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

NSAI Standards

Irish Standard
I.S. EN 61643-31:2019

Low-voltage surge protective devices - Part 31: Requirements and test methods for SPDs for photovoltaic installations

© CENELEC 2019 No copying without NSAI permission except as permitted by copyright law.

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

I.S. EN 61643-31:2019

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
EN 61643-31:2019	2019-05-03

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2019-05-21	29.240 29.240.10 NOTE: If blank see CEN/CENELEC cover page

NSAI	T +353 1 807 3800	Sales:
1 Swift Square,	F +353 1 807 3838	T +353 1 857 6730
Northwood, Santry	E standards@nsai.ie	F +353 1 857 6729
Dublin 9	W NSAI.ie	W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

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

National Foreword

I.S. EN 61643-31:2019 is the adopted Irish version of the European Document EN 61643-31:2019, Low-voltage surge protective devices - Part 31: Requirements and test methods for SPDs for photovoltaic installations

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

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

This page is intentionally left blank

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

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61643-31

May 2019

ICS 29.240; 29.240.10

Supersedes EN 50539-11:2013

English Version

Low-voltage surge protective devices - Part 31: Requirements and test methods for SPDs for photovoltaic installations (IEC 61643-31:2018 , modified)

Parafoudres basse tension - Partie 31: Parafoudres pour usage spécifique y compris en courant continu - Exigences et méthodes d'essai des parafoudres pour installations photovoltaïques (IEC 61643-31:2018 , modifiée)

Überspannungsschutzgeräte für Niederspannung - Teil 31: Anforderungen und Prüfungen für Überspannungsschutzgeräte in Photovoltaik-Installationen (IEC 61643-31:2018 , modifiziert)

This European Standard was approved by CENELEC on 2018-02-14. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2019 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

Ref. No. EN 61643-31:2019 E

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

European foreword

The text of document 37A/306/FDIS, future edition 1 of IEC 61643-31, prepared by SC 37A: “Low-voltage surge protective devices”, of IEC/TC 37: “Surge arresters” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61643-31:2019.

A draft amendment, which covers common modifications to IEC 61643-31, was prepared by CLC/TC 37A "Low-voltage surge protective devices" and approved by CENELEC.

The following dates are fixed:

- latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2019-11-03
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2022-05-03

EN 61643-31:2019 supersedes EN 50539-11:2013.

Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 61643-31:2019 are prefixed “Z”.

EN 61643-31:2019 includes the following significant technical changes with respect to EN 50539-11:2013: It includes also guidance for verification of conformity for products already tested according EN 50539-11:2013.

The main changes with respect of EN 50539-11:2013 are the complete restructuring and improvement of the test procedures and test sequences.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For the relationship with EU Directive(s) see informative Annex ZZ, which is an integral part of this document.

Endorsement notice

The text of the International Standard IEC 61643:2018 was approved by CENELEC as a European Standard with agreed common modifications.

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

IEC 61643-31

Edition 1.0 2018-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Low-voltage surge protective devices – Part 31: Requirements and test methods for SPDs for photovoltaic installations

Parafoudres basse tension – Partie 31: Parafoudres pour usage spécifique y compris en courant continu – Exigences et méthodes d'essai des parafoudres pour installations photovoltaïques

IEC 61643-31:2018-01(en-fr)

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

THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2018 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue
The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,…). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org
The world's leading online dictionary of electronic and electrical terms containing 21 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
67 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

A propos de l'IEC
La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC
Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Catalogue IEC - webstore.iec.ch/catalogue
Application autonome pour consulter tous les renseignements bibliographiques sur les Normes internationales, Spécifications techniques, Rapports techniques et autres documents de l'IEC. Disponible pour PC, Mac OS, tablettes Android et iPad.

Recherche de publications IEC - webstore.iec.ch/advsearchform

La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études,…). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished

Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et aussi une fois par mois par email.

Electropedia - www.electropedia.org

Le premier dictionnaire en ligne de termes électroniques et électriques. Il contient 21 000 termes et définitions en anglais et en français, ainsi que les termes équivalents dans 16 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

Glossaire IEC - std.iec.ch/glossary
67 000 entrées terminologiques électrotechniques, en anglais et en français, extraites des articles Termes et Définitions des publications IEC parues depuis 2002. Plus certaines entrées antérieures extraites des publications des CE 37, 77, 86 et CISPR de l'IEC.

Service Clients - webstore.iec.ch/csc

Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

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

IEC 61643-31

Edition 1.0 2018-01

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Low-voltage surge protective devices – Part 31: Requirements and test methods for SPDs for photovoltaic installations

Parafoudres basse tension – Partie 31: Parafoudres pour usage spécifique y compris en courant continu – Exigences et méthodes d'essai des parafoudres pour installations photovoltaïques

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 29.240.01; 29.240.10

ISBN 978-2-8322-5211-6

Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

® Registered trademark of the International Electrotechnical Commission
Marque déposée de la Commission Electrotechnique Internationale

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

CONTENTS

FOREWORD 5
INTRODUCTION 7
1 Scope 8
2 Normative references 8
3 Terms, definitions, acronyms and symbols 9
3.1 Terms and definitions 9
3.2 Acronyms / Symbols 16
4 Service conditions 17
4.1 Voltage 17
4.2 Air pressure and altitude 17
4.3 Temperatures 17
4.4 Humidity 18
5 Classification 18
5.1 General 18
5.2 SPD design 18
5.3 Class I, II and III tests 18
5.4 Location 18
5.4.1 Indoor 18
5.4.2 Outdoor 18
5.5 Accessibility 18
5.5.1 Accessible 18
5.5.2 Inaccessible 18
5.6 Disconnectors (including overcurrent protection) 18
5.7 Degree of protection provided by enclosures according to IP-code of IEC 60529 19
5.8 Temperature and humidity range 19
5.9 Multipole SPD 19
5.10 SPD failure mode 19
5.11 PV earthing system 19
6 Requirements 19
6.1 General requirements 19
6.1.1 Identification 19
6.1.2 Marking 21
6.2 Electrical requirements 21
6.2.1 Protection against direct contact 21
6.2.2 Residual current I_{PE} 21
6.2.3 Voltage protection level U_p 21
6.2.4 Operating duty 21
6.2.5 Disconnectors and status indicators 22
6.2.6 Insulation resistance 23
6.2.7 Dielectric withstand 23
6.2.8 Continuous current I_{CPV} 23
6.2.9 Total discharge current I_{Total} (for multipole SPDs) 23
6.3 Mechanical requirements 23
6.3.1 Mounting 23
6.3.2 Screws, current carrying parts and connections 23

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

6.3.3 External connections ... 23
6.3.4 Air clearances and creepage distances ... 24
6.3.5 Mechanical strength ... 24
6.4 Environmental and material requirements ... 24
6.4.1 General ... 24
6.4.2 Life test under damp heat ... 24
6.4.3 Electromagnetic compatibility ... 24
6.5 Additional requirements for specific SPD designs ... 25
6.5.1 One-port SPDs with separate input/output terminals – Rated load current I_L ... 25
6.5.2 Environmental tests for outdoor SPDs ... 25
6.5.3 SPDs with separate isolated circuits ... 25
6.6 Additional parameter if declared by the manufacturer – Maximum discharge current I_{max} ... 25
7 Type tests ... 25
7.1 General ... 25
7.2 Testing procedures ... 26
7.2.1 General ... 26
7.2.2 Test impulses ... 30
7.2.3 Characteristics of power sources for testing ... 30
7.3 Indelibility of markings ... 32
7.4 Electrical tests ... 32
7.4.1 Residual current I_{PE} ... 32
7.4.2 Operating duty test ... 33
7.4.3 Disconnectors and safety performance of overstressed SPDs ... 37
7.4.4 SPD failure mode behaviour test ... 38
7.4.5 Dielectric withstand ... 41
7.4.6 Continuous current I_{CPV} ... 42
7.5 Mechanical tests ... 42
7.5.1 Verification of air clearances and creepage distances ... 42
7.5.2 Pass criteria ... 42
7.6 Environmental and material tests ... 45
7.6.1 Life test under damp heat ... 45
7.6.2 Pass criteria ... 45
7.7 Additional tests for specific SPD designs ... 46
7.7.1 Test for one-port SPDs with separate input/output terminals ... 46
7.7.2 Environmental tests for outdoor SPDs ... 46
7.7.3 SPDs with separate isolated circuits ... 46
8 Routine and acceptance tests ... 46
8.1 Routine tests ... 46
8.2 Acceptance tests ... 47
Annex A (normative) Tests to determine the presence of a voltage-switching component and the magnitude of the follow current of an SPD ... 48
A.1 General ... 48
A.2 Test to determine the presence of a voltage-switching component ... 48
A.3 Test to determine the magnitude of the follow current ... 48
Annex B (informative) Transient behaviour of the PV test source ... 49
B.1 Transient behaviour of the PV test source according to 7.2.3.1 ... 49

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

B.2 Test setup using a semiconductor switch to determine the transient behaviour of a PV test source 49
B.3 Alternative test setup using a fuse 50
Bibliography 53

Figure 1 – I/U characteristics 31
Figure 2 – Flow chart of the operating duty test 33
Figure 3 – Example of test setup for operating duty test 34
Figure 4 – Operating duty test timing diagram for test classes I and II 35
Figure 5 – Additional duty test timing diagram for test class I 36
Figure 6 – Operating duty test timing diagram for test class III 36
Figure 7 – Example of sample preparation for SPD failure mode behaviour test 39
Figure B.1 – Test setup using an adjustable semiconductor switch to determine the transient behaviour of a PV test source 49
Figure B.2 – Time behaviour of voltage and current during disconnection operating time of a semiconductor switch at a PV-source I_{SC} = 4 A, open-circuit voltage = 640 V 49
Figure B.3 – Semiconductor disconnection behaviour (normalized) with intersection point i(t) / u(t) 50
Figure B.4 – I/U-characteristic of the PV test source calculated from the normalized current and voltage records in Figure B.3 50
Figure B.5 – Test setup using a fuse to determine the transient behaviour of a PV test source 51
Figure B.6 – Normalized disconnection behaviour during operation of a fuse rated 0,1 x I_{SCPV} at a PV test source with intersection point i(t) and u(t) 51
Figure B.7 – I/U-characteristic of the PV test source calculated from the normalized current and voltage records in Figure B.6 52

Table 1 – List of acronyms and symbols 17
Table 2 – Compliant termination and connection methods 24
Table 3 – Environmental and material requirements 24
Table 4 – Type test requirements for SPDs 28
Table 5 – Common pass criteria for type tests 29
Table 6 – Specific power source characteristics for operating duty tests 31
Table 7 – Specific power source characteristics for failure mode tests 32
Table 8 – Dielectric withstand 41
Table 9 – Air clearances for SPDs 43
Table 10 – Creepage distances for SPDs 44
Table 11 – Relationship between material groups and classifications 45
Table 12 – Test conductors for rated load current test 46

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

LOW-VOLTAGE SURGE PROTECTIVE DEVICES –

Part 31: Requirements and test methods for SPDs for photovoltaic installations

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61643-31 has been prepared by subcommittee 37A: Low-voltage surge protective devices, of IEC technical committee 37: Surge arresters.

The text of this standard is based on the following documents:

FDIS	Report on voting
37A/306/FDIS	37A/310/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

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

A list of all parts of the IEC 61643 series can be found, under the general title *Low-voltage surge protective devices*, on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

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

INTRODUCTION

This part of IEC 61643 addresses safety and performance tests for surge protective devices (SPDs) to be installed on the DC side of photovoltaic installations to protect against induced and direct lightning effects.

There are three classes of tests:

1) The Class I test is intended to simulate partial conducted lightning current impulses. SPDs subjected to Class I test methods are generally recommended for locations at points of high exposure, e.g., line entrances to buildings protected by lightning protection systems.
2) SPDs tested to Class II or Class III test methods are subjected to impulses of shorter duration.
3) SPDs are tested on a “black box” basis as far as possible.

Tests take into account that photovoltaic generators:

- behave like current generators,
- that their output current depends on the incident light intensity and temperature,
- that their short-circuit current is slightly higher than the operating output current,
- are connected in series and/or parallel combinations leading to a great variety of voltages, currents and powers from a few hundreds of W (in residential installations) to several MW (photovoltaic fields).

The specific electrical parameters of PV installations on the DC side require specific test requirements for SPDs.

IEC 61643-32 addresses the selection and application principles of SPDs in practical situations for PV application (work in progress).

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

LOW-VOLTAGE SURGE PROTECTIVE DEVICES –

Part 31: Requirements and test methods for SPDs for photovoltaic installations

1 Scope

This part of IEC 61643 is applicable to Surge Protective Devices (SPDs), intended for surge protection against indirect and direct effects of lightning or other transient overvoltages. These devices are designed to be connected to the DC side of photovoltaic installations rated up to 1 500 V DC.

These devices contain at least one non-linear component and are intended to limit surge voltages and divert surge currents. Performance characteristics, safety requirements, standard methods for testing and ratings are established.

SPDs complying with this standard are exclusively dedicated to be installed on the DC side of photovoltaic generators and the DC side of inverters.

SPDs for PV systems with energy storage (e.g. batteries, capacitor banks) are not covered.

SPDs with separate input and output terminals that contain specific series impedance between these terminal(s) (so called two-port SPDs according to IEC 61643-11:2011) are not covered.

SPDs compliant with this standard are designed to be permanently connected where connection and disconnection of fixed SPDs can only be done using a tool. This standard does not apply to portable SPDs

NOTE 1 In general SPDs for PV applications do not contain a specific series impedance between the input/output terminals due to power efficiency considerations.

NOTE 2 Wherever reference is made to the electric power system or the power system within this document, this refers to the DC side of the photovoltaic installation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60060-1:2010, *High-voltage test techniques – Part 1: General definitions and test requirements*

IEC 60068-2-78:2012, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60664-1:2007, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

SAI GLOBAL

This is a free preview. Purchase the entire publication at the link below:

Product Page

Looking for additional Standards? Visit Intertek Inform Infostore

Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation