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Sustainability in buildings and civil engineering works – A review of terminology (ISO/TR 21932:2013, IDT)

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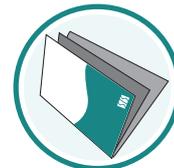
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 17, *Sustainability in buildings and civil engineering works*.

Introduction

Communication is important in the implementation and operation of the concept of sustainable development related to building and civil engineering. In the interest of common understanding and standardization, consistent word usage is encouraged to help eliminate the major barrier to effective technical communication.

This Technical Report is the result of the terminography and other terminology work that was undertaken within ISO/TC 59 to establish consistent terminology for concepts related to the subject field of sustainability in buildings and civil engineering works. Such standardization work was primarily undertaken by Subcommittee 17, *Sustainability in buildings and civil engineering works*, and more specifically, SC 17/Working Group 1, *General principles and terminology*.

NOTE 1 ISO 1087-1 defines the concepts of *terminology*, *terminology work*, and *terminography* as follows:

- terminology
set of designations belonging to one special language.
- terminology work
work concerned with the systematic collection, description, processing, and presentation of concepts and their designations
- terminography
part of terminology work concerned with the recording and presentation of terminological data.

NOTE 2 The work items undertaken on different subjects of standardization within ISO/TC 59/SC 17 and its working groups include both buildings and civil engineering works, collectively referred to using the designation *construction works*.

In 2005, in initiating their terminology work, SC 17 members participated in a joint ISO/TC 59 meeting with members of other ISO/TC 59 SCs to discuss the common concerns and issues related to the preparation and use of terminology within a number of ISO/TC 59 subcommittees. This included individuals also involved in the parallel standardization and terminology work going on within the European Committee for Standardization (CEN), under the technical committee CEN/TC 350, *Sustainability of Construction Works* (formerly CEN BT/WG 174, *Integrated Environmental Performance of Buildings*). In addition to the CEN/TC 350 representation, the ISO/TC 59 subcommittees represented at the joint meeting were SC 2, *Terminology and harmonization of languages*, SC 14, *Design life*, SC 15, *Performance description of houses* (formerly *Performance criteria for single family attached and detached dwellings*), and SC 17, *Sustainability in buildings and civil engineering works* (formerly *Sustainability in building construction*).

Standardization in terminology work had already been undertaken by several of these different committees on concept harmonization to clarify, by eliminating minor differences, the various terms and definitions for the concepts related to both service life planning of construction works and the contribution of construction works to sustainability. Concerns were raised about conflicts arising as a result of the significant number of standardization activities underway in the related subject fields of sustainability and service life planning. It was agreed that there were many challenges in implementing and/or adapting the language attributed to the common general concepts related to buildings and civil engineering works into these specialized subject fields, and to do so in a consistent and concise manner.

An ISO/TC 59 Ad hoc Group (AHG) on Terminology was subsequently established and directed to maintain close liaison on terminology work occurring across the participating committees and to work to help resolve different terminology requirements within the different subcommittees of ISO/TC 59 and CEN/TC 350. Also, it was acknowledged and agreed that the main terminology document on general concepts regarding buildings and civil engineering works, ISO 6707-1, which was developed by ISO/TC 59/SC 2, would be used as the primary reference vocabulary for any of the work on terminology undertaken within all the committees, including CEN/TC 350.

Individual representatives from the ISO/TC 59/Subcommittees SC 2, SC 14, SC 15, SC 17, and the CEN/TC 350 were identified as members of the AHG to provide input and act as liaison on behalf of the various committees. A database of terms and definitions was developed as an initial working document, which was based on information submitted from the four TC 59 SCs involved as well as from the CEN/TC 350. The working list of terms and definitions generally included both a mix of standardized ISO terms and definitions, as well as definitions that were contained in working drafts within the various committees. A number of the AHG experts were involved with more than one of the targeted committees, which proved to be extremely beneficial, as it provided continuity within the discussions from meeting to meeting and committee to committee.

In 2008, a final report from the AHG was presented to ISO/TC 59 that contained a list of recommendations typically targeting one or more of the specific committees and specific definitions for individual concepts.

NOTE 3 Additional information on the outcomes of the work of the ISO/TC 59 AHG on Terminology, including its final report and recommendations, is available from the ISO/TC 59 Secretariat.

Over the same time period (2005 to 2008), and subsequently between 2008 and the present, standardization work had (has) taken place within the various working groups of SC 17 (and CEN/TC 350). Within SC 17, this work resulted in the formal development and standardization of terms and definitions for concepts specific to a number of individual standards, including those related to general principles (ISO 15392), sustainability indicators for buildings (ISO 21929-1), environmental product declarations (ISO 21930), and assessment of the environmental performance of buildings (ISO 21931-1).

This Technical Report does not contain a complete list of terms of relevance to the thematic field, but compiles a complete set of the specific terms and definitions of concepts that have been applied and standardized in the documents developed to date under ISO/TC 59/SC 17 related to sustainability in buildings and other types of construction works.

This Technical Report presents a mix of terms and definitions, some of which are repeated from other ISO publications, while others are those that have been derived from ISO standards on environmental management and environmental life cycle assessment. Derivations have been performed carefully by the different committees in order to maintain the original intention, but to enable interpretation to the context of sustainability and sustainable development related to buildings and civil engineering works.

The compilation of terms and definitions included in [Clause 3](#) of this Technical Report are for concepts that have been standardized and/or applied through publication of individual ISO standards within ISO/TC 59/SC 17. Other terms and definitions described in the informative Annexes include both those considered as still being a work in progress within SC 17 ([Annex B](#)), as well as a set of terms and definitions that have been established within CEN/TC 350 ([Annex C](#)). The gradual evolution of all of these concepts inevitably means that the “sustainability in buildings and civil engineering works” terminology will continue to develop and that therefore this document may be subject to regular revision and updating. As a resumé of terms and definitions in this domain, this Technical Report provides a resource for any future standardization in a general vocabulary. It is expected that the information contained within this Technical Report may be given further consideration within ISO/TC 59/SC 2, *Terminology and harmonization of languages* for possible inclusion in a part of the ISO 6707 series.

Sustainability in buildings and civil engineering works — A review of terminology

1 Scope

This Technical Report provides a compilation of terms and definitions of concepts related to both the construction and use of a building or civil engineering works, and the effect of such construction works on sustainability and sustainable development, as applied in the documents of ISO/TC 59/SC 17, *Sustainability in buildings and civil engineering works*.

The terms and definitions of concepts listed in [Clause 3](#) reflect standardized terminology relevant to construction works and the contribution of buildings and civil engineering works to sustainability and sustainable development.

The terms and definitions listed in [Clause 3](#) include those that represent concepts that have been standardized and/or applied within SC 17, which includes a number of concepts that have been originally developed elsewhere within the ISO technical structure. A cross reference is included after each of the definitions to the specific SC 17 document in which the concept is defined, as well as to the International Standard(s) from where the definition originates, where applicable.

NOTE 1 [Annex A](#) contains information on a representative model of the methodology used in the development of some of the terminological data.

NOTE 2 [Annex B](#) contains a number of examples of term designations and possible wordings of related definitions that have been discussed during the ongoing terminology work within SC 17.

NOTE 3 [Annex C](#) contains a listing of terms and definitions for related concepts being applied by the CEN/TC 350 on Sustainability of Construction Works, many of which were specifically considered and elaborated within the work of the ISO/TC 59 Ad hoc Group on Terminology.

NOTE 4 [Annex D](#) reproduces information from the informative Annex B of ISO 15392, and provides a discussion around the terminology used by different actors involved to designate various concepts related to products of the building and construction sector.

2 Vocabulary structure

The terms are generally presented alphabetically except that, in some cases, they are arranged and numbered within generic relations to allow ready comparison of related concepts. Where a given term designates more than one concept, each concept has been treated in a separate entry.

As recommended in ISO 10241-1, in a definition, example, or note, reference to another listed entry (concept) is highlighted in italics and followed by the entry number in brackets, when it is first mentioned. In the case of those terms and definitions for concepts that originate from other referenced sources and are specifically listed within [Clause 3](#), the entry numbers cross-referenced coincide with the term entries in this document and not the source document. In the case of cross-referencing those terms and definitions for concepts that originate from other referenced sources, but are not specifically listed within [Clause 3](#), both the source document and related entry numbers within that source are cross-referenced.

NOTE 1 With the mixed structure used in [Clause 3](#), the term-entry numbering does not exactly follow the format recommended in the ISO/IEC Directives, Part 2 or ISO 10241-1.

NOTE 2 Cross-references within the terminological data in [Clause 3](#) to terms and definitions contained in other referenced ISO documents is in addition to any references shown in the original SC 17 documents and follows the format recommended in Clause 6.4.7.(b) of ISO 10241-1 regarding references to terms and symbols in definitions.

Where a different preferred national equivalent designation exists and has been identified, this has been given in bold face following the preferred term and annotated by the country code (i.e. US). A term following the preferred term not given in boldface type is a non-preferred synonym.

For general terms and definitions related to buildings and civil engineering works, reference should also be made to ISO 6707-1.

For general terms and definitions related to design life and service life planning for buildings and civil engineering works, reference should also be made to the ISO 15686 series.

For general terms and definitions related to environmental management systems and life cycle assessment, reference should also be made to ISO 14050.

NOTE 3 Some of the terms and definitions are derived or taken from non-ISO publications, such as the WBCSD (World Business Council for Sustainable Development) Brundtland Report.

NOTE 4 In [Clause 3](#), for a number of the terms and definitions shown as being contained in ISO 21929-1, the terminological data are slightly modified from that shown in the published version. This has been done to correct unintended changes/errors in the text that had occurred in the published document. This specifically affects the data for the concepts of *accessibility* (see [3.2](#)), *areas of protection* (see [3.6](#)), *built environment* (see [3.8](#)), *functional performance requirement* (see [3.16](#)), *impact category* (see [3.22](#)), *indicator* (see [3.23.1.2](#)), *indoor air quality* (see [3.24](#)), *life cycle* (see [3.27.1.2](#)), *maintainability* (see [3.28](#)), *performance* (see [3.29.1](#)), and *serviceability* (see [3.37.1](#)).

NOTE 5 An alphabetical index is provided showing term entries listed in [Clause 3](#), as well as those in [Annexes B](#) and [C](#), in both the normal and inverted form.

3 Terms relating to sustainability in buildings and civil engineering works

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

3.1 access to services

availability and accessibility of services outside the *building* ([3.7](#))

Note 1 to entry: Services can include public transportation, parking, entertainment, health-care, water and energy supply, etc.

[SOURCE: ISO 15392:2008, 3.1; ISO 21929-1:2011, 3.1]

3.2 accessibility

ability of a *space* (ISO 6707-1:2004, 4.1.1) to be entered with ease

Note 1 to entry: Requirements for accessibility depend on the *users'* (ISO 6707-1:2004, 8.1) needs, as well as on activities during the *life cycle* ([3.27.1.1](#)) ([3.27.1.2](#)) of the *building* ([3.7](#)), e.g. *construction work* ([3.11](#)), *maintenance* (ISO 6707-1:2004, 7.1.40), and deconstruction.

Note 2 to entry: "Barrier-free use of buildings" would relate to requirements for accessibility related to the needs of users with reduced mobility.

Note 3 to entry: Adapted from ISO 6707-1:2004, 9.3.80, modified — Notes 1 and 2 to entry related to requirements for accessibility have been added.

[SOURCE: ISO 15392:2008, 3.2; ISO 21929-1:2011, 3.2]

3.3.1 acoustic comfort

reaction of occupants to the indoor acoustical environment, described in terms of sound pressure level and audibility

[SOURCE: ISO 16813:2006, 3.1; ISO 21929-1:2011, 3.3]

3.3.2

thermal comfort

condition of mind derived from satisfaction with the thermal environment

Note 1 to entry: Thermal comfort is the combined thermal effect of environmental parameters including air temperature, vapour pressure, air velocity, mean radiant temperature (fixed factors), and clothing and activity level of occupants (variable factors).

[SOURCE: ISO 16813:2006, 3.28; ISO 21929-1:2011, 3.35]

3.3.3

visual comfort

occupant satisfaction with the indoor visual environment, described in terms of illumination level, glare, visibility, reflection, and psychological and physiological content with natural and artificial illumination

[SOURCE: ISO 16813:2006, 3.29; ISO 21929-1:2011, 3.36]

3.4

adaptability

ability to be changed or modified to make suitable for a particular use

[SOURCE: ISO 6707-1:2004, 9.3.79; ISO 21929-1:2011, 3.3]

3.5

areas of concern

areas of protection

protection area, sing

aspect(s) of the economy, the environment, or the society that can be impacted by *construction works* (3.12), goods, or services

EXAMPLE Asset value, cultural heritage, resources, human health and comfort, social infrastructure.

[SOURCE: ISO 15392:2008, 3.3]

3.6

areas of protection

protection area

issue of concern

aspect(s) of the economy, the environment, or the society that can be impacted by *construction works* (3.12), goods, or services

EXAMPLE Asset value, cultural heritage, resources, human health and comfort, social infrastructure.

[SOURCE: ISO 15392:2008, 3.3, modified — The preferred term specified to designate this concept has been changed to ‘areas of protection’ and the admitted term, ‘issue of concern’, is used in place of ‘areas of concern’; ISO 21929-1:2011, 3.5]

3.7

building

construction works (3.12) that has the provision of shelter for its occupants or contents as one of its main purposes; usually partially or totally enclosed and designed to stand permanently in one place

[SOURCE: ISO 6707-1:2004, 3.1.3; ISO 15392:2008, 3.4; ISO 21929-1:2011, 3.6]

3.8

built environment

collection of man-made or induced physical objects located in a particular area or region

Note 1 to entry: When treated as a whole, the built environment typically is taken to include *buildings* (3.7), external works (landscaped areas), *infrastructure* (3.10), and other *construction works* (3.12) within the area under consideration.

Note 2 to entry: Derived from the definition of “environment” in ISO 6707-1.