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**Refrigerating systems and heat  
pumps — Safety and environmental  
requirements —**

**Part 2:  
Design, construction, testing, marking  
and documentation**

**AMENDMENT 1**

*Systèmes frigorifiques et pompes à chaleur — Exigences de sécurité et  
d'environnement —*

*Partie 2: Conception, construction, essais, marquage et  
documentation*

**AMENDEMENT 1**

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 1, *Safety and environmental requirements for refrigerating systems*.

A list of all parts in the ISO 5149 series can be found on the ISO website.

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# Refrigerating systems and heat pumps — Safety and environmental requirements —

## Part 2:

## Design, construction, testing, marking and documentation

### AMENDMENT 1

#### Clause 2

Correct the title of ISO 817 as follows:

ISO 817, *Refrigerants — Designation and safety classification*

Correct the date of ISO 7010:2011 as follows:

ISO 7010:2019

#### Clause 3

Add the following after the first sentence:

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 4.1

Replace entire subclause with the following:

Refrigerating appliances or systems constructed according to product standards such as IEC 60335-2-24 or IEC 60335-2-89 are presumed to be in conformity with this document.

IEC 60335-2-40 requires appliances to conform to the requirements of this document with regard to mechanical strength. In all other respects, appliances constructed according to IEC 60335-2-40 are presumed to be in conformity with this document.

Components and piping shall comply with the related standards or requirements as indicated in Table 1. Components not included in Table 1 shall conform to relevant national standards or codes. For components not listed in Table 1 and not covered by national standards or codes, the requirements of 4.2 to 4.5 shall apply.

The same requirements as class 2 shall be applied to class 2L, unless specific provisions are given in this document.

**Table 1 — Components and piping requirements**

| Component and piping                                                                            | Requirements                                  |
|-------------------------------------------------------------------------------------------------|-----------------------------------------------|
| Fired heat exchangers                                                                           | see 4.2 to 4.5                                |
| Heat exchangers:<br>— pipe coil without air (tube in tube)<br>— multi-tubular (shell and tubes) | see 4.2 to 4.5                                |
| Plate heat exchangers                                                                           | see 4.2 to 4.5                                |
| Headers and coils with air as secondary fluid                                                   | see 4.2 to 4.5                                |
| Receiver/accumulator/economizer                                                                 | see 4.2 to 4.5                                |
| Oil separator                                                                                   | see 4.2 to 4.5                                |
| Drier                                                                                           | see 4.2 to 4.5                                |
| Filter                                                                                          | see 4.2 to 4.5                                |
| Muffler                                                                                         | see 4.2 to 4.5                                |
| Hermetic positive displacement compressor                                                       | see IEC 60335-2-34 or IEC 60204-1             |
| Semi-hermetic positive displacement compressor                                                  | see IEC 60335-2-34 or IEC 60204-1             |
| Open positive displacement compressor                                                           | see Clause 4.2 to 4.5                         |
| Non-positive displacement compressor                                                            | see IEC 60204-1                               |
| Pump                                                                                            | see IEC 60204-1 combined with 4.4.3 and 4.5.1 |
| Piping                                                                                          | see 4.2 to 4.5                                |
| Piping joints                                                                                   | see 4.2 to 4.5                                |
| Permanent joints                                                                                | see 4.2 to 4.5                                |
| Detachable joints                                                                               | see 4.2 to 4.5                                |
| Flexible piping                                                                                 | see ISO 13971                                 |
| Safety switching devices for limiting the pressure                                              | see 4.2 to 4.5                                |
| Control pressure switch                                                                         | see 4.2 to 4.5                                |
| Safety valve                                                                                    | see ISO 4126-1 combined with 4.4.3            |
| Bursting disc                                                                                   | see ISO 4126-2 combined with 4.4.3            |
| Fusible plug                                                                                    | see 4.5.3                                     |
| Valve                                                                                           | see 4.2 to 4.5                                |
| Isolating valves                                                                                | see 4.2 to 4.5                                |
| Hand-operated valves                                                                            | see 4.2 to 4.5                                |
| Capped valves                                                                                   | see 4.2 to 4.5                                |
| Liquid level indicators                                                                         | see 4.2 to 4.5                                |
| Gauges                                                                                          | see 4.2 to 4.5                                |
| Soldering materials                                                                             | see 4.3.9                                     |
| Brazing materials                                                                               | see 4.3.10                                    |
| Welding materials                                                                               | see 4.3                                       |

If the component contains electrical components and if the component standard does not cover electrical safety, then the component shall fulfil the electrical requirements of IEC 60335-2-40, IEC 60335-2-24, IEC 60335-2-89 or IEC 60204-1, as relevant.