
Metoda za oceno stanja nepremičnin

Method for condition assessment of immobile constructed assets

Condition-Assessment-Verfahren

Méthode pour l'évaluation de l'état des biens immeubles construits

Ta slovenski standard je istoveten z: FprCEN/TS 17385

ICS:

91.040.01 Stavbe na splošno Buildings in general

kSIST-TS FprCEN/TS 17385:2019 **en,fr,de**

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

FINAL DRAFT
FprCEN/TS 17385

April 2019

ICS

English Version

**Method for condition assessment of immobile constructed
assets**

Méthode pour l'évaluation de l'état des biens
immeubles construits

Condition-Assessment-Verfahren

This draft Technical Specification is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 319.

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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.

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

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FprCEN/TS 17385:2019 (E)**European foreword**

This document (FprCEN/TS 17385:2019) 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 Vote on TS.

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Introduction

The condition of an immobile constructed asset is one of the factors which determine the value of the asset. The asset value is also influenced by the quality of the maintenance performed. As maintenance costs are a significant part of the total cost of ownership of a constructed asset, maintenance actions will be carefully weighed against their benefit.

The method in this standard provides an objective evaluation of the physical condition of an asset and is based on that by NEN for the Dutch market in 2006 and may be used to identify and justify a maintenance plan for the asset.

Condition assessment can be applied to all immobile constructed assets, including infrastructure assets such as buildings and bridges. However, this method is less suitable for assets such as electrical and mechanical equipment. It offers a specific survey methodology to evaluate and record defects, which can be ascertained by any means necessary.

A condition assessment is based on non-destructive surveys to identified quantitative and qualitative aspects of defects in an item and hence determine its condition class. Dismantling, sampling and drilling inspection holes can be included in the assessment. The condition class shall deliver fact-based data to managers, whom should be enabled to distinguish between medium- and long-term maintenance measures in relationship to the desired level of maintenance. Alternative maintenance scenarios can thus be developed and evaluated against the value of the asset, which in turn may lead to a change in asset management policy.

A condition assessment has an explicit technical approach and is one of many influential aspects playing a role in supporting property management. Aspects like safety, compliance with legislation, quality of use, social quality, location, flexibility, breakdown risks may play a significant role too, but are all excluded from the scope of this Technical Specification. Condition assessment is just one aspect for evaluating and supporting organization policy. The organization policy therefore defines how and where the condition class is relevant within the set maintenance plans.

This document has the following objectives:

- to deliver uniformity in the condition assessment of assets, systems and elements, expressed by a condition class. The condition class is a measure of the degradation of the asset and a rating based on objectively registered defects;
- to deliver unity and insight into the sorts of defects. Each defect is weighted against the parameters severity, level of degradation and extent;
- to deliver fact-based input data to enable a priority proposition for maintenance action when weighted against all relevant aspects;
- to deliver a method to set out maintenance plans and evaluating the functioning of maintenance management on different organization levels.

1 Scope

This document describes a method to assess the physical condition of all types of immobile constructed assets in a uniform and objective way. The assessment results in a condition class, which expresses the technical state of maintenance of an asset at any certain moment in time on a six-point scale. It therefore can represent either the deterioration of an asset or part thereof or the physical condition at the time of commissioning. By repeating the assessment at regular intervals it is possible to monitor the degradation of the asset over time.

This document offers a uniform, objective and reproducible method with traceable results. It describes how to achieve the condition class, based on non-destructive observation of defects of any asset or part thereof by using a predefined breakdown structure. The appropriate breakdown structure of an asset is dependent upon the asset concerned and guidance for defining a uniform breakdown structure is given in Annexe C.

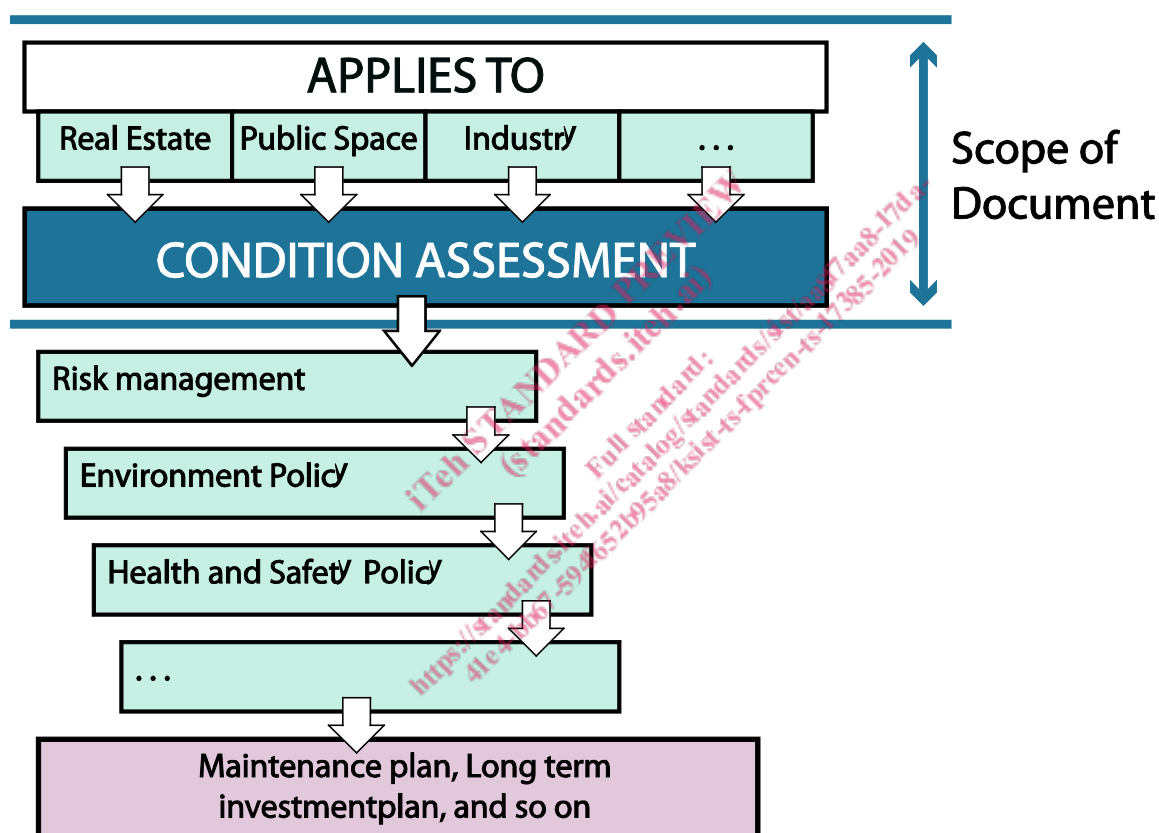


Figure 1 – Applicability of condition assessment

This document as part of an Asset Management plan can be applied to:

- evaluate the actual physical condition of a single asset or portfolio of assets;
- establish a maintenance strategy based on the actual condition of the assets;
- support financial planning;
- encourage and support communication about the actual condition versus the desired condition.

2 Normative references

There are no normative references in this document

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1

asset owner

any organization or representative thereof that is legally entitled party of an asset portfolio

3.2

breakdown structure

hierarchical decomposition of an asset for assessment purposes

Note 1 to entry: the asset breakdown structure is defined so as to enable assessment and recording of results to be performed for logical and easily identified elements.

3.3

component

constituent part of a system which cannot be physically divided into smaller parts without losing its particular function

[SOURCE: adopted, with modification, from IEC 151-11-21 MOD]

3.4

condition

physical state of an object at a particular time compared to the time of commissioning

[SOURCE: EN 16096:2012]

3.5

condition assessment

objective method for determining the physical condition of a constructed asset or a part of it

Note 1 to entry: The condition assessment is based on a survey of defects. In specifying the condition class, three defect parameters are used; severity, level of degradation and extent.

3.6

condition class

categorisation of item condition at a defined point in time

Note 1 to entry: Condition class is the result of three parameters of the defect(s): severity, level of degradation and extent.

Note 2 to entry: A identified level of degradation may continue to deteriorate or remain stable with time.

FprCEN/TS 17385:2019 (E)**3.7****condition survey**

activity, performed either manually or automatically, intended to measure the characteristics and parameters of the physical actual state of an item

3.8**condition survey**

formula which gives the weight of influence according the components in relation with a subsystem

3.9**defect**

any degradation of the part compared to the physical condition at the time of commissioning

Note 1 to entry: The definition is different to the one given by ISO 9000

3.10**degradation**

detrimental change in physical condition of an item

Note 1 to entry: Degradation may lead to a failure (EN 13306).

Note 2 to entry: Degradation considers also changes in the appearance.

Note 3 to entry: Detrimental change is associated with age, use or external causes on an item and may be progressive or static.

3.11**element**

level of sub-division of an item hierarchy of which condition is to be assessed

Note 1 to entry: A system is generally defined with the view of achieving a given objective, for example by performing a definite function.

Note 2 to entry: Components of a system may be natural or man-made material objects, as well as modes of thinking and the results thereof (for example forms of organization, mathematical methods and programming languages).

Note 3 to entry: The system is considered to be separated from the environment and the other external systems by an imaginary surface which cuts the links between them and the system.

Note 4 to entry: The term “system” should be qualified when it is not clear from the context to what it refers, for example control system, calorimetric system, system of units, transmission system.”

3.12**extent of defect**

fraction affected by the defect in relation to the full element

Note 1 to entry: The extent may be expressed as a physical fraction of the element under assessment or as the fraction of the element value compared to that at commissioning..

3.13**immobile constructed asset**

item that is constructed or results from construction operations that during its primary use for its functioning is directly or indirectly fixed to the ground

EXAMPLE Railways are included, train is excluded