

Australian/New Zealand Standard™

**Siting and operation of
radiocommunications facilities**

**Part 1: General guidelines for fixed,
mobile and broadcasting facilities
including fixed location satellite earth
stations independent of the operating
frequency**



AS/NZS 5070.1:2008

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee RC-006, Radiocommunications Equipment—General. It was approved on behalf of the Council of Standards Australia on 26 February 2008 and on behalf of the Council of Standards New Zealand on 7 March 2008. This Standard was published on 19 May 2008.

The following are represented on Committee RC-006:

AirServices Australia
Australian Communications and Media Authority
Australian Electrical and Electronic Manufacturers Association
Australian Information Industry Association
Civil Aviation Safety Authority
Electromagnetic Technical Evaluation Committee (New Zealand)
Free TV Australia
Ministry of Economic Development (New Zealand)
SingTel Optus Pty Limited
Wireless Institute 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 Standards may also be withdrawn.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 joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand website 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 07170.

Australian/New Zealand Standard™

**Siting and operation of
radiocommunications facilities**

**Part 1: General guidelines for fixed,
mobile and broadcasting facilities
including fixed location satellite earth
stations independent of the operating
frequency**

Originally as AS 3516.1—1988 and part of AS 3516.3—1991.
Jointly revised and redesignated as AS/NZS 5070.1:2008.

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 8702 9

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee RC-006, Radiocommunications Equipment—General, to supersede AS 3516.1—1988, *Siting of radiocommunications facilities, Part 1: LF, MF and HF transmitting and HF receiving facilities* and also to incorporate information of a general nature from other parts of the AS 3516 series.

The AS 3516 series will remain available superseded.

The objective of this Standard is to recommend good practice for, and to set out desirable outcomes in the planning, locating, constructing, commissioning, operating and decommissioning of radiocommunications sites. It addresses particularly the sharing of radiocommunications sites and the management of sites to achieve compliance with electromagnetic radiation human exposure limits set by other standards.

This Standard is the first part of a revised set of Standards on the subject of siting and operation of radiocommunications facilities. It deals with items of a general nature common to the siting, installation and operation of radiocommunications facilities independent of application and operating frequency. Committee RC-006 decided to reorganize the subject matter to extract the material common to all parts of the AS 3516 series into this common part so as to avoid repetition and achieve greater consistency.

In developing this part the concept of a Site Technical Manager that was used in AS 3516.2—1988 was discarded as it has been found in practice that this can produce conflicts with contractual arrangements binding site owners and operators of radiocommunication facilities.

At the time this Standard was written there is only one other member of the set, namely:

AS/NZS 5070.2, *Siting of radiocommunications facilities, Part 2, Guidelines for siting of radiocommunications facilities: VHF, UHF and S.M.T.* Other standards may be added to the set in future if the need arises.

Extracts from the material that was in AS 3516.1—1988, *Siting of radiocommunications facilities, Part 1: LF, MF and HF Transmitting and HF Receiving facilities*, now appear in this Standard at Appendix J.

Extracts from the material that was in AS 3516.3—1988, *Siting of radiocommunications facilities, Part 3: Fixed location satellite earth stations*, now appear in this standard at Appendix K.

Poorly planned, constructed and maintained sites can result in interference problems for users of those sites, particularly as the number of services at such sites increases. Hence, it is in the interest of site users to pay regard to the recommendations of this Standard. The Standard addresses a wide range of factors considered to influence the location of radiocommunications facilities. It also takes into account interaction with other radiocommunications sources, the effect of interference caused to radiocommunications and broadcast reception in the vicinity. It also considers the impact that such facilities might have on the environment and the community.

This Standard is intended to provide information to responsible authorities, site owners, facilities planners, site planners, site personnel, other organizations and members of the public on the effects that existing or planned developments could be expected to have on the operation of such facilities. It is intended to assist relevant authorities and concerned parties when considering the impact that such facilities might have on the community.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

CONTENTS

	<i>Page</i>
SECTION 1 SCOPE AND GENERAL	
1.1 SCOPE	5
1.2 APPLICATION	5
1.3 REFERENCED AND RELATED DOCUMENTS	6
1.4 DEFINITION	7
SECTION 2 MANAGEMENT	
2.1 GENERAL	8
2.2 RESPONSIBILITY	8
SECTION 3 PLANNING AND DESIGN	
3.1 GENERAL	9
3.2 COMMUNITY CONSULTATION	9
3.3 SITE SELECTION CRITERIA	9
3.4 SITE DESIGN EMR ASSESSMENT	11
3.5 ANTENNA MOUNTING DESIGN GUIDELINES—MINIMIZATION OF ACCESSIBLE AREAS CONTAINING EMR HAZARD	11
SECTION 4 CONSTRUCTION AND INSTALLATION	
4.1 GENERAL	12
4.2 PROJECT MANAGEMENT PROCESS	12
4.3 SITE SAFETY	12
4.4 STRUCTURES	13
4.5 PROVISION OF UTILITIES	14
4.6 INSTALLATION OF ELECTRONIC EQUIPMENT AND CABLING	15
4.7 EARTHING	16
SECTION 5 COMMISSIONING	
5.1 GENERAL	18
5.2 COMMISSIONING PROCESS	18
SECTION 6 OPERATION AND MAINTENANCE	
6.1 MANAGEMENT	19
6.2 SERVICE OBJECTIVES	19
6.3 INTERFERENCE	21
6.4 REGULATORY COMPLIANCE	22
6.5 COMMUNICATIONS WITH THE PUBLIC	23
SECTION 7 DECOMMISSIONING	
7.1 APPLICATION	24
7.2 DECOMMISSIONING PLAN	24
7.3 DECOMMISSIONING REQUIREMENTS	24
7.4 REMOVAL OF UNUSED ITEMS	24

APPENDICES

A	REGULATORY AUTHORITIES.....	25
B	PLANNING AND ENVIRONMENTAL AUTHORITIES	26
C	ORGANIZATIONS INVOLVED IN THE AUSTRALIAN RADIOCOMMUNICATIONS/BROADCASTING INDUSTRY	27
D	ORGANIZATIONS INVOLVED IN THE NEW ZEALAND RADIOCOMMUNICATIONS/BROADCASTING INDUSTRY	28
E	SITE SELECTION IN PROXIMITY TO AERODROMES.....	29
F	CONSIDERATION OF RADIO ASTRONOMY SITES	30
G	INTERFERENCE.....	34
H	MANAGEMENT OF EMR SITE SAFETY	41
I	COMMUNITY CONSULTATION	44
J	LF, MF AND HF TRANSMITTING AND RECEIVING FACILITIES	47
K	FIXED LOCATION SATELLITE EARTH STATIONS	52

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Siting and operation of radiocommunications facilities

Part 1: General guidelines for fixed, mobile and broadcasting facilities including fixed location satellite earth stations independent of the operating frequency

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard provides guidance of a general nature for the siting, installation and operation of radiocommunications facilities independent of the operating frequency.

It is intended to assist those responsible for the planning, construction, installation, operation, maintenance and decommissioning of radiocommunications and broadcasting services. It provides information and guidance for organizations and the public, from the viewpoint of the impact on the general public and operational staff, on the siting of radiocommunications and broadcasting facilities. It also provides information on the effects that existing or planned developments in the vicinity of these facilities could be expected to have on the operations of such facilities.

NOTE: Regulatory, planning and environmental authorities and bodies are listed in Appendices A and B. Appendices C and D list organizations involved in the radiocommunications/broadcasting industry. These lists may not be exhaustive. Users of this Standard should consult appropriate directories including the World Wide Web (Australian Government entry point address: <http://www.nla.gov.au/oz/gov/>) for up-to-date listings.

In Australia, telecommunications carriers who intend to install, or who are installing or operating fixed radiocommunications infrastructure used to supply a carriage service, may be required to comply with the Australian Communications Industry Forum (ACIF) Code C564:2002.

1.2 APPLICATION

This Standard is intended to apply to original work and subsequent alterations and additions. It is not intended to apply, retrospectively, to existing approved sites, although it contains guidance on how to make improvements or help alleviate problems that could have arisen.

This Standard applies to facilities used for radiocommunications purposes such as:

- (a) Cellular phone base stations.
- (b) Two-way radio base stations.
- (c) Broadcasting stations used for television, FM radio, AM radio and similar services
- (d) Microwave point-to-point stations.
- (e) Microwave point-to-multipoint stations.
- (f) Satellite earth stations.
- (g) Radiolocation stations.