EUROPEAN STANDARD

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EUROPÄISCHE NORM

DRAFT
prEN 15978

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Will supersede EN 15978:2011

English Version

Sustainability of construction works - Assessment of environmental performance of buildings - Requirements and guidance

Contribution des ouvrages de construction au développement durable - Évaluation de la performance environnementale des bâtiments - Exigences et recommandations

Nachhaltigkeit von Bauwerken - Bewertung der Umweltleistung von Gebäuden - Anforderungen und Anleitungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 350.

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.

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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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European foreword

This document (prEN 15978:2024) has been prepared by Technical Committee CEN/TC 350 “Sustainability of construction works”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 15978:2011.

In relation to EN 15978:2011, the following changes have been made:

— Environmental impact indicators have been aligned with EN 15804+A2;

— prEN 15978 has been aligned with EN 15643 regarding modules A0, B8 and D1 and D2;

— Use of baseline and future prospect scenarios have been described;

— Requirements and recommendations have been provided for different design stages;

— Existing and forthcoming national and EU regulations have been taken into account in the requirements written in prEN 15978, e.g. decarbonation of energy production;

— System boundaries of module B7 “Operational Water Use” (B7.1, B7.2 and B7.3) have been provided in a detailed way similar to module B6 “Operational Energy Use” (B6.1, B6.2 and B6.3);

— The assignment of activities between B4 (Replacement) and B5 (Refurbishment) has been clarified;

— Two approaches for the reporting of building generated energy have been described in Clause 7 and Annex A to improve transparency:

  — Approach A as in EN 15978:2011 and

  — Approach B where a proportion of the embodied impacts of the energy production appliances that export energy are outside the system boundary of the building together with their operational impacts and these are reported as additional information

— Impacts resulting from the user’s activities may be declared optionally in Module B8, including impacts of commuting of users.

— To ensure that all on-site activities are considered, a separate sub-module A5.1 has been introduced to account for deconstruction of existing construction works with the benefits and loads beyond the system boundary in module D1.

— Synergies between circularity and the environmental performance of buildings are included in the normative text and in Annex C in prEN 15978.

— Demand for information concerning environmental impacts and aspects at the local environment level is in the normative text in prEN 15978.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

Introduction

The purpose of this document is to provide calculation rules for the assessment of the environmental performance of new and existing buildings.

This document is part of a suite of European Standards, Technical Specifications and Technical Reports for the assessment of the environmental performance of buildings that together support quantification of the contribution of the assessed building to sustainable construction and sustainable development.

The environmental performance of a building is only one aspect of its sustainability. The social and economic performance of the building are also aspects of sustainability that should be assessed as part of a sustainability assessment. These are described in the framework standard (EN 15643).

NOTE 1 The environmental assessment at building level requires information from products and services (EN 15804:2012+A2:2019).

The evaluation of technical and functional performance is beyond the scope of this document. Technical and functional characteristics are taken into account here by reference to the functional equivalent, which also forms a basis for comparison of the results of assessments.

This document is intended to support the decision-making process and documentation of the assessment of the environmental performance of a building. The assessment results are based on scenarios. that affect the environmental performance of the building, such scenarios are uncertain, for example, there may be new processes and/or technologies or changes in operation, and could affect the assessment result. Figure 1 illustrates how the assessment of the environmental performance takes place within the concept of the sustainability assessment of buildings.

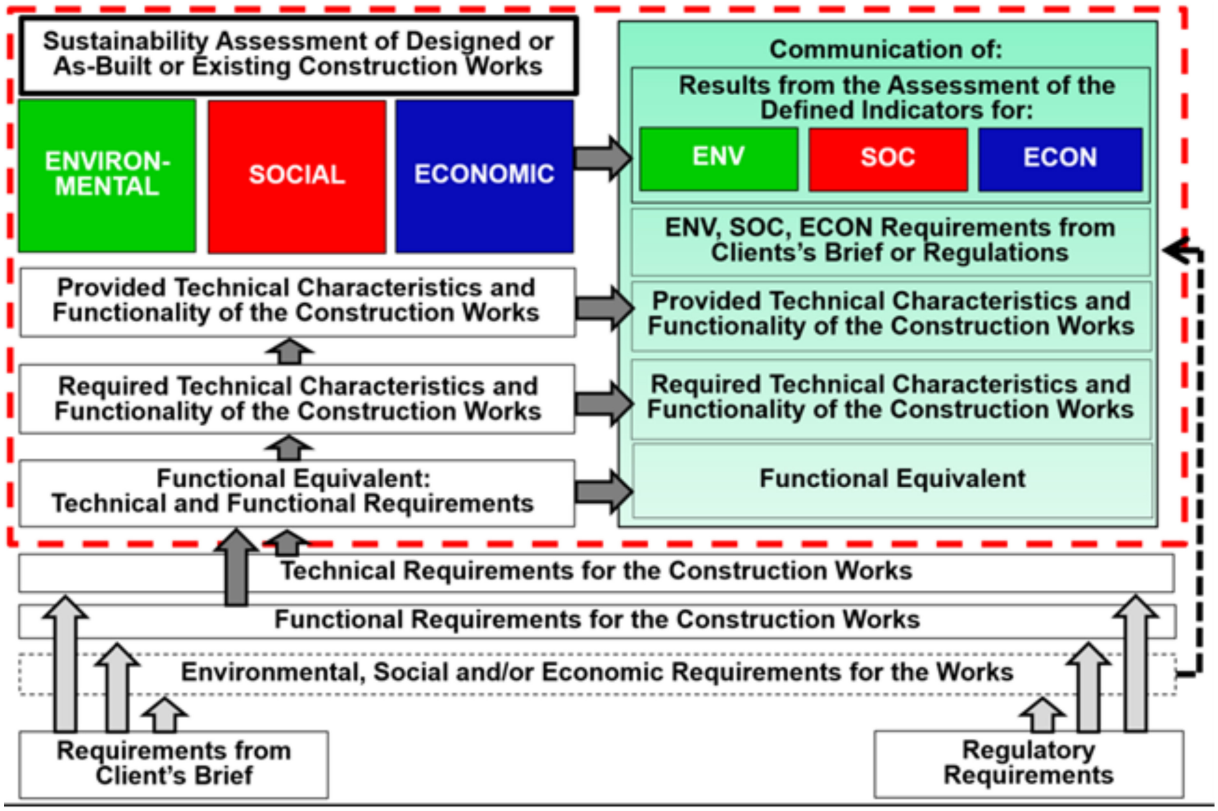

Figure 1 — Concept of sustainability assessment of buildings

NOTE 2 The outer box with the red dotted line represents the area standardized by CEN/TC 350.

In this document, the assessment method for the quantitative evaluation of the environmental performance of the building is based on a life cycle approach. The general requirements for sustainability assessment of buildings are described in EN 15643 (the general framework standard). Other standards developed by CEN/TC 350 in this area, and how they are related to this European Standard, are shown in Figure 2

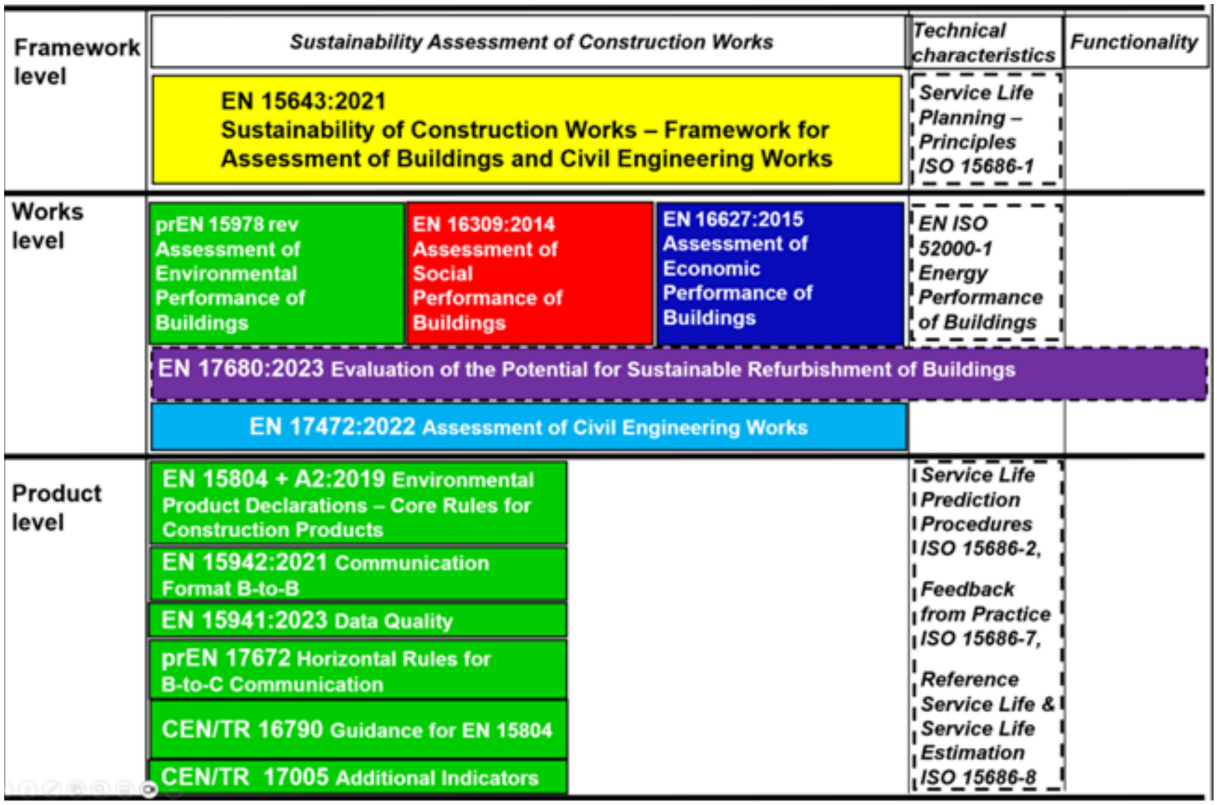

Figure 2 — Standards of CEN/TC 350

NOTE 3 This document supports the assessment of buildings within the Level(s) Framework (see Bibliography) for macro objectives 1, (Greenhouse gas emissions along a building's life cycle), 2 (Resource efficient and circular material life cycles) and 3 (Efficient use of water resources). Other standards from CEN/TC350 can also support Level(s) macro Objectives 4 (Healthy and comfortable spaces) and 5 (Adaptation and resilience to climate change), EN16309, and macro objective 6 (Optimized life cycle cost and value), EN 16627.

NOTE 4 Level(s), is a common European approach to assess and report on the sustainability of buildings. Using existing standards, the voluntary Level(s) framework provides a common language for building sustainability, which other initiatives can also use. More information can be found at Level(s) (europa.eu).

Buildings and constructed assets have an impact on sustainable development. Therefore, the internationally recognized Sustainable Development Goals (SDGs) formulated by the United Nations also apply to the construction and real estate industry. As part of targets towards sustainable cities and communities formulated in SDG 11, the construction of sustainable and resilient buildings is also required, as is an efficient use of natural resource and a substantial reduction of waste generation through prevention, reduction, and reuse formulated in SDG12. These goals are closely interrelated with the other SDGs. Both providers and buyers of real estate need clear characteristics and assessment criteria in order to evaluate, assess and communicate the contribution of buildings to sustainable development.

Assessments based on the requirements of this document can be used to demonstrate whether the development and use of an assessed building has the potential to contribute to United Nations SDG Goals 11, 12, and 13, and other SDGs such as 6, 7, and 15 (Figure 3)

Figure 3 — Sustainable Development Goals (SDGs) formulated by the United Nations, particularly relevant to the environmental performance of buildings and constructed assets

NOTE 5 EN ISO 52000-1, in common with all EPB standards, provides a certain flexibility with regard to the methods, the required input data and references to other EPB standards. For the use of EN52000-1, informative default choices are provided in EN ISO 52000-1:2017, Annex B.

NOTE 6 In the case EN ISO 52000-1 is used in the context of national or regional legal requirements, mandatory choices can be given at national or regional level for such specific applications.