

Australian Standard™

Environmental testing

**Part 2.41: Tests—Test Z/BM: Combined
dry heat/low air pressure tests**

This Australian Standard was prepared by Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment. It was approved on behalf of the Council of Standards Australia on 21 October 2003 and published on 1 December 2003.

The following are represented on Committee EL-026:

Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturer's Association
Electrical Compliance Testing Association
Electrical Regulatory Authorities Council
Electricity Supply Association of Australia
Testing Interests (Australia)

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 Standards may also be withdrawn.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 Standards can be found by visiting the Standards Australia web site at www.standards.com.au and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Global Standard*, has a full listing of revisions and amendments published each month.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.com.au, or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

Australian Standard™

Environmental testing

**Part 2.41: Tests—Test Z/BM: Combined
dry heat/low air pressure tests**

First published as AS 60068.2.41—2003.

COPYRIGHT

© Standards Australia International

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.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5618 2

PREFACE

This Standard was prepared by the Standards Australia Committee EL-026, Protective Enclosures and Environmental Testing for Electrical/Electronic Equipment.

The objective of this Standard is to provide the electrotechnology industry with a complete set of environmental test procedures published as a series under AS 60068 *Environmental testing*. This Standard is Part 2.41 of that series.

This Standard is identical with, and has been reproduced from, IEC 60068-2-41:1976, *Environmental testing – Part 2-41: Tests—Test Z/BM: Combined dry heat/low air pressure tests* incorporating Amendment 1:1983.

As this Standard is reproduced from an International Standard, the following applies:

- (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 ‘this international standard’ should read ‘this Australian Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.
- (d) any French text on figures should be ignored.

In this Standard, the following print types are used:

- requirements proper: in arial type;
- *test specifications: in italic type;*
- explanatory matter: in smaller arial type.

Any international Standard referenced should be replaced by an equivalent Australian Standard when one is available. The availability of equivalent Australian Standards can be determined either from the Standards Australia catalogue or from the Standards Australia website (www.standards.com.au).

CONTENTS

	<i>Page</i>
1 Introduction	1
2 Object	2
3 General description	2
4 Description of test apparatus	2
5 Severities	2
6 Preconditioning	3
7 Initial measurements	3
8 Conditioning	3
9 Intermediate measurements	5
10 Recovery	5
11 Final measurements	5
12 Information to be given in the relevant specification	5
Figures	6

STANDARDS AUSTRALIA

Australian Standard**Environmental testing**
**Part 2.41: Tests—Test Z/BM: Combined dry heat/
low air pressure tests**

1 Introduction**1.1 General**

This publication deals with combined dry heat (with gradual or rapid change of temperature) and low air pressure tests for both heat-dissipating and non-heat-dissipating specimens (see sub-clauses 8.2.2 and 8.2.8).

The object of the test is to determine the ability of components or equipments or other articles to be stored and used under a simultaneous combination of high temperature and low air pressure.

This combined test should normally be used only if the effects of combined environments will not be revealed by subjecting the specimen to single environments. The procedures given in this publication are limited to the case of specimens which achieve temperature stability during the test procedure.

In the case of testing heat-dissipating specimens, this procedure applies only to the testing of one specimen at a time.

1.2 Low air pressure

The test procedure applies to air pressure down to about 10 mbar. At air pressures below 10 mbar, phenomena not taken into account in the design of this test procedure become important.

The relationship between altitude, pressure and temperature has not been indicated in this publication. Such data should be obtained from special publications.

1.3 Temperature

1.3.1 The guidance given in the introduction to IEC 60068-2-2 for the application of tests for non-heat-dissipating specimens versus tests for heat-dissipating specimens shall apply.

NOTE – Non-heat-dissipating specimens are defined as in clause 4 of IEC 60068-1. The measurements of hottest spot temperature must not be made at reduced pressure.

1.3.2 Heat-dissipating specimens should preferably be tested with no forced air circulation as for Tests B: Dry heat.

1.4 Related documents

- IEC 60068: Basic Environmental Testing Procedures.
- IEC 60068-1: Part 1: General.
- IEC 60068-2-2: Part 2: Tests – Tests B: Dry heat.
- IEC 60068-2-13: Part 2: Tests – Test M: Low air pressure.
- IEC 60068-3-1: Part 3: Background information – Section One: Cold and dry heat tests.
- IEC 60068-3-2: Part 3: Background information – Section Two: Combined temperature/low air pressure tests