



BSI Standards Publication

Refrigerating systems and heat pumps - Safety and environmental requirements

Part 4: Operation, maintenance, repair and recovery

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National foreword

This British Standard is the UK implementation of EN 378-4:2016+A1:2019. It supersedes BS EN 378-4:2016, which is withdrawn.

The start and finish of text introduced or altered by amendment is indicated in the text by tags. Tags indicating changes to CEN text carry the number of the CEN amendment. For example, text altered by CEN amendment A1 is indicated by A1 A1.

The UK participation in its preparation was entrusted to Technical Committee RHE/18, Refrigeration safety.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Refrigerating systems and heat pumps - Safety and environmental requirements - Part 4: Operation, maintenance, repair and recovery

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Kälteanlagen und Wärmepumpen - Sicherheitstechnische und umweltrelevante Anforderungen - Teil 4: Betrieb, Instandhaltung, Instandsetzung und Rückgewinnung

This European Standard was approved by CEN on 3 September 2016 and includes Amendment 1 approved by CEN on 26 August 2019.

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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.

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Contents	Page
European foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms, definitions and abbreviated terms	6
4 General requirements	6
4.1 Operating instructions	6
4.2 Documentation	6
5 Maintenance and repair	6
5.1 General	6
5.2 Maintenance	7
5.3 Repair	8
5.4 Change of refrigerant type	9
5.4.1 General	9
5.4.2 Planning the change of refrigerant type	9
5.4.3 Execution of the change of refrigerant type	10
6 Requirements for recovery, reuse and disposal	10
6.1 General requirements	10
6.1.1 Disposal	10
6.1.2 Personnel	10
6.1.3 Parts of refrigerating systems	11
6.1.4 Refrigerants	11
6.1.5 Handling	11
6.2 Requirements for recovery and reuse of refrigerant	11
6.2.1 General	11
6.2.2 Recovery for general reuse	12
6.2.3 Recovery for reuse in the same or similar system	12
6.2.4 Requirements for refrigerant recovery and recycling equipment and procedures	14
6.2.5 Reclaim	14
6.3 Requirements for refrigerant transfer, transport and storage	14
6.3.1 General	14
6.3.2 Refrigerant transfer	14
6.3.3 Transport	15
6.3.4 Storage	15
6.4 Requirements for recovery equipment	15
6.4.1 General	15
6.4.2 Operation with respect to the environment	16
6.4.3 Performance	16
6.4.4 Operation and maintenance	16
6.5 Requirements for disposal	16
6.5.1 Refrigerant not intended for reuse	16
6.5.2 Absorbed R-717 (ammonia)	16
6.5.3 Refrigerating machine oil	16
6.5.4 Other components	16
6.6 Requirements for documentation	16

This is a preview of "BS EN 378-4:2016+A1:...". Click here to purchase the full version from the ANSI store.

Annex A (normative) Draining the oil from a refrigerating system	17
A.1 General	17
A.2 Ammonia systems	17
A.2.1 General	17
A.2.2 Draining procedure	17
Annex B (informative) Guide specification for recycled refrigerant	18
Annex C (informative) Handling and storage of refrigerants	19
C.1 General	19
C.2 Handling	19
C.3 Storage	20
C.4 Special provisions for handling ammonia vapour during maintenance or decommissioning	20
C.4.1 General	20
C.4.2 Limitations of ammonia vapour absorption	21
C.4.3 Procedure for ammonia vapour absorption	21
C.4.4 Disposal of the aqua-ammonia solution	22
Annex D (informative)  In-service inspection	23
Annex E (informative) Guidelines for repairs of equipment using flammable refrigerants	26
E.1 General requirements for equipment	26
E.2 Repairs to electrical components	26
E.2.1 Repairs to electrical components	26
E.2.2 Repairs to sealed components	26
E.2.3 Repairs to intrinsically safe components	27
E.3 Repairs to refrigerating system	27
E.4 Requirements for the competent persons	28
Bibliography	29

This is a preview of "BS EN 378-4:2016+A1:...". [Click here to purchase the full version from the ANSI store.](#)

European foreword

This document (EN 378-4:2016+A1:2019) has been prepared by Technical Committee CEN/TC 182 "Refrigerating systems, safety and environmental requirements", the secretariat of which is held by DIN.

This 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 March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

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

This document includes Amendment 1 approved by CEN on 26 August 2019.

This document supersedes A1 EN 378-4:2016 A1.

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

EN 378 consists of the following parts under the general title "Refrigerating systems and heat pumps — Safety and environmental requirements":

- *Part 1: Basic requirements, definitions, classification and selection criteria;*
- *Part 2: Design, construction, testing, marking and documentation;*
- *Part 3: Installation site and personal protection;*
- *Part 4: Operation, maintenance, repair and recovery.*

The main changes in part 4 with respect to the previous edition are listed below:

- *harmonisation as far as possible with ISO 5149:2014;*
- *addition of vacuum procedure in 5.3.8;*
- *addition of moisture test in 6.2.3.*

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

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1 Scope

This European Standard specifies the requirements for the safety of persons and property, provides guidance for the protection of the environment and establishes procedures for the operation, maintenance and repair of refrigerating systems and the recovery of refrigerants.

The term “refrigerating system” used in this European Standard includes heat pumps.

This standard applies:

- a) to refrigerating systems, stationary or mobile, of all sizes including heat pumps;
- b) to secondary cooling or heating systems;
- c) to the location of the refrigerating systems;
- d) to parts replaced and components added after adoption of this standard if they are not identical in function and capacity.

This standard does not cover “motor vehicle air conditioners” constructed according to product standards such as ISO 13043.

Systems using refrigerants other than those listed in EN 378-1:2016, Annex E are not covered by this standard unless they have been assigned to a safety class according to ISO 817.

This standard does not apply to goods in storage.

This standard is not applicable to refrigeration systems and heat pumps which were manufactured before the date of its publication as a European Standard except for extensions and modifications to the system which were implemented after publication.

This standard is applicable to new refrigerating systems, extensions or modifications of already existing systems, and for existing stationary systems, being transferred to and operated on another site.

This standard also applies in the case of the conversion of a system to another refrigerant type, in which case conformity to the relevant clauses of parts 1 to 4 of the standard shall be assessed.

This Part 4 of the European Standard specifies requirements for safety and environmental aspects in relation to operation, maintenance, and repair of refrigerating systems and the recovery, reuse and disposal of all types of refrigerant, refrigerant oil, heat-transfer fluid, refrigerating system and part thereof.

These requirements are intended to minimise risks of injury to persons and damage to property and the environment resulting from improper handling of the refrigerants or from contaminants leading to system breakdown and resultant emission of the refrigerant.

Subclauses 4, 5.1.1 to 5.1.4, 5.2, 5.3.1, 5.3.3 and 6.6 of this European Standard are not applicable to unitary systems having a power cord, being factory sealed, and in conformance with EN 60335 series.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 378-1:2016, *Refrigerating systems and heat pumps — Safety and environmental requirements - Part 1: Basic requirements, definitions, classification and selection criteria*

EN 378-2:2016, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*