

Australian/New Zealand Standard™

**Refrigerating systems and heat
pumps—Safety and environmental
requirements**

**Part 3: Installation site
(ISO 5149-3:2014, MOD)**



AS/NZS 5149.3:2016

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee ME-006, Refrigeration. It was approved on behalf of the Council of Standards Australia on 7 September 2016 and by the New Zealand Standards Approval Board on 28 September 2016.

This Standard was published on 19 October 2016.

The following are represented on Committee ME-006:

Air Conditioning and Refrigeration Equipment Manufacturers Association of Australia
Air Conditioning and Refrigeration Wholesalers Association
Australian Industry Group
Australian Institute of Refrigeration, Air Conditioning and Heating
Australian National Retailers Association
Australian Refrigeration Council
Climate Control Companies Association, New Zealand
Consumer Electronics Suppliers Association
Department of Environment
Department of Natural Resources and Mines, Qld
Environmental Protection Authority, New Zealand
Green Cooling Association
Institute of Refrigeration Heating and Air Conditioning Engineers of New Zealand
Metropolitan Fire and Emergency Services Board, Vic.
Ministry of Business, Innovation and Employment New Zealand
New Zealand Electrotechnical Committee
Refrigerants Australia
Workplace Health and Safety Queensland
WorkSafe New Zealand
WorkSafe Victoria

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 Standards may also be withdrawn.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.saiglobal.com or Standards New Zealand website at www.standards.govt.nz and looking up the relevant Standard in the on-line catalogue.

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 Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

Australian/New Zealand Standard™

Refrigerating systems and heat pumps—Safety and environmental requirements

**Part 3: Installation site
(ISO 5149-3:2014, MOD)**

Originated in Australia as part of AS CB3—1933.

Final Australian edition AS 1677—1986.

Originated in New Zealand as NZSS 1653:1962.

Final New Zealand editions NZS 5235.1:1991 and NZS 5235.2:1988.

AS 1677—1986, NZS 5235.1:1991 and NZS 5235.2:1998 jointly revised, amalgamated and redesignated in part as AS/NZS 1677.2:1998.

Revised and redesignated in part as AS/NZS 5149.3:2016.

COPYRIGHT

© ISO 2016 – All rights reserved

© Standards Australia Limited/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, unless otherwise permitted under the Copyright Act 1968 (Australia) or the Copyright Act 1994 (New Zealand).

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6011.

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee ME-006, Refrigeration, to supersede, in part, AS/NZS 1677.2, *Refrigerating systems, Part 2: Safety requirements for fixed applications*.

The objective of this series of Standards is to promote the safe design, construction, disposal, installation and operation of refrigerating systems.

This Standard does not address the hazards caused by products of combustion or decomposition of refrigerants. These products may include (but are not limited to) hydrogen fluoride. Exposure to these products can be harmful.

Lubricants and associated hazards are also not covered by this Standard. Lubricants can present significant health and environmental hazards.

AS/NZS 60079.14 is the current Australian/New Zealand Standard on electrical installations design, selection and erection in explosive atmospheres.

The AS/NZS 5149 series consists of the following parts under the general title, *Refrigerating systems and heat pumps—Safety and environmental requirements*:

Part 1: *Definitions, classification and selection criteria (ISO 5149-1:2014, MOD)*

Part 2: *Design, construction, testing, marking and documentation (ISO 5149-2:2014, MOD)*

Part 3: *Installation site (ISO 5149-3:2014, MOD)* (this Standard)

Part 4: *Operation, maintenance, repair and recovery (ISO 5149-4:2014, MOD)*

This Standard is an adoption with national modifications and has been reproduced from ISO 5149-3:2014, *Refrigerating systems and heat pumps—Safety and environmental requirements, Part 3: Installation site*, and has been varied as indicated to take account of Australian/New Zealand conditions. The modifications are specified in the normative Appendix ZZ following the source text.

These modifications to the ISO source text are essential for compliance with this Australian/New Zealand Standard.

Appendix ZA of AS/NZS 5149.1 provides guidance and examples on refrigerant charge limit determination for information only.

This Standard is to be read in conjunction with relevant legislation, regulation and national Refrigeration Industry Code of Practice.

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

- (a) In the source text 'this part of ISO 5149' should read 'this Australian/New Zealand Standard'.
- (b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian/New Zealand Standard</i>
ISO	AS/NZS
3850	4024 Safety of machinery
Safety of machinery—Emergency stop—Principles of design	4024.1201 Part 1604: Design of controls, interlocks and guarding—Emergency stop—Principles for design

IEC		AS/NZS	
60364	Low-voltage electrical installations		
60364-1	Part 1: Fundamental principles, assessment of general characteristics, definitions	3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)
60364	Electrical installations of buildings		
60364-5	Part 5: Selection and erection of electrical equipment	3000	Electrical installations (known as the Australian/New Zealand Wiring Rules)

Only normative references that have an alternative Australian or Australian/New Zealand Standard have been listed.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

CONTENTS

1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Location of refrigerating equipment	1
4.1	General.....	1
4.2	Refrigerating equipment located in the open air.....	2
4.3	Refrigerating equipment located in a machinery room.....	2
4.4	Refrigerating equipment located in the occupied space.....	2
4.5	Refrigerating equipment located in unoccupied areas not designated a machinery room.....	2
4.6	Refrigerating equipment located in a ventilated enclosure within an occupied space.....	2
4.7	Piping duct or shaft.....	2
5	Machinery rooms	2
5.1	Occupancy of machinery rooms and special machinery rooms.....	2
5.2	Venting from or through the machinery room.....	3
5.3	Combustion equipment and air compressors.....	3
5.4	Open flame.....	3
5.5	Storage.....	3
5.6	Remote emergency switch.....	3
5.7	Exterior openings of the machinery room.....	3
5.8	Piping and ducting.....	4
5.9	Normal lighting.....	4
5.10	Emergency lighting.....	4
5.11	Dimensions and accessibility.....	4
5.12	Doors, walls, and ducts.....	4
5.13	Ventilation.....	5
5.14	Machinery rooms for flammable refrigerants (groups A2L, A2, B2L, B2, B3, and A3).....	6
6	Requirements for alternative provision	7
6.1	General.....	7
6.2	Occupied space.....	7
6.3	Ventilation.....	7
6.4	Safety shut-off valves.....	9
7	Electrical installations	9
7.1	General requirements.....	9
7.2	Main power supply.....	10
7.3	Electrical equipment in machinery rooms in which a refrigerating system contains class 2L flammability refrigerants.....	10
8	Safety alarms	10
8.1	General.....	10
8.2	Alarm system power.....	10
8.3	Alarm system warning.....	10
8.4	Additional alarm system requirements for R-717 systems with charges above 4 500 kg.....	11
9	Detectors	11
9.1	General.....	11
9.2	Location of detectors.....	11
9.3	Function of the detector.....	11
9.4	Type and performance of a detector.....	11
9.5	Installation.....	12
10	Instruction manuals, notices, and inspections	12
10.1	Instruction manual.....	12
10.2	Warning notice.....	12

10.3	Visual inspection of site.....	13
10.4	Maintenance of the site.....	13
11	Heat sources and temporary high temperatures located at the site	13
	Bibliography	14

Currently in preview, click buy full version

NOTES

Currently in preview, click buy full version

AUSTRALIAN/NEW ZEALAND STANDARD

Refrigerating systems and heat pumps—Safety and environmental requirements**Part 3:
Installation site (ISO 5149-3:2014, MOD)****1 Scope**

This part of ISO 5149 is applicable to the installation site (plant space and services). It specifies requirements for the site for safety, which could be needed because of, but not directly connected with, the refrigerating system and its ancillary components.

This part of ISO 5149 is applicable to new refrigerating systems, extensions or modifications of existing systems, and for used systems being transferred to and operated on another site. This part of ISO 5149 also applies in the case of the conversion of a system for another refrigerant.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5149-1:2014, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Definitions, classification and selection criteria*

ISO 5149-2:2014, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

ISO 13850, *Safety of machinery — Emergency stop — Principles for design*

IEC 60204-1, *Safety of machinery — Electrical equipment of machines — General requirements*

IEC 60364-1, *Low-voltage electrical installations — Part 1: Fundamental principles, assessment of general characteristics, definitions*

IEC 60364-5, *Electrical installations of buildings — Part 5: Selection and erection of electrical equipment*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 5149-1 apply.

4 Location of refrigerating equipment**4.1 General**

Refrigerating equipment can be sited outside the building in the open air, in a designated machinery room, in occupied areas, or in unoccupied areas not designated as a machinery room.

The refrigerating equipment can be contained in a ventilated enclosure provided by the manufacturer. Requirements for this enclosure are given in ISO 5149-2:2014, 5.2.17.