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**Standards  
Association of  
Australia**



# Australian Standard<sup>®</sup> 2978—1987

## INSULATING MATS FOR ELECTRICAL PURPOSES

[Title allocated by Defence Cataloguing Authority:  
INSULATION MAT, ELECTRICAL (Voltage up to 650 V rms)  
..... NSC 5970]



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**AUSTRALIAN STANDARD**

# **INSULATING MATS FOR ELECTRICAL PURPOSES**

**AS 2978—1987**

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## PREFACE

This Standard was prepared by the Association's Committee on Electrical Accessories. Preparation of this Standard was requested by Telecom Australia so that requirements could be specified for a portable lightweight insulating mat. While it was recognized that there was a need for lightweight insulating mats for use on flat indoor surfaces, it was decided that a thicker mat should also be included for general purpose applications. Both of these classes of mat are intended to protect personnel where circumstances involve the possibility of contact with conductors or electrical equipment whose voltage does not exceed 650 V a.c. r.m.s. or d.c., between conductors or between conductors and earth.

This Standard does not apply to insulating covers, nor to mats rated at greater than 650 V. It should be noted that a Standard for insulating covers is in course of preparation.

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## CONTENTS

	<i>Page</i>
1 SCOPE ....	4
2 REFERENCED DOCUMENTS ....	4
3 COMPLIANCE ....	4
4 DEFINITION ....	4
5 CLASSIFICATION ....	4
6 COMPOSITION ....	4
7 CONSTRUCTION ....	4
8 DIMENSIONS ....	4
9 WORKMANSHIP AND FINISH ....	4
10 MARKING ....	4
11 TESTS ....	5
APPENDIX A. METHOD OF TEST FOR ELECTRICAL INSULATION ....	6

## STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard**  
**INSULATING MATS FOR ELECTRICAL PURPOSES**

**1 SCOPE.** This Standard specifies requirements for two classes of insulating mats to protect personnel where circumstances involve the possibility of contact with conductors or electrical equipment whose nominal voltage does not exceed 650 V whether a.c. r.m.s. or d.c., between conductors or between conductors and earth.

This Standard does not cover the safe and proper field use of insulating mats, and does not apply to:

- (a) Insulating mats rated at greater than 650 V.
- (b) Insulating covers.

**2 REFERENCED DOCUMENTS.** The following Standards are referred to in this Standard:

- AS 1683 Methods of Test for Rubber  
 Part 12: Tear Resistance of Vulcanized Rubber.  
 Part 13B: Compression Set of Vulcanized Rubber under Constant Deflection.
- AS 1931 High Voltage Testing Techniques  
 Part 1: General Definitions, Test Requirements, Test Procedures and Measuring Devices.
- BS 903 Methods of Testing Vulcanized Rubber  
 Part A2: Determination of Tensile Stress-strain Properties.  
 Part A19: Heat Resistance and Accelerated Air Ageing Tests.

**3 COMPLIANCE.** An insulating mat shall be deemed to comply with this Standard only if it complies with all the requirements of this Standard and passes all tests specified in this Standard.

**4 DEFINITION.** For the purpose of this Standard, the following definition applies.

*Insulating mat*—a mat of insulating and non-hygroscopic material intended to effectively provide an electrically safe barrier on which the user can stand, kneel or be otherwise supported and hereinafter referred to as a 'mat'.

**5 CLASSIFICATION.** Mats are classified according to the intended applications as follows:

- (a) Class A—general purpose use.
- (b) Class B—restricted to use indoors on surfaces which are free from protuberances or projections.

**6 COMPOSITION.** Mats shall be made from any good quality insulating materials which comply with the test requirements of this Standard. A mat need not be made of homogeneous material and may contain suitable insertions which will enhance the electrical or mechanical properties of the finished product.

NOTE: Although Test Nos 2, 3 and 4 of Clause 11.1 are intended for elastomeric materials, other materials are required to possess equivalent properties.

**7 CONSTRUCTION.** Mats shall be solid and not perforated. Surfaces may have a plain, ribbed, fluted or other pattern.

**8 DIMENSIONS.**

**8.1 Thickness.** Mats shall have the following thicknesses:

- (a) Class A ..... not less than 6 mm.
- (b) Class B ..... not less than 3 mm.

Patterned mats shall be measured at the thinnest section.

**8.2 Minimum size.** The minimum size of a mat shall be 900 mm × 900 mm. However, it may be necessary for larger mats to be specified where personnel are required to work in the kneeling or lying position.

**9 WORKMANSHIP AND FINISH.** Mats shall be free from patches, blisters, pin-holes, cracks, protuberances, embedded foreign matter and other physical defects. Compliance is checked by visual inspection.

Minor surface irregularities that can cause no hazard or significant degradation in quality or life may be disregarded.

**10 MARKING.** The following information shall be legibly and durably marked and shall be provided with each mat:

NOTE: If this information is not marked on the mat itself, it shall be placed on electrically non-conductive material securely attached to the mat.

- (a) The name or trademark or mark of the manufacturer.
- (b) The year and month of manufacture.
- (c) The classification, i.e. Class A or B insulating mat.
- (d) Provision for the indication of a re-test date.

NOTE: Manufacturers who place the number of this Australian Standard on products, or on packaging or literature related thereto, should ensure that the products are manufactured to comply with the Standard.

Attention is particularly drawn to the scheme for independent assurance provided by the StandardsMark which is a registered certification trademark owned by the Standards Association of Australia and which is available for use with suitable Australian Standards.

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