

Australian/New Zealand Standard™

**In-service safety inspection and testing
of electrical equipment**



AS/NZS 3760:2003

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-036, In-service Testing of Electrical Equipment. It was approved on behalf of the Council of Standards Australia on 15 December 2003 and on behalf of the Council of Standards New Zealand on 18 December 2003.
This Standard was published on 19 December 2003.

The following are represented on Committee EL-036:

Appliance and Electronic Industry Association of New Zealand
Australasian Lighting Industry Association
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers ' Association
Australian National University
Black Diamond Technologies Ltd
Building Service Contractors of New Zealand
Canterbury Manufacturers ' Association
Communications,Electrical Plumbing Union Australia
Department of Fair Trading NSW
Department of Industrial Relations Queensland
Electrical Contractors Association of New Zealand
Electrical Workers Registration Board New Zealand
Hire and Rental Association Australia
Hire Industry Association of New Zealand
Housing Industry Association Australia
Ministry of Economic Development New Zealand
National Electrical and Communications Association Australia
New Zealand Electrical Appliance Service Association
Operational Safety and Health New Zealand
Regulatory Authorities (Electrical) Australia
Telstra Corporation Australia
Workcover New South Wales

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 03931.

Australian/New Zealand Standard™

In-service safety inspection and testing of electrical equipment

Originated as AS 3760—1990.
Jointly revised and designated as AS/NZS 3760:1996.
Third edition 2000.
Fourth edition 2001.
Fifth edition 2003.
Reissued incorporating Amendment No. 1 (August 2005).

COPYRIGHT

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 5758 8

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-036 In-service Testing of Electrical Equipment, to supersede AS/NZS 3760:2001.

The in-service safety inspection and testing requirements in this Standard do not cover testing for the design and approval of equipment (which is covered separately in other Standards).

Changes to AS/NZS 3760:2001 incorporated in this Standard include the following:

- (a) The environment for frequency of inspection and test has been revised to be more usage based, rather than specific site based;
- (b) Customized solutions based on risk assessment are now allowed;
- (c) The “Responsible Person” has been defined and the qualifications of a “Competent Person” clarified by notes;
- (d) Guidelines to the knowledge of electrical principles with which a Competent Person is likely to be familiar have been added as an Informative Appendix, applicable in New Zealand only;
- (e) Additional definitions have been formulated;
- (e) The inspection and test responsibilities of the hirer and hiree are now stated and the inspection, test and tag intervals for the hirer clarified;
- (f) Numerous minor text changes.

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 and subject to the same level of compliance as if it were in the body of the Standard, whereas an ‘informative’ appendix is provided for information and guidance, and may indicate good practice. Non-compliance with an informative appendix will not be seen as non-compliance with the Standard.

CONTENTS

	<i>Page</i>
FOREWORD	4
 SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 GENERAL	6
1.3 REFERENCED DOCUMENTS	7
1.4 DEFINITIONS	7
 SECTION 2 INSPECTIONS AND TESTS	
2 GENERAL	12
2.1 FREQUENCY OF INSPECTION AND TESTS	12
2.2 PERSONNEL	12
2.3 INSPECTION AND TESTING	12
2.4 ACTION RESULTING FROM INSPECTION AND TESTING.....	16
2.5 DOCUMENTATION REQUIREMENTS	17
 APPENDICES	
A TEST OF EARTHING CONTINUITY	20
B INSULATION TESTING	22
C INSULATION RESISTANCE TESTING OF PORTABLE SAFETY ISOLATING TRANSFORMERS	25
D TEST FOR OPERATING TIME OF RCDs (RESIDUAL CURRENT DEVICES)	28
E INSULATION RESISTANCE TESTING OF A POWER PACK.....	29
F POLARITY FOR EXTENSION CORDS AND IEC PPLIANCE CORDS.....	30
G BACKGROUND.....	32
H REGULATORY APPLICATION OF THE STANDARD.....	34
J GUIDELINES ON THE ELECTRICAL KNOWLEDGE OF A COMPETENT PERSON (Informative, applicable to New Zealand only)	38

FOREWORD

In-service testing is necessary for the safety of persons using the equipment and for the proper discharge of the obligations of employers and employees, as listed in legislation covering occupational health and safety matters. This Standard specifies in-service safety inspection and testing protocols and criteria that satisfy these obligations, and provides a cost effective approach to safety without jeopardizing personnel safety or involving excessive equipment downtime.

The philosophy of the document is to provide an inspection and testing regime capable of implementation with only simple instrumentation, and performed by a person not necessarily having formal qualifications or registration, but who has the necessary practical and theoretical skills, acquired through training, qualification, experience or a combination of these, to correctly undertake the tasks prescribed by this Standard.

The methodology of the inspection and testing process is defined. The frequency of repetition of that process is determined not by the equipment type, but by examination of the environment in which the equipment is used or working in. For indicative purposes a number of environments are provided with associated inspection/testing frequencies prescribed. These are based on the perception of the level of hazard and the degree of abuse to which the equipment is typically exposed. However, there will usually be multiple sub-environments within any location and the inspecting/testing frequency will be arrived at by an assessment of the actual environment in which the equipment is placed or used.

Introduced in this edition is the possibility of allocating the frequency of inspection/testing by undertaking, implementing and documenting a risk assessment.

The test and tag intervals prescribed for hire equipment are aligned with the intervals for environments such as construction and demolition sites.

This version incorporates Amendment No 1, August 2005, and those areas where changes have been made, are indicated by a vertical line in the margin.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
In-service safety inspection and testing
of electrical equipment

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies procedures for the safety inspection and testing of low voltage single phase and poly-phase (e.g. nominal 240V and 415V) electrical equipment, connected to the electrical supply by a flexible cord and/or connecting device, which is new equipment placed into service for the first time, is already in-service, has been serviced or repaired, is returning to service from a second-hand sale, or is available for hire.

A1

Typical examples of equipment are:

- (a) Portable, hand-held and stationary appliances, designed for connection to the low voltage supply by a flexible cord;
- (b) Cord extension sets and outlet devices (also known as electrical portable outlet devices, EPODs or power boards);
- (c) Flexible cords connected to fixed equipment in hostile environments;
- (d) Portable isolation transformers (includes power adaptor/plug-pack, both of the transformer and switch-mode type);
- (e) RCDs - Portable type (PRCD), socket outlet type and fixed switchboard type;
- (f) Commercial and industrial battery chargers;
- (g) Portable and transportable 415V heavy duty tools such as high pressure washers and concrete grinders.

1.1.1 This Standard does not apply to electrical equipment (such as suspended light fittings), at a height of 2.5m or greater above the ground, floor or platform, where there is not a reasonable chance of a person touching the equipment and, at the same time, coming into contact with earth or any conducting medium which may be in electrical contact with earth or through which a circuit may be completed to earth.

1.1.2 This Standard does not apply to equipment which would need to be dismantled to perform the inspection and tests specified in this Standard.

NOTE If, for some reason outside the scope of this Standard, equipment must be dismantled to verify safety, this action must be performed by a technically qualified person.

1.1.3 Functional checks are not considered part of a safety evaluation and therefore not included in this Standard.

1.1.4 This Standard only applies to equipment in-service at a place of work or public place, or offered for hire.

NOTE For example, this Standard does not apply to demonstration stock in retail or wholesale outlets.

1.1.5 This Standard does not apply to fixed or stationary equipment connected to wiring that forms part of the electrical installation and falls within the scope of AS/NZS 3000.

1.1.6 This Standard does not apply to equipment whose nature is that of a medical device as defined in AS/NZS 3551.

A1



SAI GLOBAL

This is a free 7 page sample. Access the full version online.

The remainder of this document
is available for purchase online at

www.saiglobal.com/shop

SAI Global also carries a wide range of publications from a wide variety of Standards Publishers:



SAI GLOBAL



Click on the logos to search the database online.