Maintenance - Maintenance within physical asset management - Framework for improving the value of the physical assets through their whole life cycle

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 17485:2021 sisaldab Euroopa standardi EN 17485:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 17485:2021 consists of the English text of the European standard EN 17485:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 02.06.2021.	Date of Availability of the European standard is 02.06.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 03.100.01

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 17485

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English Version

Maintenance - Maintenance within physical asset management - Framework for improving the value of the physical assets through their whole life cycle

Maintenance - Maintenance dans le cadre de la gestion d'actifs physiques - Cadre pour l'amélioration de la valeur des actifs physiques tout au long de leur cycle de vie

Instandhaltung - Instandhaltung im Rahmen des Anlagenmanagements - Methodik zur Verbesserung des physischen Assetwerts während des gesamten Lebenszyklusses

This European Standard was approved by CEN on 26 April 2021.

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 17485:2021) has been prepared by Technical Committee CEN/TC 319 “Maintenance”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by December 2021, and conflicting national standards shall be withdrawn at the latest by December 2021.

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.

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.

Introduction

EN 17485 introduces methods and procedures about maintenance within physical asset management for all the levels and functions of the organizations' management, including corporate planning management, plant management, technical management, production management, financial management, asset management, maintenance management, and quality management.

EN 16646 'Maintenance - Maintenance within physical asset management' was published in December 2014. Since it gives a general framework to allow and determine the role and tasks of maintenance within the larger frame of physical asset management, but does not introduce detail methods and procedures to implement or establish it. The aim of EN 17485 is to close this gap.

This document addresses the principles of physical asset management, which are relevant from the maintenance point of view. This document offers a framework for a systematic management approach. The aims of this document are to:

— create and systematize the link between business, physical asset management and maintenance activities of organizations;

— indicate external and internal influencing factors and their effect on physical asset and maintenance management;

— promote cross-functional cooperation;

— address transparency in organizational decision making;

— address simulation and visualization as effective tools to support decision making;

— address uncertainty management to improve the quality of decision making;

— improve information management as an activity to achieve the above-mentioned objectives;

— address the sustainability of operations.

These targets improve the chances of success in meeting the physical asset management challenges mentioned in EN 16646. It mentions several reasons why physical asset management is nowadays more important than ever before. The same reasons are valid when we evaluate the importance of methods and procedures.

This document introduces methods and approaches to build a bridge between maintenance and the other functions.

Many benefits can be achieved when applying the methodology presented in this document:

— economically more efficient, effective and profitable use of capital: 'turnover of and return on assets';

— more accurate long-term life cycle decisions;

— integrated investment and maintenance planning;

— integrated approach for the production function (assets, operation and maintenance);

— direction given to maintenance strategies and activities;

— improved position for maintenance among the other company functions;

— improved assessment of performance and control;

— enhanced capability to operate within extended enterprise ecosystems (including customers/suppliers);

— enhanced reputation;

— more sustainable use of capital.

Further and maybe even greater benefits are now being found through improved credibility in the eyes of customers, regulators and other stakeholders. Physical asset management also results in much greater engagement and motivation of the workforce, and in more sustainable, continual improvement business processes. Physical asset management builds up the required link between maintenance management and the organizational strategic plan and gives direction to maintenance activities.

The standards EN 16646 and EN 17485 build the bridge between ISO 5500x (Asset management system standards) and the EN maintenance standards. ISO 55001 states that organizations should determine e.g. the organizational context, requirements for the assets, decision criteria, strategic asset management plan and asset management plan (including maintenance). However, it does not describe how to do it. Respectively, maintenance standards often introduce e.g. the concept of the required function or the concept of maintenance strategy, but do not explain how they have been determined. EN 17485 introduces a methodological framework which advises organizations to implement the requirements presented in ISO 55001. By doing this it creates the bridge between the several maintenance standards and ISO 5500x in order to give an applicable starting point to the more detailed documents for the specific sub-functions of maintenance (See Figure 1).

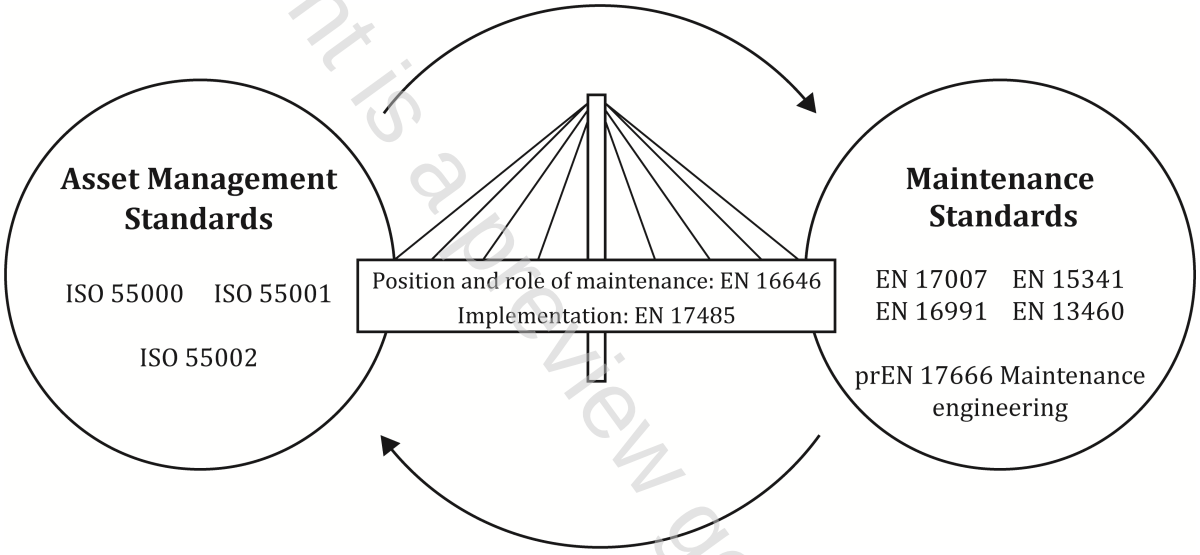

Figure 1 — Links between EN 17485 and other standards

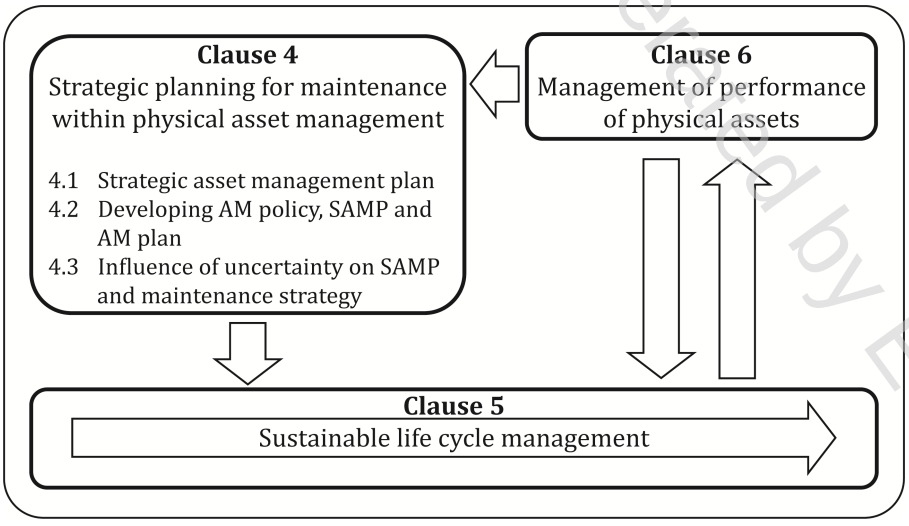

Figure 2 — The structure of the core clauses

In Figure 2, life cycle management covers 3 main life cycles stages (see in detail 5.2):

1. Acquisition stages (6 sub-stages) where the impact of maintenance on asset solutions have been indicated and the first contributions on maintenance strategies and programmes have been created;
2. Utilization stages (3 sub-stages) which are:
   - Utilization of physical assets;
   - Maintenance of physical assets;
   - Replacements including reconditioning, improvements, modifications, modernizations;
3. Disposal stage.

1 Scope

This document specifies methods and procedures when applying physical asset management as a framework to take maintenance into account as an influencing factor within an organizations' strategic and tactical decisions on its physical assets, and when applying physical asset management as a framework to maintenance activities. It also specifies the relationship between organizational strategic plan and the maintenance management system at a methodological level and describes the interrelations between maintenance process and all the other physical asset management processes at a procedural level.

This document is applicable to managing the physical assets of organizations of all sizes especially organizations producing goods and services with physical assets. It introduces methods and procedures for all the levels and functions of the organizations' management such as corporate planning management, plant management, technical management, production management, financial management, asset management, maintenance management, quality management, etc. The focus of the document is at the asset portfolio and system levels and consists of guidance and recommendations. It does not apply to certification, regulatory, or contractual use.

However, if specific documents exist for a particular domain, it is important to also consider those documents.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 13306:2017, *Maintenance — Maintenance terminology*

EN 16646:2014, *Maintenance — Maintenance within physical asset management*

ISO 55000:2014, *Asset management — Overview, principles and terminology*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13306, ISO 55000, EN 16646 and the following apply.

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 https://www.electropedia.org/

3.1.1
asset
item, thing or entity that has potential or actual value to an organization

Note 1 to entry: In this document the term 'asset' means *physical asset* (3.1.2).

Note 2 to entry: A machine or device (e.g. a pump, a gear, a valve) can be called a single asset.

[SOURCE: ISO 55000:2014, 3.2.1, modified – Note 2 to entry has been redrafted and renumbered as Note 1 to entry; Notes 1 and 3 to entry have been deleted]