SLOVENSKI STANDARD
SIST EN 378-2:2017/oprA1:2019

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Hladilni sistemi in toplotne črpalke - Varnostnotehnične in okoljevarstvene zahteve - 2. del: Načrtovanje, izdelava, preskušanje, označevanje in dokumentacija - Dopolnilo A1

Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation

Kälteanlagen und Wärmepumpen - Sicherheitstechnische und umweltrelevante Anforderungen - Teil 2: Konstruktion, Herstellung, Prüfung, Kennzeichnung und Dokumentation

Systèmes frigorifiques et pompes à chaleur - Exigences de sécurité et d'environnement - Partie 2: Conception, construction, essais, marquage et documentation

Ta slovenski standard je istoveten z: **EN 378-2:2016/prA1**

ICS:

27.080	Toplotne črpalke	Heat pumps
27.200	Hladilna tehnologija	Refrigerating technology

SIST EN 378-2:2017/oprA1:2019 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

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English Version

Refrigerating systems and heat pumps - Safety and environmental requirements - Part 2: Design, construction, testing, marking and documentation

Systèmes frigorifiques et pompes à chaleur - Exigences de sécurité et d'environnement - Partie 2: Conception, construction, essais, marquage et documentation

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This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 182.

This draft amendment A1, if approved, will modify the European Standard EN 378-2:2016. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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.

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

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

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European foreword

This document (EN 378-2:2016/prA1:2019) has been prepared by Technical Committee CEN/TC 182 “Refrigerating systems, safety and environmental requirements”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

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(s).

For relationship with EU Directive(s), see informative Annexes ZA and ZA, which are an integral part of EN 378-2:2016.

1 Modification to Clause 2, Normative references

Replace the following references with the undated version of the same reference:

"EN ISO 10675-1, *Non-destructive testing of welds — Acceptance levels for radiographic testing — Part 1: Steel, nickel, titanium and their alloys (ISO 10675-1)*

EN ISO 10675-2, *Non-destructive testing of welds — Acceptance levels for radiographic testing — Part 2: Aluminium and its alloys (ISO 10675-2)*"

2 Modification to Subclause 5.2.1

Replace Table 1 with the following:

"

Table 1 — Components and piping requirements

COMPONENT	related standard AND requirements
Heat exchangers: — pipe coil without air (tube in tube) — multi-tubular (shell and tubes)	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Plate heat exchangers	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Headers, coils and grids with air as secondary fluid	EN 14276-2 or EN 14276-1 if applicable combined with 5.2.2.2 of this standard
Receiver/accumulator/economizer	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Oil separator	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Drier	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Filter	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Muffler	EN 14276-1 or EN 13445 if applicable combined with 5.2.2 of this standard
Hermetic positive displacement motor-compressor	EN 14276-1, EN 60335-2-34 or EN 12693
Semi-hermetic positive displacement motor-compressor	EN 60335-2-34 or EN 12693
Open positive displacement compressor	EN 12693

COMPONENT		related standard AND requirements
Non positive displacement compressor		EN 14276-1, EN 1012-3 or EN 13445 if applicable combined with EN 60204-1
Pump	general requirements	EN 809, and combined with 5.2.2.2 and 5.2.2.4 of this standard
	additional requirements for pumps in refrigerating systems and heat pumps with R-717	Annex A
Piping		EN 14276-2 or EN 13480
Piping joints: permanent joints		EN 14276-2
Piping joints: detachable joints		5.2.2.2 and 5.2.2.3 of this standard
Flexible piping		EN 1736
Valves	general	EN 12284
	isolating valves	EN 12284
	hand operated valves	EN 12284
	valves with seal cap	EN 12284
	pressure relief valve	EN 13136 and EN ISO 4126-1 combined with 5.2.2 of this standard
Safety switching devices for limiting the pressure		EN 12263 combined with 5.2.2.2 of this standard
Bursting disc		EN ISO 4126-2 and EN 13136 combined with 5.2.2.2 of this standard
Liquid level indicators		EN 12178 combined with 5.2.2.2 of this standard
Gauges		EN 837-1, EN 837-2 and EN 837-3 combined with 5.2.2.2 of this standard
Brazing and soldering materials		5.3.1.3 e), f) of this standard
Welding materials		EN 14276-2

“

3 Modification to Subclause 5.2.2.1

Replace the whole paragraph with the following:

“In addition to the requirements of 5.2.1, the following requirements are applicable for incorporation of specific components and piping into the refrigerating system. For components listed in Table 1, 5.2.2 and subclauses only apply when specifically stated in Table 1.”

4 Modification to Subclause 5.2.2.2

Delete the 7th paragraph.

5 Modification to Subclause 6.2.1

Replace the first paragraph with the following:

"All components and piping selected for the assembly of the refrigerant circuit shall comply with Clause 5."

6 Modification to Subclause 6.2.2.2

Change "NOTE" *to* "NOTE 1"

Add after NOTE 1

"When selecting components for the refrigerating system, the manufacturer shall take into account the impact of the test pressure defined according to 6.3.2.

NOTE 2 This is of special relevance when selecting compressor according to EN60335–2-34."

7 Modification to Subclause 6.2.3.3.1

Replace indent g) of the second paragraph with the following:

"g) flexible refrigerant connectors (such as connecting lines between the indoor unit and other parts) that may be displaced during normal operations shall be protected against mechanical damage";

8 Modification to Subclause 6.2.14

Add the following after paragraph 2 NOTE 1:

"For components and apparatus which are located within closed spaces where a leak simulation test in Annex I results in a flammable concentration persisting for more than three times the leak duration, presence of a source of ignition during abnormal operation shall be taken into account.

For components and apparatus which are located within closed spaces where a leak simulation test in Annex I results in a flammable concentration persisting for more than three times the leak duration, presence of an unintended source of ignition due to overheating, short-circuiting and external mechanical impact (where applicable) shall be taken into account for electrical components that do not comply with EN 60079-series for use in zones 0, 1 or 2."

9 Modification to Subclause 6.3.2

Replace in paragraph 4 the third dashed item of indent a) with the following:

"— remaining piping and piping joints have to be strength pressure tested at minimum 1,1 × PS. In addition, 10 % of the permanent joints of category II or higher have to be submitted to a non-destructive test in accordance with EN ISO 17638 or EN ISO 17640. For brazed joints, EN 12799 applies, for welds EN ISO 10675-1 and EN ISO 10675-2."

Delete the last but second paragraph.

10 Modification to Subclause 6.3.3.3

Replace the second paragraph of indent b) with the following:

"For refrigerants with GWP < 150, the acceptance criterion for this test is that no leaks shall be detected when using detection equipment with a capability of 10^{-4} Pa m^3/s or better, for example application of water with a foaming agent to the outer surface or a leak test spray."