has been mainly used for mounting terminal blocks which snap in and out of position and are clamped in rows by adjustable end stops.

One or more rails can be used as necessary for fixing equipment.

The rail may take the form of a standard section as an integral part of the enclosure.

Rails are also available in composite sections which comprise, for example, Top hat and C section sizes thus accepting devices with various arrangements for mounting.

Since rail mounting may affect the performance of equipment, it may be advisable for equipment manufacturers to give guidance in their literature on the suitability for this form of mounting.

STANDARDS AUSTRALIA

Australian Standard

Low-voltage switchgear and controlgear—Mounting rails for mechanical support of electrical equipment

1 SCOPE AND GENERAL

1.1 Scope This Standard specifies dimensional and functional requirements for the compatible mounting of varied electrical devices on various types of rails in switchgear and controlgear assemblies.

Appendices deal with specific steel mounting rails satisfying the requirements of this Standard, and give additional dimensional data and loading requirements applicable to such rails.

1.2 Objective The objective of this Standard is to specify those dimensions which are critical for the correct design of rails and equipment. The following sections are covered by this Standard:

(a) Top hat section.

(b) C section.

(c) G section.

NOTES:

1 The detailed design and material of specific steel rails are given in the appendices.

2 Other types of rails and relevant mountings which are not covered by this Standard can be used.

1.3 Referenced documents The following documents are referred to in this Standard:

AS

1100 Technical drawing

1100.101 Part 101: General principle

1595 Cold-rolled unalloyed low carbon steel sheet and strip

2338 Preferred dimensions of wrought metal products

2752 Preferred numbers and their use

2 FUNCTIONAL REQUIREMENTS The basic functional requirement of mounting rails is that they shall adequately support the electrical equipment.

The rail itself, in combination with the distance between the points of support and the nature of these supports, shall be of sufficient mechanical strength and stiffness to endure the static and dynamic load of the equipment.

NOTE: The performance of the equipment mounted on the rail should be verified to ensure correct operation.

Because of the great variety of equipment, and of combinations of equipment, and the spatial distribution of such equipment, it is not possible to state specific requirements that ensure proper performance under all conditions. However, the detailed dimensions and the strength requirements given in Appendix A and the equipment load capacities given in Appendix B have been shown by experience to be suitable for use with a variety of equipment such as contactors, fuses, switches, terminal blocks and circuit-breakers.

The responsibility for the correct construction and choice of materials lies with the manufacturer of the complete assembly.