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

NSAI Standards

Irish Standard
I.S. EN ISO 14451-9:2013

Pyrotechnic articles - Pyrotechnic articles for vehicles - Part 9: Requirements and categorization for actuators (ISO 14451 -9:2013)

© CEN 2013 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 ISO 14451-9:2013

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:

This document is based on:
EN ISO 14451-9:2013

Published:
12 April, 2013

This document was published under the authority of the NSAI and comes into effect on:

12 April, 2013

ICS number:

43.040.80

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie

W **NSAI.ie**

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

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

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14451-9

March 2013

ICS 43.040.80

English Version

Pyrotechnic articles - Pyrotechnic articles for vehicles - Part 9: Requirements and categorization for actuators (ISO 14451-9:2013)

Articles pyrotechniques - Articles pyrotechniques pour véhicules - Partie 9: Exigences relatives aux actionneurs et leur classement en catégories (ISO 14451-9:2013)

Pyrotechnische Gegenstände - Pyrotechnische Gegenstände für Fahrzeuge - Teil 9: Anforderungen und Kategorisierung von Aktuatoren (ISO 14451-9:2013)

This European Standard was approved by CEN on 9 February 2013.

CEN 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 CEN 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 CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2013 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

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

Contents

Page

Foreword **3**

Annex ZA (informative) **Relationship between this European Standard and the Essential Requirements of EC Directive 2007/23/EC on the placing on the market of pyrotechnic articles** **4**

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

Foreword

This document (EN ISO 14451-9:2013) has been prepared by Technical Committee CEN/TC 212 “Pyrotechnic articles” the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 22 "Road vehicles".

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.

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

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

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 14451-9:2013 has been approved by CEN as EN ISO 14451-9:2013 without any modification.

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

Annex ZA
(informative)

Relationship between this European Standard and the Essential Requirements of EC Directive 2007/23/EC on the placing on the market of pyrotechnic articles

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association to provide one means of conforming to Essential Requirements of the New Approach Directive 2007/23/EC on the placing on the market of pyrotechnic articles.

Once this standard is cited in the Official Journal of the European Union under that Directive and has been implemented as a national standard in at least one Member State, compliance with the normative clauses of this standard given in Table ZA.1 confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard and Directive 2007/23/EC on the placing on the market of pyrotechnic articles *(1 of 2)*

Clause(s)/sub-clause(s) of this document	Essential Safety Requirements (ESRs) of Directive 2007/23/EC	Qualifying remarks/Notes
4.8	(1)	Note: It is taken into account that the intended purpose of the pyrotechnic article is to function in a vehicle in case of accidents
	(2)	See ISO 14451-2
4.8	(3) 1st sentence	
4.8	(3) 2nd and 3rd sentences	Note: It is taken into account that the intended purpose of the pyrotechnic article is to function in a vehicle in case of accidents
4.2	(3a)	
4.5	(3b)	
4.3, 4.4, 4.6	(3c)	
4.5	(3d)	
4.5	(3e)	
4.4, 4.5	(3f)	
4.6	(3g)	
	(3h)	See ISO 14451-3
4.3, 4.5	(3i)	
	(3j)	See ISO 14451-2
4.3, 4.4, 4.6	(3) Last sentence	
1	(4a)	
1	(4b)	

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

Table ZA.1 — *(2 of 2)*

Clause(s)/sub-clause(s) of this document	Essential Safety Requirements (ESRs) of Directive 2007/23/EC	Qualifying remarks/Notes
4.2, 4.8, 6	(5 B.1)	
	(5 B.2)	See ISO 14451-2 and ISO 14451-3
4.6, 4.7	(5 B.3)	
	(5 B.4)	Not applicable
	(5 C.1) to (5 C.5)	Not applicable
4.2	(5 C.6)	
	(5 C.7)	Not applicable

WARNING — Other requirements and other EU Directives may be applicable to the product(s) falling within the scope of this part of EN ISO 14451.

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.

I.S. EN ISO 14451-9:2013

INTERNATIONAL STANDARD

ISO 14451-9

First edition
2013-03-15

Pyrotechnic articles — Pyrotechnic articles for vehicles —

Part 9: Requirements and categorization for actuators

Articles pyrotechniques — Articles pyrotechniques pour véhicules —

Partie 9: Exigences relatives aux actionneurs et leur classement en catégories

Reference number
ISO 14451-9:2013(E)

© ISO 2013

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

COPYRIGHT PROTECTED DOCUMENT

© ISO 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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

Contents

Page

Foreword ..... **iv**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Requirements and acceptance criteria **1**

4.1 General 1
4.2 Verification of design and documentation 1
4.3 Drop test 1
4.4 Vibration and temperature test 2
4.5 Thermal humidity cycling test 2
4.6 Electrostatic discharge (ESD) test 2
4.7 Fire test 2
4.8 Functioning test 3

5 Test matrix **3**

6 Categorization **4**

© ISO 2013 – All rights reserved

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

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 14451-9 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 212, *Pyrotechnic articles*, in collaboration with Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 12, *Passive safety crash protection systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 14451 consists of the following parts, under the general title *Pyrotechnic articles — Pyrotechnic articles for vehicles*:

— *Part 1: Terminology*

— *Part 2: Test methods*

— *Part 3: Labelling*

— *Part 4: Requirements and categorization for micro gas generators*

— *Part 5: Requirements and categorization for airbag gas generators*

— *Part 6: Requirements and categorization for airbag modules*

— *Part 7: Requirements and categorization for seatbelt pretensioners*

— *Part 8: Requirements and categorization for igniters*

— *Part 9: Requirements and categorization for actuators*

— *Part 10: Requirements and categorization for semi-finished products*

© ISO 2013 – All rights reserved

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

Pyrotechnic articles — Pyrotechnic articles for vehicles —

Part 9: Requirements and categorization for actuators

1 Scope

This part of ISO 14451 specifies the types and order of tests to be applied to the actuators and sets out the associated acceptance criteria and means of categorization.

This part of ISO 14451 applies to type tests.

This part of ISO 14451 is not applicable to articles conaining military explosives or commercial blasting agents except for black powder or flash composition.

2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 14451-1, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 1: Terminology*

ISO 14451-2:2013, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 2: Test methods*

ISO 14451-4:2013, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 4: Requirements and categorization for micro gas generators*

ISO 14451-8:2013, *Pyrotechnic articles — Pyrotechnic articles for vehicles — Part 8: Requirements and categorization for igniters*

3 Terms and definitions

For the purposes of this document, the terms and deifinitions given in ISO 14451-1 apply.

4 Requirements and acceptance criteria

4.1 General

Actuators shall meet the requirements specified in 4.2 to 4.8, taking into account the test matrix of Clause 5.

4.2 Verification of design and documentation

Documentation shall be complete as specified in ISO 14451-2:2013, 4.1.

4.3 Drop test

4.3.1 Requirements

Actuators shall be tested as specified in ISO 14451-2:2013, 4.2.

© ISO 2013 – All rights reserved

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