

Nederlandse norm

# **NEN-EN 14382+A1**

(en)

Veiligheidsvoorzieningen voor  
gasdrukregelstations en -installaties -  
Gasveiligheidsafsluiters voor inlaatdrukken tot  
100 bar

Safety devices for gas pressure regulating  
stations and installations - Gas safety shut-off  
devices for inlet pressures up to 100 bar

Vervangt NEN-EN 14382:2005

ICS 23.060.40

april 2009

Als Nederlandse norm is aanvaard:  
 - EN 14382:2005+A1:2009,NT

Voorbeeld  
 Preview

Normcommissie 349065 "Gasdrukregeling- en beveiliging"

---

Apart from exceptions provided by the law, nothing from this publication may be duplicated and/or published by means of photocopy, microfilm, storage in computer files or otherwise, which also applies to full or partial processing, without the written consent of the Netherlands Standardization Institute.

The Netherlands Standardization Institute shall, with the exclusion of any other beneficiary, collect payments owed by third parties for duplication and/or act in and out of law, where this authority is not transferred or falls by right to the Reproduction Rights Foundation.

---

Auteursrecht voorbehouden. Behoudens uitzondering door de wet gesteld mag zonder schriftelijke toestemming van het Nederlands Normalisatie-instituut niets uit deze uitgave worden verveelvoudigd en/of openbaar gemaakt door middel van fotokopie, microfilm, opslag in computerbestanden of anderszins, hetgeen ook van toepassing is op gehele of gedeeltelijke bewerking.

Het Nederlands Normalisatie-instituut is met uitsluiting van ieder ander gerechtigd de door derden verschuldigde vergoedingen voor verveelvoudiging te innen en/of daartoe in en buiten rechte op te treden, voor zover deze bevoegdheid niet is overgedragen c.q. rechtens toekomt aan de Stichting Reprorecht.

---

Although the utmost care has been taken with this publication, errors and omissions cannot be entirely excluded. The Netherlands Standardization Institute and/or the members of the committees therefore accept no liability, not even for direct or indirect damage, occurring due to or in relation with the application of publications issued by the Netherlands Standardization Institute.

---

Hoewel bij deze uitgave de uiterste zorg is nagestreefd, kunnen fouten en onvolledigheden niet geheel worden uitgesloten. Het Nederlands Normalisatie-instituut en/of de leden van de commissies aanvaarden derhalve geen enkele aansprakelijkheid, ook niet voor directe of indirecte schade, ontstaan door of verband houdend met toepassing van door het Nederlands Normalisatie-instituut gepubliceerde uitgaven.

## Nederlands voorwoord

Voor de in deze norm vermelde normatieve verwijzingen bestaan in Nederland de volgende equivalenten:

<u>vermelde norm</u>	<u>Nederlandse norm</u>	<u>titel</u>
EN 287-1:1992	NEN-EN 287-1:1992	Kwalificatie van lassers - Smeltlassen - Deel 1: Staal
EN 334:2005	NEN-EN 334+A1	Gasdrukregelaars voor inlaatdrukken tot 100 bar
EN 473:2000	NEN-EN 473:2000	Niet-destructief onderzoek - Kwalificatie en certificatie van personeel voor niet-destructief onderzoek - Algemene principes
EN 970:1997	NEN-EN 970:1998	Niet-destructief onderzoek van gesmettaste verbindingen - Visueel onderzoek
EN 1092-1:2007	NEN-EN 1092-1:2007	Flenzen en hun verbindingen - Ronde flenzen voor buizen, afsluiters, hulpstukken en accessoires, PN-aanduiding - Deel 1: Stalen flenzen
EN 1092-2:1999	NEN-EN 1092-2:1997	Flenzen en hun verbindingen - Ronde flenzen voor buizen, afsluiters, hulpstukken en toebehoren, met PN-aanduiding - Deel 2: Gietijzeren flenzen
EN 1092-3:2005	-	-
EN 1092-4:2004	-	-
EN 1349	NEN-EN 1349	Regelkleppen voor de procesindustrie
EN 1418:1997	NEN-EN 1418:1998	Laspersoneel - Het kwalificeren van bedieners van lasmachines voor smeltlassen en instellers van weerstandlasapparatuur voor geheel mechanisch en automatisch lassen van metallische materialen
EN 1759-1	NEN-EN 1759-1	Flenzen en hun verbinding - Ronde flenzen voor buizen, afsluiters, hulpstukken en toebehoren, met "class"-aanduiding - Deel 1: Stalen flenzen, NPS 1/2 tot 24
EN 1759-3	NEN-EN 1759-3	Flenzen en hun verbindingen - Ronde flenzen voor buizen, afsluiters, hulpstukken en toebehoren, met "class"-aanduiding - Deel 3: Flenzen van koperlegeringen
EN 1759-4	NEN-EN 1759-4	Flenzen en hun verbindingen - Ronde flenzen voor buizen, afsluiters, hulpstukken en toebehoren, met "class"-aanduiding - Deel 4: Flenzen van aluminiumlegeringen
EN 10045-1	NEN-EN 10045-1	Metalen - Kerfslagproef volgens Charpy - Deel 1: Beproevingmethode
EN 10204:2004	NEN-EN 10204:2004	Producten van metaal - Soorten keuringsdocumenten
EN 10226-1	NEN-EN 10226-1	Afdichtende pijpschroefdraad - Deel 1: Conische buitendraad en cilindrische binnendraad - Afmetingen, toleranties en aanduiding
EN 10226-2	NEN-EN 10226-2	Afdichtende pijpschroefdraad - Deel 2: Conische buitendraad en conische binnendraad - Afmetingen, toleranties en aanduiding
EN 12186	-	-
EN 12279	NEN-EN 12279	Gasvoorzieningsystemen - Gasdrukregelinstallaties in aansluitleidingen - Functionele eisen
EN 12516-1:2005	NEN-EN 12516-1:2005	Industriële afsluiters - Ontwerpsterkte van de behuizing - Deel 1: Tabellarsische methode voor de behuizing van stalen afsluiters
EN 12516-2:2004	NEN-EN 12516-2:2005	Industriële afsluiters - Ontwerpsterkte van de behuizing - Deel 2: Berekeningsmethode voor de behuizing van stalen afsluiters
EN 12516-4:2008	NEN-EN 12516-4:2008	Industriële afsluiters - Ontwerpsterkte van de behuizing - Deel 4: Berekeningsmethode voor industriële afsluiters gefabriceerd in metalen anders dan staal
EN 12627	NEN-EN 12627	Industriële afsluiters - Lasaansluitingen voor stalen afsluiters

EN 13445-4	NEN-EN 13445-4	Niet aan vlambelasting blootgestelde drukvaten - Deel 4: Fabricage
EN 13906-1	NEN-EN 13906-1	Cilindrische schroefveren gemaakt van ronde draad of staaf - Berekeningen ontwerp - Deel 1: Drukveren
EN 13906-2	NEN-EN 13906-2	Cilindrische schroefveren gemaakt van ronde draad en staaf - Berekening en ontwerp - Deel 2: Trekveren
EN 60534-1:1998	NEN 10534-1:1993	Regelkleppen voor de procesindustrie - Deel 1: Terminologie voor regelkleppen en algemene beschouwingen
EN ISO 175:2000	NEN-EN-ISO 175:2000	Kunststoffen - Beproevingmethoden voor de bepaling van de effecten van onderdompeling in vloeibare chemicaliën
EN ISO 9606-2:2004	NEN-EN-ISO 9606-2:2005	Het kwalificeren van lassers - Smeltlassen - Deel 2: Aluminium en aluminiumlegeringen
EN ISO 9606-3:1999	NEN-EN-ISO 9606-3:1999	Het kwalificeren van lassers - Smeltlassen - Deel 3: Koper en koperlegeringen
EN ISO 9606-4:1999	NEN-EN-ISO 9606-4:1999	Het kwalificeren van lassers - Smeltlassen - Deel 4: Nikkel en nikkellegeringen
EN ISO 15607:2003	NEN-EN-ISO 15607:2003	Beschrijven en goedkeuren van lasmethoden voor metalen - Algemene regels
EN ISO 15609-1:2004	NEN-EN-ISO 15609-1:2004	Beschrijven en goedkeuren van lasmethoden voor metalen - Lasmethodebeschrijving - Deel 1: Booglassen
EN ISO 15610:2003	NEN-EN-ISO 15610:2003	Beschrijven en goedkeuren van lasmethoden voor metalen - Goedkeuring op basis van beproefde lastoevoegmaterialen
EN ISO 15611:2003	NEN-EN-ISO 15611:2003	Beschrijven en goedkeuren van lasmethoden voor metalen - Goedkeuring op basis van opgedane laservaring
EN ISO 15612:2004	NEN-EN-ISO 15612:2004	Beschrijven en goedkeuren van lasmethoden voor metalen - Goedkeuring op basis van een standaardlasmethode
EN ISO 15613:2004	NEN-EN-ISO 15613:2004	Beschrijven en goedkeuren van lasmethoden voor metalen - Goedkeuring op basis van een lasproef voor aanvang van de productie
EN ISO 15614-1:2004	NEN-EN-ISO 15614-1:2004	Beschrijven en goedkeuren van lasmethoden voor metalen - Lasmethodebeproeving - Deel 1: Boogen autogeenlassen van staal en booglassen van nikkel en nikkellegeringen
EN ISO 15614-2:2005	NEN-EN-ISO 15614-2:2005	Beschrijven en goedkeuren van lasmethodes voor metalen - Lasmethodebeproeving - Deel 2: Booglassen van aluminium en zijn legeringen
EN ISO/IEC 17025:2000	NEN-ISO/IEC 17025	Algemene eisen voor de competentie van beproevings- en kalibratielaboratoria
ISO 7-1	-	-
ISO 1817	NEN-ISO 1817	Gevulcaniseerde rubber - Bepaling van de effecten van vloeistoffen
ISO 7005	-	-

EUROPEAN STANDARD

**EN 14382:2005+A1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2009

ICS 23.060.40

Supersedes EN 14382:2005

English Version

## Safety devices for gas pressure regulating stations and installations - Gas safety shut-off devices for inlet pressures up to 100 bar

Dispositifs de sécurité pour postes et installations de détente-régulation de pression de gaz - Clapets de sécurité pour pressions amont jusqu'à 100 bar

Sicherheitseinrichtungen für Gas-Druckregelanlagen und -einrichtungen - Gas-Sicherheitsabsperreinrichtungen für Eingangsdrücke bis 100 bar

This European Standard was approved by CEN on 30 December 2004 and includes Amendment 1 approved by CEN on 12 January 2009.

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 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 Management Centre has the same status as the official versions.

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



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

## Contents

	page
Foreword.....	5
1 Scope.....	6
2 Normative references.....	7
3 Terms, definitions and symbols.....	9
4 Construction requirements.....	20
4.1 Basic requirements.....	20
4.1.1 General.....	20
4.1.2 Types of shut-off devices.....	21
4.1.3 End connections.....	22
4.1.4 Flange ratings.....	22
4.1.5 Nominal sizes and face-to-face dimensions.....	23
4.1.6 Sealing of the adjusting device.....	26
4.1.7 Set range.....	26
4.1.8 External visual indication of the position of the closing member.....	26
4.1.9 Springs.....	26
4.1.10 Parts transmitting actuating forces.....	26
4.1.11 <b>A1</b> Replaceable parts that may be affected by erosion or abrasion.....	26
4.2 Materials.....	26
4.2.1 Requirements for metallic materials.....	26
4.2.2 Requirements for elastomers (including vulcanized rubber).....	31
4.2.3 Requirements for non metallic materials different from those in 4.2.2.....	31
4.3 Strength of housings.....	32
4.3.1 Body and its inner metallic partition walls <b>A1</b> .....	32
4.3.2 Flanges.....	32
4.3.3 <b>A1</b> Other pressure containing parts.....	32
4.3.4 Inner metallic partition walls.....	34
4.3.5 Minimum values of safety factor.....	34
4.3.6 Welded joint coefficient.....	35
5 Functional requirements.....	35
5.1 General.....	35
5.1.1 Shutting-off and opening.....	35
5.1.2 Mounting position.....	35
5.1.3 Bypass.....	35
5.1.4 Ice formation.....	35
5.1.5 Fail-close conditions.....	35
5.1.6 Pressure drop.....	35
5.1.7 <b>A1</b> Surveillance and maintenance.....	36
5.2 Shell strength, external tightness and internal sealing.....	36
5.2.1 Shell strength.....	36
5.2.2 External tightness.....	36
5.2.3 Internal sealing.....	36
5.3 Accuracy group.....	37
5.4 Response time.....	37
5.5 Relatching difference and unlatching.....	37
5.5.1 Relatching difference.....	37
5.5.2 Unlatching under mechanical impact.....	37
5.6 Closing force.....	38
5.7 Endurance and accelerated ageing.....	38

5.8	Strength of the trip mechanism, valve seat and closing member against the dynamic impact of flowing gas.....	38
5.9	Flow coefficient .....	39
5.10	Final visual inspection .....	39
6	Testing .....	39
6.1	General .....	39
6.2	Tests .....	39
6.3	Type test .....	40
6.4	Selection of test samples .....	41
6.5	Routine tests .....	41
6.6	Production surveillance.....	41
7	Test and verification methods .....	41
7.1	Dimensional check and visual inspection .....	41
7.2	Materials check.....	41
7.3	Verification of the strength of pressure containing parts and inner metallic partition walls.....	42
7.3.1	Strength calculation method .....	42
7.3.2	Experimental design method .....	42
7.4	Verification of the strength of parts transmitting actuating forces .....	43
7.5	Shell and inner metallic partition walls strength test .....	43
7.6	Alternative shell and inner metallic walls strength test .....	44
7.7	External tightness test .....	44
7.7.1	External tightness test of metallic housing .....	44
7.7.2	External tightness test of chambers bounded on at least one side by a diaphragm.....	45
7.8	Internal sealing test .....	46
7.9	Accuracy group .....	46
7.9.1	General conditions .....	46
7.9.2	Test at ambient temperature .....	46
7.9.3	Test at the limit temperatures $-20^{\circ}\text{C}$ or $-10^{\circ}\text{C}$ and $60^{\circ}\text{C}$ .....	47
7.9.4	Verification of the upper limit of the highest set range for overpressure monitoring (A1) .....	48
7.9.5	Determination of flow coefficient.....	48
7.10	Response time .....	50
7.11	Relatching difference and unlatching .....	51
7.11.1	Trip pressure for over pressure monitoring (A1).....	51
7.11.2	Lower trip pressure .....	51
7.12	Closing force.....	52
7.13	Endurance and accelerated ageing .....	53
7.14	Resistance to gas of non metallic parts.....	53
7.15	Verification of the strength of the trip mechanism, valve seat and closing member against dynamic impact of flowing gas .....	53
7.16	Final visual inspection .....	54
7.16.1	After type test .....	54
7.16.2	After routine tests and production surveillance .....	54
8	Documentation .....	54
8.1	Documentation related to type test .....	54
8.1.1	Documentation required prior to type test .....	54
8.1.2	Test report.....	55
8.2	Documentation for the customer .....	55
8.2.1	Sizing equation .....	55
8.2.2	Documentation provided at the request of the customer .....	55
8.2.3	Documentation provided with the shut-off device.....	55
8.3	Documentation related to production surveillance in accordance with 6.6.....	56
8.3.1	Documentation to be available for production surveillance.....	56
8.3.2	Production surveillance report .....	56
9	Marking.....	56
9.1	General requirements .....	56
9.2	Marking of connections for sensing, exhaust and breather lines.....	57
9.3	Identification of auxiliary devices.....	57

## EN 14382:2005+A1:2009 (E)

<b>Annex A</b> (informative) <b>Ice formation</b> .....	<b>58</b>
<b>A.1</b> <b>General</b> .....	<b>58</b>
<b>A.2</b> <b>Requirements</b> .....	<b>58</b>
<b>A.3</b> <b>Tests</b> .....	<b>58</b>
<b>Annex B</b> (informative) <b>Compliance evaluation</b> .....	<b>59</b>
<b>B.1</b> <b>General</b> .....	<b>59</b>
<b>B.2</b> <b>Introduction</b> .....	<b>59</b>
<b>B.3</b> <b>Procedure</b> .....	<b>59</b>
<b>B.4</b> <b>Manufacturer's compliance evaluation</b> .....	<b>60</b>
<b>B.5</b> <b>Issue of the certificate of compliance</b> .....	<b>60</b>
<b>Annex C</b> (informative) <b>Pressure drop and flow coefficient</b> .....	<b>61</b>
<b>C.1</b> <b>Calculation method for pressure drop throughout the SSD</b> .....	<b>61</b>
<b>C.2</b> <b>Test method for the determination of the flow coefficient <math>C_v</math></b> .....	<b>61</b>
<b>Annex D</b> (informative) <b>Alternative test method for verification of the strength of the trip mechanism, valve seat and closing member</b> .....	<b>63</b>
<b>D.1</b> <b>Test method</b> .....	<b>63</b>
<b>D.2</b> <b>Test method for the determination of the dynamic factor <math>C_r</math></b> .....	<b>63</b>
<b>D.3</b> <b>Test method for a series of SSDs</b> .....	<b>64</b>
<b>Annex E</b> (informative) <b>Sizing equation</b> .....	<b>66</b>
<b>Annex F</b> (informative) <b>Inspection certificate</b> .....	<b>67</b>
<b>Annex G</b> (informative) <b>Order specification</b> .....	<b>69</b>
<b>G.1</b> <b>General</b> .....	<b>69</b>
<b>G.2</b> <b>Minimum specifications</b> .....	<b>69</b>
<b>G.2.1</b> <b>Details of construction</b> .....	<b>69</b>
<b>G.2.2</b> <b>Dimensions</b> .....	<b>69</b>
<b>G.2.3</b> <b>Performance</b> .....	<b>69</b>
<b>G.3</b> <b>Optional specifications</b> .....	<b>70</b>
<b>Annex H</b> (informative) <b>Acceptance test</b> .....	<b>71</b>
<b>Annex I</b> (informative) <b>A1) Seat leakage (alternative requirement) A1)</b> .....	<b>72</b>
<b>Annex J</b> (normative) <b>Materials</b> .....	<b>73</b>
<b>J.1</b> <b>Steel materials for pressure containing parts and inner metallic partition walls</b> .....	<b>73</b>
<b>J.2</b> <b>Metallic materials different from steel materials for pressure containing parts and inner metallic partition walls</b> .....	<b>79</b>
<b>J.3</b> <b>Materials for fixtures, integral process and sensing lines, connectors and fasteners</b> .....	<b>84</b>
<b>Annex K</b> (informative) <b>A1) Suitability of safety shut-off device for damp operating conditions</b> .....	<b>87</b>
<b>Annex L</b> (informative) <b>Glossary</b> .....	<b>88</b>
<b>Annex ZA</b> (informative) <b>Relationship between this European Standard and the Essential Requirements of EU Directive 97/23/EC</b> .....	<b>90</b>
<b>Bibliography</b> .....	<b>92</b>



## Foreword

This document (EN 14382:2005+A1:2009) has been prepared by Technical Committee CEN/TC 235 "Gas pressure regulators and associated safety devices for use in gas transmission and distribution", the secretariat of which is held by UNI.

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 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

This document includes Amendment 1, approved by CEN on 2009-01-12.

This document supersedes <sup>A1</sup> EN 14382:2005 <sup>A1</sup>.

The start and finish of text introduced or altered by amendment is indicated in the text by tags <sup>A1</sup> <sup>A1</sup>.

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 97/23/EC.

For relationship with EU Directive 97/23/EC, see informative Annex ZA, which is an integral part of this document.

Safety shut-off devices dealt with in this document are standard safety shut-off devices and, when used in pressure regulating stations complying with EN 12186 or EN 12279, they are considered as standard pressure equipment in accordance with Clause 3.1 of Art. 1 of Pressure Equipment Directive (PED).

For standard safety shut-off devices used in pressure regulating stations complying with EN 12186 or EN 12279, Table ZA.1 given in Annex ZA includes all applicable Essential Requirements given in Annex I of PED <sup>A1</sup> except the external corrosion resistance in case of environmental conditions where corrosion is likely to occur <sup>A1</sup>.

The normative Annex J of this document lists some suitable materials for pressure containing parts, inner metallic partition walls, fasteners and connectors. Other materials may be used when complying with the restrictions given in Table 5.

<sup>A1</sup> *deleted text* <sup>A1</sup>

<sup>A1</sup> Continued <sup>A1</sup> integrity of safety shut-off devices is assured by periodic functional checks. For periodic functional checks it is common to refer to national regulations/standards where existing or users/manufacturers practices.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## 1 Scope

**[A1]** This document specifies constructional, functional, testing and marking requirements, sizing and documentation of gas safety shut-off devices used in the pressure regulating stations in accordance with EN 12186 or EN 12279: **[A1]**

- for inlet pressures up to 100 bar and nominal diameters up to DN 400;
- for an operating temperature range from  $-20\text{ }^{\circ}\text{C}$  to  $+60\text{ }^{\circ}\text{C}$ ,

which operate with fuel gases of the 1<sup>st</sup> and 2<sup>nd</sup> family in accordance with EN 437 in transmission and distribution networks and also in commercial and industrial installations.

"Gas safety shut-off devices" will hereafter be called "SSDs" except in titles.

**[A1]** For standard safety shut-off devices when used in pressure regulating stations complying with EN 12186 or EN 12279, Annex ZA lists all applicable Essential Requirements except the external corrosion resistance in case of environmental conditions where corrosion is likely to occur. **[A1]**

**[A1]** This document considers the following classes/types of SSDs: **[A1]**

temperature classes:

- class 1: operating temperature range from  $-10\text{ }^{\circ}\text{C}$  to  $60\text{ }^{\circ}\text{C}$ ;
- class 2: operating temperature range from  $-20\text{ }^{\circ}\text{C}$  to  $60\text{ }^{\circ}\text{C}$ ;

functional classes:

- **[A1]** class A: SSDs that close when damage to the pressure detector element occurs (applicable to overpressure SSDs only) or when external power fails and whose re-opening, after an intervention for overpressure, is possible only manually;
- class B: SSDs that do not close when damage to the pressure detector element occurs and whose re-opening, after an intervention for overpressure, is possible only manually;

SSDs types:

- type IS: (integral strength type);
- type DS: (differential strength type). **[A1]**

SSDs complying with the requirements of this document may be declared as "in conformity with EN 14382" and bear the mark "EN 14382".

The material and functional requirements specified in this document may be applied to SSDs which use thermal energy or the effects of electrical energy to trip the operation of the closing member. For these SSDs the operational parameters are not specified in this document.

This document does not apply to:

- SSDs upstream from/on/in domestic gas-consuming appliances which are installed downstream of domestic gas meters;
- **[A1]** SSDs incorporated into pressure-regulating devices used in service lines with volumetric flow rate  $\leq 200\text{ m}^3/\text{h}$  at normal conditions and inlet pressure  $\leq 5\text{ bar}$ . **[A1]**

## 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 amendments) applies.

~~EN 10002-1:2005, Steel forgings – Part 1: General technical requirements~~

EN 287-1:1992, *Approval testing of welders – Fusion welding – Part 1: Steel*

EN 334:2005, *Gas pressure regulators for inlet pressures up to 100 bar*

~~EN 473:2000, Non-destructive testing – Qualification and certification of NDT personnel – General principles~~

~~EN 581:2005, Steel forgings – Part 2: General technical requirements~~

EN 970:1997, *Non-destructive examination of fusion welds – Visual examination*

~~EN 10002-2:2005, Steel forgings – Part 2: General technical requirements~~

EN 1092-1:2007, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 1: Steel flanges*

EN 1092-2:1999, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 2: Cast iron flanges*

EN 1092-3:2005, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 3: Copper alloy flanges*

EN 1092-4:2004, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, PN designated – Part 4: Aluminium alloy flanges*

EN 1349, *Industrial process control valves*

EN 1418:1997, *Welding personnel – Approval testing of welding operators for fusion welding and resistance weld setters for fully mechanized and automatic welding of metallic materials*

~~EN 10002-3:2005, Steel forgings – Part 3: General technical requirements~~

EN 1759-1, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, Class-designated – Part 1: Steel flanges, NPS ½ to 24*

EN 1759-3, *Flanges and their joints – Circular flanges for pipes, valves, fittings and accessories, Class designated – Part 3: Copper alloy flanges*

EN 1759-4, *Flanges and their joint – Circular flanges for pipes, valves, fittings and accessories, class designated – Part 4: Aluminium alloy flanges*

EN 10045-1, *Metallic materials – Charpy impact test – Part 1: Test method*

EN 10204:2004, *Metallic products – Types of inspection documents*

EN 10226-1, *Pipe threads where pressure tight joints are made on the threads – Part 1: Taper external threads and parallel internal threads – Dimensions, tolerances and designation*

EN 10226-2, *Pipe threads where pressure tight joints are made on the threads – Part 2: Taper external threads and taper internal threads – Dimensions, tolerances and designation*

**EN 14382:2005+A1:2009 (E)**

EN 12186, *Gas supply systems – Gas pressure regulating stations for transmission and distribution – Functional requirements*

EN 12279, *Gas supply systems – Gas pressure regulating installations on service lines – Functional requirements*

**[A1]** EN 12516-1:2005, *Industrial valves – Shell design strength – Part 1: Tabulation method for steel valve shells*

EN 12516-2:2004, *Industrial valves – Shell design strength – Part 2: Calculation method for steel valve shells*

EN 12516-4:2008, *Industrial valves – Shell design strength – Part 4: Calculation method for valve shells in metallic materials other than steel* **[A1]**

**[A1]** deleted text **[A1]**

EN 12627, *Industrial valves – Butt welding ends for steel valves*

EN 13445-4, *Unfired pressure vessels – Part 4: Fabrication*

EN 13906-1, *Cylindrical helical springs made from round wire and bar – Calculation and design – Part 1: Compression springs*

EN 13906-2, *Cylindrical helical springs made from round wire and bar – Calculation and design – Part 2: Extension springs*

EN 60534-1:1993, *Industrial-process control valves – Part 1: Control valve terminology and general considerations (IEC 60534-1:1987)*

EN ISO 175:2000, *Plastics – Methods of test for the determination of the effects of immersion in liquid chemicals (ISO 175:1999)*

**[A1]** EN ISO 9606-2:2004, *Qualification test of welders – Fusion welding – Part 2: Aluminium and aluminium alloys (ISO 9606-2:2004)*

EN ISO 9606-3:1999, *Qualification test of welders – Fusion welding – Part 3: Copper and copper alloys (ISO 9606-3:1999)*

EN ISO 9606-4:1999, *Qualification test of welders – Fusion welding – Part 4: Nickel and nickel alloys (ISO 9606-4:1999)*

EN ISO 15607:2003, *Specification and qualification of welding procedures for metallic materials – General rules (ISO 15607:2003)*

EN ISO 15609-1:2004, *Specification and qualification of welding procedures for metallic materials – Welding procedure specification – Part 1: Arc welding (ISO 15609-1:2004)*

EN ISO 15610:2003, *Specification and qualification of welding procedures for metallic materials – Qualification based on tested welding consumables (ISO 15610:2003)*

EN ISO 15611:2003, *Specification and qualification of welding procedures for metallic materials – Qualification based on previous welding experience (ISO 15611:2003)*

EN ISO 15612:2004, *Specification and qualification of welding procedures for metallic materials – Qualification by adoption of a standard welding procedure (ISO 15612:2004)*

EN ISO 15613:2004, *Specification and qualification of welding procedures for metallic materials – Qualification based on pre-production welding test (ISO 15613:2004)*

# Bestelformulier

## Stuur naar:

NEN Standards Products & Services  
t.a.v. afdeling Klantenservice  
Antwoordnummer 10214  
2600 WB Delft



**NEN** Standards Products & Services

Postbus 5059  
2600 GB Delft

Vlinderweg 6  
2623 AX Delft

T (015) 2 690 390  
F (015) 2 690 271

[www.nen.nl/normshop](http://www.nen.nl/normshop)

## Ja, ik bestel

\_\_ ex. NEN-EN 14382:2005+A1:2009 en Veiligheidsvoorzieningen voor gasdrukregelstations en -installaties - Gasveiligheidsafsluiters voor inlaatdrukken tot 100 bar € 99.00

**Wilt u deze norm in PDF-formaat? Deze bestelt u eenvoudig via [www.nen.nl/normshop](http://www.nen.nl/normshop)**

### Gratis e-mailnieuwsbrieven

Wilt u op de hoogte blijven van de laatste ontwikkelingen op het gebied van normen, normalisatie en regelgeving? Neem dan een gratis abonnement op een van onze e-mailnieuwsbrieven. [www.nen.nl/nieuwsbrieven](http://www.nen.nl/nieuwsbrieven)

## Gegevens

Bedrijf / Instelling \_\_\_\_\_

T.a.v. \_\_\_\_\_ O M O V

E-mail \_\_\_\_\_

Klantnummer NEN \_\_\_\_\_

Uw ordernummer \_\_\_\_\_ BTW nummer \_\_\_\_\_

Postbus / Adres \_\_\_\_\_

Postcode \_\_\_\_\_ Plaats \_\_\_\_\_

Telefoon \_\_\_\_\_ Fax \_\_\_\_\_

**Factuuradres** (indien dit afwijkt van bovenstaand adres)

Postbus / Adres \_\_\_\_\_

Postcode \_\_\_\_\_ Plaats \_\_\_\_\_

Datum \_\_\_\_\_ Handtekening \_\_\_\_\_

### Retourneren

Fax: 015 2 690 271

E-mail: [klantenservice@nen.nl](mailto:klantenservice@nen.nl)

Post: NEN Standards Products & Services,

t.a.v. afdeling Klantenservice  
Antwoordnummer 10214,  
2600 WB Delft

(geen postzegel nodig).

### Voorwaarden

- De prijzen zijn geldig tot 31 december 2018, tenzij anders aangegeven.
- Alle prijzen zijn excl. btw, verzend- en handelingskosten en onder voorbehoud bij o.m. ISO- en IEC-normen.
- Bestelt u via de normshop een pdf, dan betaalt u geen handeling en verzendkosten.
- Meer informatie: telefoon 015 2 690 391, dagelijks van 8.30 tot 17.00 uur.
- Wijzigingen en typfouten in teksten en prijsinformatie voorbehouden.
- U kunt onze algemene voorwaarden terugvinden op: [www.nen.nl/leveringsvoorwaarden](http://www.nen.nl/leveringsvoorwaarden).