



Fire detection and alarm systems

Part 16: Emergency warning control and indicating equipment



This Australian Standard® was prepared by Committee FP-002, Fire Detection Warning, Control and Intercom Systems. It was approved on behalf of the Council of Standards Australia on 13 July 2015.

This Standard was published on 16 October 2015.

The following are represented on Committee FP-002:

- Association of Hydraulic Services Consultants Australia
 - Australasian Fire and Emergency Service Authorities Council
 - Australian Building Codes Board
 - Australian Chamber of Commerce and Industry
 - Australian Industry Group
 - Australian Institute of Building Surveyors
 - CSIRO
 - Deafness Forum of Australia
 - Department of Human Services, Vic.
 - Engineers Australia
 - Fire Protection Association Australia
 - National Electrical and Communications Association
 - National Fire Industry Association
 - Property Council of Australia
 - Society of Fire Safety
-

This Standard was issued in draft form for comment as DR AS 4428.16:2014.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that 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Standards may also be withdrawn.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 that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

Fire detection and alarm systems

Part 16: Emergency warning control and indicating equipment

First published as AS 4428.16:2015.

COPYRIGHT

© Standards Australia Limited

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, unless otherwise permitted under the Copyright Act 1968.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 1 76035 274 5

PREFACE

This Standard was prepared by Standards Australia Committee FP-002, Fire Detection, Warning, Control and Intercom Systems.

This Standard is based on ISO 7240-16:2007, *Fire detection and alarm systems, Part 16: Sound system control and indicating equipment*.

It is intended that this Standard be referenced in AS 1670.4, *Fire detection, warning, control and intercom systems—System design, installation and commissioning, Part 4: Sound systems and intercom systems for emergency purposes* and AS 1670.1, *Fire detection, warning, control and intercom systems—System design, installation and commissioning, Part 1: Fire*.

Statements expressed in mandatory terms in notes to figures and tables are deemed to be requirements of this Standard.

Notes used in this Standard, not associated with figures or tables, are of an advisory nature only and are used to give explanation or guidance to the user on recommended considerations or technical procedures, or to provide an informative cross-reference to other documents or publications.

The term ‘normative’ and ‘informative’ are 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’ annex is only for information and guidance.

FOREWORD

Emergency warning control and indicating equipment (EWCIE) forms part of an emergency warning system (EWS). An EWS operates automatically or manually in a building or structure to alert occupants to a hazard, which may require their evacuation in a safe and orderly manner. Therefore, equipment to warn occupants is required to function after the hazard has been detected. Fire in a building is a common hazard, which is often detected by an automatic fire detection and alarm system. An EWS may operate as part of a fire detection and alarm system or may function in conjunction with other emergency detection systems, such as those for storms, earthquakes and bomb threats. The EWCIE may be a separate unit or may be physically combined with the fire detection control and indicating equipment (see AS 1670.1), or may also be combined with emergency intercom control and indicating equipment (EICIE) complying with AS 4428.4.

This Standard (AS 4428.16) is based on, ISO 7240-16, *Fire detection and alarm systems, Part 16: Sound system control and indicating equipment*, and is drafted on the basis of mandatory functions that are to be provided on all EWCIE, and optional functions (with requirements) which may be provided. Each optional function is included as a separate entity, with its own set of associated requirements, for each Grade of EWCIE specified in Appendix A to comply with this Standard. Other functions associated with an EWS may also be provided, even if they are not specified in this Standard.

The tests specified in this Standard subject the equipment to conditions likely to be met in practice, such as corrosion, vibration, direct impact, indirect shock and electromagnetic interference. Some tests are intended to assess the performance of the EWCIE under such conditions. The performance of the EWCIE is assessed from the results obtained in specific tests. This Standard is not intended to place any other restrictions on the design and construction of such equipment.

CONTENTS

	<i>Page</i>
FOREWORD.....	3
1 SCOPE.....	5
2 NORMATIVE REFERENCES	5
3 DEFINITIONS AND ABBREVIATIONS	6
4 GENERAL REQUIREMENTS.....	8
5 REQUIREMENTS FOR INDICATIONS	8
6 QUIESCENT CONDITION.....	9
7 EMERGENCY WARNING CONDITION	9
8 FAULT WARNING CONDITION	13
9 DISABLED CONDITION—OPTIONAL FUNCTION	16
10 TEST CONDITION—OPTIONAL FUNCTION	17
11 AUTOMATIC/MANUAL MODE CONTROL—OPTIONAL FUNCTION	18
12 MANUAL CONTROLS FOR EMERGENCY ZONES	18
13 INTERFACE TO EXTERNAL CONTROL DEVICE(S)— OPTIONAL FUNCTION.....	20
14 EMERGENCY MICROPHONE—OPTIONAL FUNCTION	21
15 DESIGN REQUIREMENTS.....	21
16 ADDITIONAL DESIGN REQUIREMENTS FOR SOFTWARE-CONTROLLED EWCIE	31
17 MARKING	34
18 TESTS	34
19 TEST REPORT.....	55
APPENDICES	
A GRADES OF EWCIE	56
B COMMON INDICATORS, CONTROLS AND OUTPUTS WHEN THE EWCIE AND THE FDCIE ARE COMBINED	58
C INTERFACE BETWEEN THE EWCIE AND THE EMERGENCY DETECTION SYSTEM	60
D EXPLANATION OF ACCESS LEVELS	61
E DESIGN FOR SOFTWARE-CONTROLLED EWCIE.....	63
F USE OF OPTIONAL FUNCTIONS	64
BIBLIOGRAPHY.....	65

STANDARDS AUSTRALIA

Australian Standard

Fire detection and alarm systems

Part 16: Emergency warning control and indicating equipment

1 SCOPE

This Standard specifies requirements, test methods and performance criteria for emergency warning control and indicating equipment (EWCIE) for use in buildings and structures as part of an emergency warning system (EWS). It covers Grades of EWCIE to suit different risks and regulatory requirements. The specific requirements for each Grade are set out in the Appendix A.

NOTES:

- 1 The EWCIE is primarily intended to broadcast information to provide warning to the occupants within one, or more, area(s) in an emergency, to effect a rapid and orderly mobilization of occupants in an indoor or outdoor area. This includes systems using loudspeakers to broadcast voice announcements for emergency purposes, alert signals complying with ISO 7731, and evacuate signals complying with ISO 8201, and may include visual and tactile warning devices.
- 2 The overall requirements of an EWS, specially concerning audibility and intelligibility, are given in AS 1670.4.

The use of the equipment for normal sound reinforcement and distribution systems purposes under non-emergency circumstances is permitted.

This Standard does not apply to systems using only sounders or bells for the audible emergency warning.

2 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard.

NOTE: Documents referenced for informative purposes are listed in the Bibliography.

AS

4428	Fire detection, warning, control and intercom systems—Control and indication equipment
4428.3	Part 3: Fire brigade panel
4428.4	Part 4: Intercommunication systems for emergency purposes
7240	Fire detection and alarm systems
7240.1	Part 1: General and definitions
7240.2	Part 2: Control and indicating equipment (ISO 7240-2:2003, MOD)
7240.4	Part 4: Power supply equipment (ISO 7240-4:2003, MOD)
60068	Environmental testing
60068.1	Part 1: General and guidance
60068.2.1	Part 2.1: Tests—Tests A: Cold
60068.2.2	Part 2.2: Tests—Tests B: Dry heat
60068.2.6	Part 2.6: Tests—Test Fc: Vibration (sinusoidal)
60068.2.47	Part 2.47: Test—Mounting of components, equipment and other articles for vibration, impact and similar dynamic tests
60068.2.75	Part 2.75: Tests—Test Eh: Hammer tests
60068.2.78	Part 2.78: Tests—Test Cab: Damp heat, steady state