



SLOVENSKI STANDARD
kSIST FprEN 15628:2014
01-junij-2014

Vzdrževanje - Kvalificiranje vzdrževalcev

Maintenance - Qualification of maintenance personnel

Instandhaltung - Qualifikation des Instandhaltungspersonals

Maintenance - Qualification du personnel de la maintenance

Ta slovenski standard je istoveten z: FprEN 15628

ICS:

03.100.30 Vodenje ljudi Management of human resources

kSIST FprEN 15628:2014

en,fr,de

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

FINAL DRAFT
FprEN 15628

April 2014

ICS 03.080.10; 03.100.30

Will supersede CEN/TR 15628:2007

English Version

Maintenance - Qualification of maintenance personnel

Maintenance - Qualification du personnel de la
maintenance

Instandhaltung - Qualifikation des Instandhaltungspersonals

This draft European Standard is submitted to CEN members for formal vote. It has been drawn up by the Technical Committee CEN/TC 319.

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

This draft European Standard 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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

<https://standards.iteh.ai/catalog/standards/sist/a0f2cbf0-ccc5-406b-b147-17a62bb4c814/sist-en-15628-2014>



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 Competences	6
4.1 Competences of a Maintenance Technician Specialist	6
4.2 Competences of a Maintenance Supervisor and Maintenance Engineer	7
4.3 Competences of a Maintenance Manager	8
5 Required minimum skills and essential knowledge (profile)	8
5.1 Required minimum skills and essential knowledge for a Maintenance Technician Specialist	8
5.2 Required minimum skills and essential knowledge for a Maintenance Supervisor/Engineer.....	13
5.3 Required minimum skills and essential knowledge for a Maintenance Manager.....	22
6 Essential requirements and experience	29
6.1 Maintenance Technician Specialist	29
6.2 Maintenance Supervisor and/or a Maintenance Engineer	29
6.3 Maintenance Manager	30
Annex A (informative) Example of a Maintenance Technician Specialist tasks	31
A.1 Economics	31
A.2 Customers	31
A.3 Processes	31
A.4 Staff	31
A.5 External partners	31
Annex B (informative) Example of a Maintenance Supervisor/Engineer tasks	32
B.1 Economics	32
B.2 Customers	32
B.3 Processes	32
B.4 Staff	33
B.5 External partners	34
Annex C (informative) Example of a Maintenance Manager tasks	35
C.1 Economics	35
C.2 Customers	35
C.3 Processes	35
C.4 Staff	36
C.5 External partners	36
Bibliography	37

Foreword

This document (FprEN 15628:2014) has been prepared by Technical Committee CEN/TC 319 “Maintenance”, the secretariat of which is held by UNI.

This document is currently submitted to the Formal Vote.

This document will supersede CEN/TR 15628:2007.

This document includes the following significant technical changes with respect to CEN/TR 15628:2007:

- substantial improvement;
- revision of the structure to orient the document to the tasks rather than to the knowledge;
- full consideration of the recommendation included in the European Qualification Framework (*Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning*) [1].

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN 15628:2014](#)

<https://standards.iteh.ai/catalog/standards/sist/a0f2cbf0-ccc5-406b-b147-17a62bb4c814/sist-en-15628-2014>

Introduction

Due to the growing extent and the increasing complexity of maintenance in the European industry, very diverse occupational profiles have evolved for maintenance personnel in the different member states. This European Standard specifies requirements such as competences, essential knowledge as well as basic and target qualifications. These requirements are recommended to obtain a specific qualification and to ensure highly qualified professional personnel at the different functions and/or positions in maintenance.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN 15628:2014](https://standards.iteh.ai/catalog/standards/sist/a0f2cbf0-ccc5-406b-b147-17a62bb4c814/sist-en-15628-2014)

<https://standards.iteh.ai/catalog/standards/sist/a0f2cbf0-ccc5-406b-b147-17a62bb4c814/sist-en-15628-2014>

1 Scope

This European Standard specifies the qualification of the personnel with regard to the tasks to be performed in the context of the maintenance of plant, infrastructure and production systems.

In this European Standard, maintenance of plants and buildings is included in terms of technical aspects of services.

This European Standard guides to define the knowledge, skills and competencies required for the qualification of maintenance personnel.

This European Standard covers the following professional persons in the maintenance organisation:

- Maintenance Technician Specialist;
- Maintenance Supervisor and Maintenance Engineer;
- Maintenance Manager (Responsible of Maintenance Function or Service).

This European Standard does not specify the verification criteria nor the specialised training of the personnel, which is related to the specific commodity sector.

NOTE Specialisation and profession are the subject of the training carried out in the relevant sector.

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 13306:2010, *Maintenance - Maintenance terminology*

EN ISO 9000:2005, *Quality management systems - Fundamentals and vocabulary (ISO 9000:2005)*

EN ISO 14001:2004, *Environmental management systems - Requirements with guidance for use (ISO 14001:2004)*

IEC 60050-191:1990+A1:1999+A2:2002, *International Electrotechnical Vocabulary — Chapter 191: Dependability and quality of service* ¹⁾

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13306:2010, EN ISO 9000:2005, EN ISO 14001:2004 and IEC 60050-191:1990+A1:1999+A2:2002, and the following apply.

3.1

competence

the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.

[SOURCE: EU Recommendation 2008/C 111/01 [1], Annex A, (i), modified]

¹⁾ Under revision

FprEN 15628:2014 (E)

Note 1 to entry: Competence is described in terms of responsibility and autonomy.

3.2**knowledge**

the outcome of the assimilation of information through learning.

[SOURCE: EU Recommendation 2008/C 111/01 [1], Annex A, (g), modified]

Note 1 to entry: Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study.

3.3**level of qualification**

classification of qualifications according to different professional persons: Maintenance Technician Specialist, Maintenance Supervisor and/or Maintenance Engineer, Maintenance Manager (Responsible for Maintenance Function or Service)

3.4**procedure**

document and instructions which indicate standardised practices, operational instructions and technical rules referred to the involved competence

3.5**qualification**

a formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards

[SOURCE: EU Recommendation 2008/C 111/01 [1], Annex A, (a)]

Note 1 to entry: The types of qualification, subject of this European Standard and outlined below, are consistent with the European Qualifications Framework for lifelong learning (EQF) [2]. Specifically, the maintenance personnel has adequate competences, skills and knowledge to operate safely, properly, effectively and efficiently, as described in Clause 4.

3.6**skills**

the ability to apply knowledge and use know-how to complete tasks and solve problems.

[SOURCE: EU Recommendation 2008/C 111/01 [1], Annex A, (h), modified]

Note 1 to entry: Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

4 Competences

NOTE The competences are not listed in a prioritised importance.

4.1 Competences of a Maintenance Technician Specialist

Based on the maintenance objectives, the competences of the maintenance technician specialist consists in the independent execution of maintenance tasks, including the following key competences:

- A.1: To perform or ensure the safe execution of the maintenance plans according to business strategies.
- A.2: To act promptly in case of failure or malfunction, ensuring the effectiveness of the restoration.
- A.3: To perform or ensure the proper execution according to rules and procedures relating to safety, health and environmental protection.

- A.4: To ensure the availability of materials, tools and equipment necessary for the execution of maintenance tasks.
- A.5: To coordinate and / or supervise on-site maintenance tasks.
- A.6: To ensure the quality of the maintenance tasks.
- A.7: To use and ensure the use of the ICT (Information and communication technology) systems.

The professional person ensures compliance with the relevant laws, ordinances, directives, operational instructions and the commonly accepted good practices.

An example of a Maintenance Technician Specialist tasks can be found in Annex A, stipulated by the respective member states.

NOTE Tentatively, this professional person can refer to the EQF levels 4 or 5.

4.2 Competences of a Maintenance Supervisor and Maintenance Engineer

With the Maintenance Supervisor or Maintenance Engineer there are specific roles which can be executed exclusively or in a joint responsibility.

The Maintenance Supervisor or Maintenance Engineer coordinates the maintenance tasks according to the annual budget, related maintenance plans and unplanned maintenance tasks. Furthermore, the Maintenance Supervisor or Maintenance Engineer contributes to ensure the required plant availability/plant performance (measured by key performance indicators), based on the company's or department's technical objectives of availability and quality, including the following key competences:

- B.1: To ensure the implementation of maintenance strategies and policies.
- B.2: To plan the maintenance tasks within his area of responsibility, defining and organising the necessary resources.
- B.3: To organise, manage and develop the maintenance resources: personnel, materials and equipment.
- B.4: To ensure compliance with regulations and procedures related to safety, health and environment.
- B.5: To ensure technical and economic efficiency and effectiveness of maintenance tasks based on current state of technology.
- B.6: To participate in the technical aspects of contracts and procurement process and manage the performance of the contractors.
- B.7: To communicate to all necessary partners such as staff, contractors, customers and suppliers.

The Maintenance Engineer works with or supports the Maintenance Manager on the definition of maintenance plans and the identification of the required resources for the execution, the control and the analysis of budget variances. Furthermore, the Maintenance Engineer recommends improvement projects related to availability, reliability, maintainability and safety of assets, including the following key competences.

- B.8: To use their technical/engineering knowledge and the organisational tools to improve maintenance tasks and plant efficiency in terms of availability and reliability.
- B.9: To fulfil organisational and economical obligations in the field of his undertaken tasks.

Both professionals ensure compliance with the relevant laws, ordinances, directives, operational instructions and the current state of technology.

FprEN 15628:2014 (E)

A detailed description of a Maintenance Supervisor's and Maintenance Engineer's tasks can be found in Annex B, stipulated by the respective member states.

NOTE Tentatively, this professional person can refer to the EQF levels 5 or 6.

4.3 Competences of a Maintenance Manager

Based on the company's objectives, particularly those relating to availability and quality, the Maintenance Manager is responsible for ensuring the required plant availability/plant performance (based on key performance indicators), including the following key competences with the ability:

- C.1: To define and develop maintenance policies according to company strategies.
- C.2: To define processes and tools to support maintenance tasks.
- C.3: To define, manage and develop the organisational model of maintenance.
- C.4: To ensure the levels of availability, reliability, maintainability, supportability, safety and quality required for the entire useful life of assets.
- C.5: To ensure appropriate management and continuous improvement of maintenance.
- C.6: To ensure and control the compliance with maintenance and company budget, the respect of the planned maintenance tasks and the proper condition of assets.
- C.7: To define strategies, policies and criteria for performance management of contractors and for the definition of maintenance materials requirements.

The professional person ensures compliance with the relevant laws, ordinances, directives, operational instructions and the current state of technology.

A detailed description of a maintenance Manager's tasks can be found in Annex C, stipulated by the respective member states.

NOTE Tentatively, this professional person can refer to the EQF levels 6 or 7.

5 Required minimum skills and essential knowledge (profile)

NOTE The competences are not listed in a prioritised importance.

5.1 Required minimum skills and essential knowledge for a Maintenance Technician Specialist

The competences listed under 5.1 result in the minimum required skills and essential knowledge given in Table 1.

Table 1 — Competences, skills and knowledge for a Maintenance Technician Specialist

	Competences	Minimum skills	Essential knowledge
A.1	To perform or ensure the safe execution of the maintenance plans according to business strategies	<ul style="list-style-type: none"> — To perform planned task according to the maintenance plans; — To perform the inspection tasks in order to highlight and prevent the item degradation; — To identify and propose actions or projects to improve reliability, availability and maintainability of assets; — To take care, within the limits of his responsibility, organisation and discipline of operating personnel; — To use the machines, equipment and tools necessary for the execution of maintenance tasks; — To comply with the required procedures, standards and operational methods of work; — To apply the diagnostic techniques (failure analysis and troubleshooting techniques) and the on condition maintenance. 	<ul style="list-style-type: none"> — Maintenance plans, standards and operational methods of work; — Technical documentation and maintenance manuals; — Procedures; — Business job descriptions and roles; — Risk assessment tools/methodologies; — Principles and techniques distinctive of the individual profession; — Principles, logic and parameters of operation and utilisation of asset and item; — Maintenance objectives.