SLOVENSKI STANDARD

oSIST prEN IEC 61010-2-011:2018/oprAA:2021

01-januar-2021

Varnostne zahteve za električno opremo za meritve, nadzor in laboratorijsko uporabo - 2-011. del: Posebne zahteve za hladilno opremo

Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-011: Particular requirements for refrigerating equipment

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2 -011: Besondere Anforderungen für Kühlgeräte

Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-011: Exigences particulières pour appareils de réfrigération

Ta slovenski standard je istoveten z: **prEN IEC 61010-2-011:2018/prAA**

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
27.200	Hladilna tehnologija	Refrigerating technology
71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

oSIST prEN IEC 61010-2-011:2018/oprAA:2021 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-011: Particular requirements for refrigerating equipment

Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 2-011: Exigences particulières pour appareils de réfrigération

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2-011: Besondere Anforderungen für Kühlgeräte

This draft amendment prAA, if approved, will modify the European Standard prEN IEC 61010-2-011:2018; it is submitted to CENELEC members for enquiry.
Deadline for CENELEC: 2021-02-19.

It has been drawn up by CLC/TC 66X.

If this draft becomes an amendment, CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

This draft amendment was established by CENELEC in three official versions (English, French, German).
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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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CENELEC

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

European foreword

This document (prEN 61010-2-011:2018/prAA:2020) has been prepared by CLC/TC 66X “Safety of measuring, control, and laboratory equipment”.

This document is currently submitted to the Enquiry.

The following dates are proposed:

• latest date by which the existence of this document has to be announced at national level	(doa)	dor + 6 months
• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	dor + 12 months
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	dor + 36 months (to be confirmed or modified when voting)

This document amends prEN 61010-2-011:2018.

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.

1 Modification to Clause 2, "Normative references"

Add the following normative references to Clause 2:

"EN 61770, *Electric appliances connected to the water mains - Avoidance of backsiphonage and failure of hose-sets*

EN 809, *Pumps and pump units for liquids - Common safety requirements*

EN 837-1, *Pressure gauges - Part 1: Bourdon tube pressure gauges - Dimensions, metrology, requirements and testing*

EN 837-2, *Pressure gauges - Part 2: Selection and installation recommendations for pressure gauges*

EN 837-3, *Pressure gauges - Part 3: Diaphragm and capsule pressure gauges - Dimensions, metrology, requirements and testing*

EN 1736, *Refrigerating systems and heat pumps - Flexible pipe elements, vibration isolators, expansion joints and non-metallic tubes - Requirements, design and installation*

EN 1779:1999, *Non-destructive testing - Leak testing - Criteria for method and technique selection*

EN 12178, *Refrigerating systems and heat pumps - Liquid level indicating devices - Requirements, testing and marking*

EN 12263, *Refrigerating systems and heat pumps - Safety switching devices for limiting the pressure - Requirements and tests*

EN 12284, *Refrigerating systems and heat pumps - Valves - Requirements, testing and marking*

EN 12693, *Refrigerating systems and heat pumps - Safety and environmental requirements - Positive displacement refrigerant compressors*

EN 13136, *Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation*

EN 13445-1, *Unfired pressure vessels - Part 1: General*

EN 13445-2, *Unfired pressure vessels - Part 2: Materials*

EN 13445-3, *Unfired pressure vessels - Part 3: Design*

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

EN 13445-5, *Unfired pressure vessels - Part 5: Inspection and testing*

EN 13445-6, *Unfired pressure vessels - Part 6: Requirements for the design and fabrication of pressure vessels and pressure parts constructed from spheroidal graphite cast iron*

EN 13445-8, *Unfired pressure vessels - Part 8: Additional requirements for pressure vessels of aluminium and aluminium alloys*

EN 13445-10, *Unfired pressure vessels - Part 10: Additional requirements for pressure vessels of nickel and nickel alloys*

EN 13480-1. *Metallic industrial piping - Part 1: General*

EN 13480-2. *Metallic industrial piping - Part 2: Materials*

EN 13480-3, *Metallic industrial piping - Part 3: Design and calculation*

EN 13480-4, *Metallic industrial piping - Part 4: Fabrication and installation*

EN 13480-5, *Metallic industrial piping - Part 5: Inspection and testing*

EN 13480-6, *Metallic industrial piping - Part 6: Additional requirements for buried piping*

EN 13480-8, *Metallic industrial piping - Part 8: Additional requirements for aluminium and aluminium alloy piping*

EN 14276-1, *Pressure equipment for refrigerating systems and heat pumps - Part 1: Vessels - General requirements*

EN 14276-2, *Pressure equipment for refrigerating systems and heat pumps - Part 2: Piping - General requirements*

IEC 60335-2-34, *Household and similar electrical appliances - Safety - Part 2-34: Particular requirements for motor-compressors*

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

ISO 4126-1, *Safety devices for protection against excessive pressure — Part 1: Safety valves*

ISO 4126-2, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices*"

2 Modification to 5.4.3, “Equipment installation”

Add the following item after f):

“aa) Instructions on the prevention of back-siphonage into potable water systems (see 11.101)”

3 Modification to 11, “Protection against HAZARDS from fluids and solid foreign objects”

In 11.7.104.3, Leakage test for FLAMMABLE REFRIGERANT, replace the 4th paragraph by the following (make it a note):

“

NOTE Care is expected to be taken that the installation of the capillary tube does not unduly influence the results of the test and that foreign material does not enter the capillary tube during insulation or assembly for test. It can be necessary to position the capillary tube before the equipment is insulated.”

Add the following subclause:

“**11.101 Protection of hot and cold water services**

Back-siphonage from the equipment to the potable water services shall be prevented by means meeting the relevant requirements of EN 61770. Attention is drawn to the existence of national and local regulations. If the means are to be provided by the RESPONSIBLE BODY, this shall be stated in the manufacturer’s installation instructions.

Conformity is checked by inspection and by examination of the manufacturer’s instructions.”

4 Modification to Annex CC, “Safety requirements for components and piping”

Replace Annex CC by the following text:

“Annex CC
(normative)

Safety requirements for components and piping

CC.1 Overview

The sealed system components can be considered pressure vessels in accordance with the Pressure Equipment Directive (PED) 2014/68/EU according to the classification in Table CC.1 and Table CC.2. If the components or piping are classified as a Category II or higher pressure vessel according to the PED, then the requirements of Table CC.3 shall apply including the use of a Notified Body to the PED.

Table CC.1 — Parameters of pressure vessels according to EN 14276-1

Fluid	Nature	PS (bar) [a]	V (L)	PS × V (bar × L)	Category/Article
if	**and**	**and**	**and**	**and**	**then**
Group 1	Gas	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5 and ≤ 200	≤ 1	-	Art. 4.3 [c]
			> 1	≤ 25	Art. 4.3 [c]
				> 25 and ≤ 50	I
				> 50 and ≤ 200	II
		> 200 and ≤ 1 000	≤ 1	-	III
			> 1	> 200 and ≤ 1 000	III
				> 1 000	IV
		> 1 000	-	-	IV
	Liquid [d]	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5 and ≤ 500	≤ 1	-	Art. 4.3 [c]
			> 1	≤ 200	Art. 4.3 [c]
		> 0,5 and ≤ 10		> 200	I
		> 10 and ≤ 500			II
		> 500	< 1	-	II
		> 500	> 1	-	III

Fluid	Nature	PS (bar) [a]	V (L)	PS × V (bar × L)	Category/Article
if	and	and	and	and	then
Group 2	Gas	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5 and ≤ 1 000	≤ 1	-	Art. 4.3 [c]
			> 1	≤ 50	Art. 4.3 [c]
				> 50 and ≤ 200	I
				> 200 and ≤ 1 000	II
		> 1 000 and ≤ 3 000	≤ 1	-	III
			> 1	> 1 000 and ≤ 3 000	III
		> 0,5 and ≤ 4		> 1 000	III
		> 4		> 3 000	IV
		> 3 000	-	-	IV
	Liquid [d]	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5 and ≤ 10	-	-	Art. 4.3 [c]
		> 10 and ≤ 1 000	≤ 10	-	Art. 4.3 [c]
		> 10 and ≤ 1 000	> 10	≤ 10 000	Art. 4.3 [c]
		> 10 and ≤ 500	-	> 10 000	I
		> 1 000	< 10	-	I
		> 500	> 10	> 10 000	II

a 1 bar = 0,1 Mpa.

b PED = Pressure Equipment Directive

c Art. 4.3 = reference to Article 4.3 of the Pressure Equipment Directive

d Liquids are considered to be fluids having a vapour pressure of not more than 0,5 bar above the normal atmospheric pressure (1 013 mbar)

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Table CC.2 — Parameters of piping according to EN 14276-2

Fluid	Nature	PS (bar) [a]	DN	PS × DN (bar) [a]	Category/Article
if	**and**	**and**	**And**	**and**	**then**
Group 1	Gas	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5	≤ 25	-	Art. 4.3 [c]
			> 25 and ≤ 100	≤ 1 000	I
			> 100 and ≤ 350	> 1 000 and ≤ 3 500	II
			> 350	> 3 500	III
	Liquid [d]	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5	≤ 25	-	Art. 4.3 [c]
			-	≤ 2 000	Art. 4.3 [c]
		> 0,5 and ≤ 10	-	> 2 000	I
		> 10 and ≤ 500	> 25		II
		> 500		-	III
Group 2	Gas	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5	≤ 32	-	Art. 4.3 [c]
			-	≤ 1 000	Art. 4.3 [c]
			> 32 and ≤ 100	> 1 000 and ≤ 3 500	I
			> 100 and ≤ 250	> 3 500 and ≤ 5 000	II
			> 250	> 5 000	III
	Liquid [d]	≤ 0,5	-	-	Not subjected to PED [b]
		> 0,5 and ≤ 10	-	-	Art. 4.3 [c]
		-	-	≤ 5 000	Art. 4.3 [c]
		-	≤ 200	-	Art. 4.3 [c]
		> 10 and ≤ 500	> 200	> 5 000	I
		> 500		-	II

Fluid	Nature	PS (bar) [a]	DN	PS × DN (bar) [a]	Category/Article
if	and	and	And	and	then

a 1 bar = 0,1 Mpa.

b PED = Pressure Equipment Directive.

c Art. 4.3 = reference to Article 4.3 of the Pressure Equipment Directive.

d Liquids are considered to be fluids having a vapour pressure of not more than 0,5 bar above the normal atmospheric pressure (1 013 mbar).

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Table CC.3 — Components and piping requirements

Components	Related standards and requirements
Heat exchangers: – pipe coil without air (tube in tube) – multi-tubular (shell and tubes)	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Plate heat exchangers	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Headers and coils with air as secondary fluid	EN 14276-2 combined with a production leak tightness test based on guidance from EN 1779
Receiver/accumulator/economizer	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Oil separator	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Drier	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Filter	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Muffler	EN 14276-1 or EN 13445 series if applicable combined with 11.7.2 of the present standard
Hermetic positive displacement compressor	IEC 60335-2-34 or EN 12693
Semi hermetic positive displacement compressor	IEC 60335-2-34 or EN 12693
Open positive displacement compressor	EN 12693
Non-positive displacement compressor	EN 14276-1 or EN 13445 series if applicable combined with IEC 60204-1
Pump General requirements Additional requirements for pumps in REFRIGERATING SYSTEMs and heat pumps with R717	EN 809 combined with IEC 60204-1, and combined with a production leak tightness test based on guidance from EN 1779 and the marking requirements from 5.1.2 of this document
Piping	EN 14276-2 or EN 13480 series