EHITUSKONSTRUKTSIOONIDE PROJEKTEERIMISE ALUSED
Olemasolevate konstruktsioonide seisukorra hindamine

Bases for design of structure
Assessment of existing structures

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-ISO 13822:2011 „Ehituskonstruktsioonide projekteerimise alused. Olemasolevate konstruktsioonide seisukorra hindamine“ sisaldab rahvusvahelise standardi ISO 13822:2010 „Bases for design of structures. Assessment of existing structures“ identset ingliskeelset teksti.	This Estonian Standard EVS-ISO 13822:2011 consists of the identical English text of the International Standard ISO 13822:2010 „Bases for design of structures. Assessment of existing structures“.
Standard EVS-ISO 13822:2011 on jõustunud sellekohase teate avaldamisega EVS Teataja 2012. aasta jaanuarikuu numbris.	This standard has been endorsed with the notification published in the official bulletin of the Estonian Centre for Standardisation.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Käsitlusala

Selles rahvusvahelises standardis on esitatud olemasolevate konstruktsioonide (ehitised, sillad, tööstusehitised jne) hindamise üldised nõuded ja protseduurid, lähtudes konstruktsioonide töökindlusest ja varisemise tagajärgedest. See põhineb standardil ISO 2394.

Standard on rakendatav igat liiki olemasolevate konstruktsioonide hindamisel, mis on algselt projekteeritud, arvutatud ja määratletud, põhineb projekteerimise üldtunnustatud põhimõtetel ja/või normide kohaselt, kui ka konstruktsioonidele, mis on ehitatud hea tava kohaselt ajaloolise kogemuse ning aktsepteeritud erialapraktika alusel. Hindamist võib algatada järgnevatel asjaoludel:

— kasutamisotstarbe planeeritav muutus või projektijärgse kasutusea pikendamine;

— töökindluse kontrollimine (näiteks maavärinate või liiklusmõju suurenemise korral), kui seda nõuavad ametkonnad, kindlustusettevõtted, omanikud jne;

— konstruktsiooni kahjustumine ajast tulenevate tegurite toimel (näiteks korrosioon, väsimus);

— konstruktsiooni kahjustus erakorraliste koormuste toimel (vaata ISO 2394).

See rahvusvaheline standard on rakendatav ka kultuuripärandite hulka kuuluvatele ehitistele, võttes arvesse lisas I esitatud tingimusi.

See rahvusvaheline standard on rakendatav olemasolevatele konstruktsioonidele sõltumata ehitusmaterjalist, kuigi võivad olla vajalikud teatud spetsiifilised lähenemised olenevalt materjalitüübist, nagu näiteks betoon, teras, puit, tellis jne.

Selles rahvusvahelises standardis on esitatud hindamise põhimõtted tulenevalt koormuste- ja keskkonnamõjudest. Erakorraliste koormuste mõjude, nagu tulekahju ja maavärin, puhul on vajalikud täiendavad spetsiifilised hindamispõhimõtted.

MÄRKUS Tulepüsivus nõuab erinevaid omadusi, võrreldes ehitiste ohutuse ja terviklikkusega. Tulekahjurisk võib tekkida ka kasutusotstarbe muutumisel. Maavärina ohu korral on erinõuded vajalikud – selleks arvestada dünaamilise koormuse ja ehitise käitumisega.

Antud rahvusvaheline standard on koostatud eesmärgiga olla aluseks rahvuslike standardite või tegevusjuhiste ettevalmistamisel, mis oleks vastavuses käibeloleva projekteerimistava ja majandustingimustega.

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

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Introduction

The continued use of existing structures is of great importance because the built environment is a huge economic and political asset, growing larger every year. The assessment of existing structures is now a major engineering task. The structural engineer is increasingly called upon to devise ways for extending the life of structures whilst observing tight cost constraints. The establishment of principles for the assessment of existing structures is required because it is based on an approach that is substantially different from design of new structures and requires knowledge beyond the scope of design codes. This document is intended not only as a statement of principals and procedures for the assessment of existing structures but also as a guide for use by structural engineers and clients. Engineers can apply specific methods for assessment in order to save structures and to reduce a client's expenditure. The ultimate goal is to limit construction intervention to a strict minimum, a goal that is clearly in agreement with the principles of sustainable development.

The basis for the reliability assessment is contained in the performance requirements for safety and serviceability of ISO 2394. Economic, social and sustainability considerations, however, result in a greater differentiation in structural reliability for the assessment of existing structures than for the design of new structures.

Bases for design of structures — Assessment of existing structures

1 Scope

This International Standard provides general requirements and procedures for the assessment of existing structures (buildings, bridges, industrial structures, etc.) based on the principles of structural reliability and consequences of failure. It is based on ISO 2394.

It is applicable to the assessment of any type of existing structure that was originally designed, analysed and specified based on accepted engineering principles and/or design rules, as well as structures constructed on the basis of good workmanship, historic experience and accepted professional practice. The assessment can be initiated under the following circumstances:

— an anticipated change in use or extension of design working life;

— a reliability check (e.g. for earthquakes, increased traffic actions) as required by authorities, insurance companies, owners, etc.;

— structural deterioration due to time-dependent actions (e.g. corrosion, fatigue);

— structural damage by accidental actions (see ISO 2394).

This International Standard is also applicable to heritage structures provided additional considerations shown in Annex I are taken into account.

This International Standard is applicable to existing structures of any material, although specific adaptation can be required depending on the type of material, such as concrete, steel, timber, masonry, etc.

This International Standard provides principles regarding actions and environmental influences. Further detailed considerations are necessary for accidental actions such as fire and earthquake.

NOTE Fire resistance requires properties different from those for structural safety and integrity. Also fire hazards can be created by change in use. Special requirements are necessary for seismic hazards taking the dynamic action and structural response into account.

This International Standard is intended to serve as a basis for preparing national standards or codes of practice in accordance with current engineering practice and the economic conditions.

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.

ISO 2394:1998, *General principles on reliability for structures*