SLOVENSKI STANDARD
SIST EN 13313:2012

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Hladilne naprave in toplotne črpalke - Strokovna usposobljenost osebja

Refrigerating systems and heat pumps - Competence of personnel

Kälteanlagen und Wärmepumpen - Sachkunde von Personal

Systèmes de réfrigération et pompes à chaleur - Compétence du personnel

Ta slovenski standard je istoveten z: EN 13313:2010

ICS:

03.100.30	Vodenje ljudi	Management of human resources
27.080	Toplotne črpalke	Heat pumps
27.200	Hladilna tehnologija	Refrigerating technology

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EUROPEAN STANDARD

NORME EUROPÉENNE

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ICS 27.080; 27.200

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English Version

Refrigerating systems and heat pumps - Competence of personnel

Systèmes de réfrigération et pompes à chaleur - Compétence du personnel

Kälteanlagen und Wärmepumpen - Sachkunde von Personal

This European Standard was approved by CEN on 16 October 2010.

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

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Foreword

This document (EN 13313:2010) 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of an identical text or by endorsement, at the latest by May 2011, and conflicting national standards shall be withdrawn at the latest by May 2011.

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

This document supersedes EN 13313:2001.

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

a) this European Standard is completely revised;

b) this European Standard defines different competence levels;

c) this European Standard defines the activities related to refrigerating circuits and the associated competence profiles;

d) this European Standard takes into account an informative Annex B “Electricity”;

e) this European Standard takes into account an informative Annex C “Examples".

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, Croatia, 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 the United Kingdom.

Introduction

Refrigerating systems, if not properly constructed, installed, operated and maintained, can be of danger to the health and safety of persons, the safety property, be detrimental to the environment and increase the energy consumption.

It is therefore essential that personnel dealing with such systems are competent to carry out the activity, or activities, listed in this standard. These activities cover the particular sectors in which they may operate from original design to final dismantling and disposal. As job descriptions can vary from country to country and from company to company, this standard specifies the activities to be carried out. Job descriptions should specify these activities.

This standard defines the activities related to the refrigerating circuit.

1 Scope

This European Standard defines the activities related to refrigerating circuits and the associated competence profiles and establishes procedures for assessing the competence of persons who carry out these activities.

NOTE As a refrigerating circuit is considered not to incorporate electrical and electronic systems, activities in this area are not part of this standard. For competences on electrical and electronic systems, it is recommended to refer to national regulations or appropriate European or national standards. This European Standard does not apply to persons carrying out work on self contained refrigerating systems as defined in EN 378-1 from the initial design of the product to the complete manufacture of the product, provided the process is controlled and the methods used are checked by an organisation or individual, responsible for the compliance with statutory requirements on health, safety and environment.

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 any amendments) applies.

EN 378-1:2008, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Basic requirements, definitions, classification and selection criteria*

EN ISO/IEC 17024, *Conformity assessment — General requirements for bodies operating certification of persons (ISO/IEC 17024:2003)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 378-1:2008 and the following apply.

3.1
assessment
process by which the evidence generated, gathered and provided about a person is judged to determine competence

3.2
assessment body
evaluation body
organisation which is recognised to assess (evaluate) the competence of persons working on refrigerating circuits

3.3
certification body
organisation which issues/awards certificates proving the competence of persons working on refrigerating circuits

NOTE 1 Depending on national regulations, assessment bodies and certification bodies may be the same or different organisations.

NOTE 2 General criteria for certification bodies can be found in EN ISO/IEC 17024.

3.4
competence
ability to perform safely and satisfactorily the activities within an occupation

3.5
qualification
evidence of a certain level of professional competence

NOTE See 4.2 and Annex A.

3.6
certification
procedure used to demonstrate the qualification of personnel at a specified level and leading to the issue of a certificate

3.7
certificate
document issued under the rules of the assessment system defined in Annex A indicating that the named person is competent to deal with applicable health, safety, environmental protection and energy conservation requirements for refrigerating systems and heat pumps

3.8
designing
collecting all data required for making an effective operating refrigerating circuit, or making the conceptual and detailed plan of the refrigerating circuit (e.g. dimensioning, calculation, component selection, refrigerant piping layout and sizing)

3.9
pre-assembling
fabricating parts and sub-assemblies of a refrigerating circuit in a workshop or on site

NOTE This excludes charging with refrigerant.

3.10
installation
joining two or more pieces of equipment or circuits designed to contain refrigerant, with a view to assembling a refrigerating, air-conditioning or heat pump system in the location where it will be operated

NOTE 1 Installation excludes the action by which a system already assembled is plugged in before being put in operation. It excludes all the operations carried out at the manufacturing site.

NOTE 2 This excludes charging with refrigerant.

3.11
putting into operation
integrity inspection of the refrigerating system and bringing it into work for the first time or after significant changes

NOTE This may include charging with refrigerant.

3.12
commissioning
ensuring that the system is performing according to the predefined conditions after putting the system into operation

NOTE This may include charging with refrigerant.

3.13
operating
running the refrigerating system in a routine manner ensuring that the system works within the conditions required in the user manual

3.14
in-service inspection
all activities needed to check if the refrigerating system complies to predefined requirements (e.g. functionality, correlation of temperature and pressure, capacity checks, quality checks of joints for existence of corrosion)

3.15
leak checking
identifying if there is a leak of refrigerant from the refrigerating system and if yes, identifying the exact location of the leak and reporting the results

3.16
general maintenance
keeping or restoring a refrigerating system to a state from which the desired operation can be provided, without breaking into the refrigerating circuit

3.17
circuit maintenance
keeping or restoring a refrigerating system to a state from which the desired operation can be provided, by breaking into the refrigerating circuit

3.18
decommissioning
ensuring that the refrigerating system is in a safe and environmentally proper condition during the period that it is out of operation

3.19
removing of refrigerant
recovering the refrigerant out of a refrigerating circuit

3.20
dismantling
breaking the refrigerating circuit down into pieces

NOTE This excludes removing of refrigerant.

3.21
basic appreciation level
BA
level of expertise required to discuss main elements of the skill with others

3.22
working knowledge level
WK
level of expertise required for direct involvement in decisions and actions

3.23
fully operational level
FO
level of expertise required to perform personally the majority of the activities

3.24
leading edge level
LE
level of expertise required for significant development of the skill area

4 Requirements

4.1 General

Persons shall be deemed competent if it can be demonstrated that they are capable of carrying out the activities listed in this standard.

4.2 Competence levels

4.2.1 General

Persons shall demonstrate a level of predefined competence as defined in 3.21, 3.22, 3.23, and 3.24, of their theoretical and/or practical ability as necessary for the activity in question, as set out in Annex A.

4.2.2 Requirements for evaluation and certification procedures

The evaluation and certification procedures dealing with the competence of persons related to the refrigerating circuit shall be done according to the procedures defined in EN ISO/IEC 17024.

4.2.3 Requirements for competence assessment methods

If competence assessment methods are defined by national regulations, they shall be used.

If competence assessment methods are not defined by national regulations, they shall be used according to Annex A.

Annex A
(normative)

Competence assessment methods

A.1 General

If no national legislation for a scheme to access and certify competence exists, the following methods shall be used.

A.2 Areas of assessment

A.2.1 General

All persons who demonstrate their practical and theoretical competence by being successfully assessed by an approved organisation should receive a certificate of competence.

A.2.2 Tables

The following tables indicate areas and subjects that need to be assessed to demonstrate competence.

The row on the top of each table denotes the activities to be assessed as defined in Clause 3.

The column on the left side of each table denotes the subject to be assessed.

The cells of the table give the level of expertise as defined in 3.21(BA), 3.22(WK), 3.23(FO) and 3.24(LE).

Theoretical assessment is shown by an unshaded cell and practical assessment by a shaded cell.

A.2.3 Type of assessment

A.2.3.1 Theory is the knowledge of the subject of operation without the ability to demonstrate practical skills.

The assessment should be by written or oral examination.

A.2.3.2 Practice is the ability to perform an operation by demonstrating practical skills in the subject the assessment should be by practical tests.