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Buildings and civil engineering works — Vocabulary —

Part 3: Sustainability terms

Batiments et ouvrages de genie civil — Vocabulaire —

Partie 3: Termes relatifs a la durabilite

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Foreword

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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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 2, *Terminology and harmonization of languages*.

A list of all parts in the ISO 6707 series can be found on the ISO website.

Introduction

With the growth in the number of international construction projects and the development of the international market in construction products, there is an increasing need for agreement on a common language.

ISO 6707-1 defines general terms related to buildings and civil engineering works. This document establishes preferred terms and concepts related to sustainability for buildings and other types of construction works. Communication is important to 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.

The preparation of this document was undertaken under the administrative direction of ISO/TC 59/SC 2, but the development work was undertaken by a joint working group of ISO/TC 59/SC 2 and ISO/TC 59/SC 17.

This document 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 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.

This document does not contain a complete list of terms of relevance to the thematic field, but focuses on concepts that have been standardized and/or applied through publication of individual standards within ISO/TC 59/SC 17 and on terms and definitions of concepts frequently encountered in the literature related to sustainability in buildings and other types of construction works.

Attention has been paid to how the terms selected have been used in ISO standards and European standards so as to maintain the original intention.

ISO/TR 21932 was one of the principle sources employed. Although informative in nature, it contains terms and definitions of concepts that have been applied and standardized in the documents developed to date under ISO/TC 59/SC 17, as well as other terms and definitions that constitute work in progress within SC 17 or established within CEN/TC 350 (given in Annexes B and C).

A related vocabulary on terms under ISO/TC 268: ISO 37102 is expected to focus on concepts that have been standardized and/or applied through publications within ISO/TC 268.

This document is intended to be used in conjunction with ISO 6707-1.

Buildings and civil engineering works — Vocabulary —

Part 3: Sustainability terms

1 Scope

This document establishes preferred terms and definitions for concepts applicable to sustainability and sustainable development related to buildings and civil engineering works.

NOTE It focuses on concepts that have been standardized and/or applied through publication of individual International Standards within ISO/TC 59/SC 17 and on terms and definitions of concepts frequently encountered in the literature of buildings and other types of construction works that relate to sustainable development.

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.

ISO 6707-1, *Buildings and civil engineering works — Vocabulary — Part 1: General terms*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6707-1 and the following 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

NOTE Where terms in definitions are defined in this document, the relevant terms are in *italics*, and the term number is given after the relevant term. Where terms in definitions are defined in ISO 6707-1, the terms are also in *italics* but no term number is given.

3.1 Base terms

3.1.1
sustainable development
development that meets the environmental, social and economic needs of the present without compromising the ability of future generations to meet their own needs

[SOURCE: ISO Guide 82:2014, 3.2, modified – Note 1 to entry has been removed.]

3.1.2
sustainability
state of the global system, including environmental, social and economic aspects in which the needs of the present are met without compromising the ability of future generations to meet their own needs

Note 1 to entry: The environmental, social and economic aspects interact and are interdependent and are often referred to as the three dimensions of sustainability.

Note 2 to entry: Sustainability is the goal of *sustainable development* (3.1.1).

[SOURCE: ISO Guide 82:2014, 3.1]

3.1.3
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*, *external works* and other *construction works*.

[SOURCE: ISO 15392:2008, 3.5, modified – In Note 1 to entry, after external works "(landscaped areas), infrastructure" and "within the area under consideration" at the end has been deleted. Note 2 to entry has also been deleted.]

3.1.4
technosphere
sphere or realm of human technological activity which results in a technologically modified *environment*

Note 1 to entry: Primary resources are acquired or extracted from the environment/nature (the geosphere or biosphere) into the technosphere and emissions to air, water or land are released from the technosphere into the environment.

[SOURCE: ISO 21930:2017, 3.8.4]

3.1.5
process
set of interrelated or interacting activities that use inputs to deliver an intended result

Note 1 to entry: Inputs to a process are generally the outputs of other processes and outputs of a process are generally the inputs to other processes.

Note 2 to entry: The series of activities are typically performed to achieve a desired outcome.

[SOURCE: ISO 9000:2015, 3.4.1, modified – Notes to entry other than Note 2 have been removed. Note 2 to entry is retained as Note 1 to entry; new Note 2 to entry has been added.]

3.1.6
impact
change that may be adverse or beneficial

[SOURCE: ISO 15392:2008, 3.13]

3.2 Entities

3.2.1
solar farm
large-scale installation that is used to provide *solar energy* (3.5.20) to generate electricity

Note 1 to entry: Solar farms often cover large areas of land and therefore are usually developed in rural locations.

3.2.2
tidal barrage
structure that captures and releases tidal water moving in and out of a bay or river

3.2.3
wind turbine
device that converts kinetic *energy* from the wind into electricity

3.2.4
wind farm
group of *wind turbines* (3.2.3) in the same location used to produce *energy*

3.3 Products, components

3.3.1
product
tangible outcome of a *process* (3.1.5)

3.3.2
co-product
any of one or more *products* (3.3.1) from the same *unit process* (3.4.8), but which is not the object of the assessment

Note 1 to entry: Co-product and product have the same status and are used for identification of several distinguishable flows of products from the same unit process. Where one of two or more co-products is the object of assessment of the *EPD* (3.4.9), this is normally considered the product, and the other output(s) the co-product(s). Where one of the co-products is an input to a *process*, this is normally considered as a product input. From co-product and product, *waste* (3.5.26) is the only output to be distinguished as a non-product.

[SOURCE: ISO 21930:2017, 3.4.6, modified – Note 2 has been deleted.]

3.3.3
by-product
co-product (3.3.2) from a *process* (3.1.5) that is incidental or not intentionally produced and which cannot be avoided

Note 1 to entry: *Wastes* (3.5.26) are not by-products.

[SOURCE: ISO 21930:2017, 3.4.7]

3.3.4
heat pump
device that transfers heat from one space to another

3.3.5
air-source heat pump
heat pump (3.3.4) that extracts heat from the outside air in order to provide space and water heating for a *building*

3.3.6
ground source heat pump
heat pump (3.3.4) that extracts heat from the ground in order to provide space and water heating for a *building*

3.3.7
closed loop ground source heat pump
ground source heat pump (3.3.6) that has a *heat exchanger* (3.3.10) between the refrigerant loop and the water loop, and pumps in both loops

Note 1 to entry: Most ground source heat pumps have two loops on the ground side: the primary refrigerant loop is contained in the appliance cabinet where it exchanges heat with a secondary water loop that is buried underground.

3.3.8
photovoltaic array
two or more photovoltaic modules at one location that together provide a photovoltaic *solar energy* (3.5.20) system

3.3.9
solar collector
device in which solar radiation is absorbed and converted to heat

3.3.10
heat exchanger
device built for efficient heat transfer from one medium to another

[SOURCE: European Economic and Social Committee. *Let's speak sustainable construction — Multilingual glossary* EN/FR/DE/ES, 2014]

3.3.11
biogas digester
air-tight tank in which *biomass* (3.5.9) is transformed into methane

3.3.12
condensing boiler
oil or gas boiler designed to make use of the latent heat released by condensation of water vapour in the combustion *flue products* (3.3.1)

[SOURCE: ISO 13675:2013, 3.1.4, modified – Notes have been removed.]

3.3.13
biomass boiler
boiler that burns logs, pellets or chips and is connected to a central heating and *hot water system*

3.3.14
wood-burning stove
heating appliance capable of burning wood *fuel* and wood-based *biomass* (3.5.9) fuel that consists of a metallic closed fire chamber connected by ventilating *pipes* to a *chimney* or *flue*

3.3.15
compact fluorescent lamp
CFL
energy saving fluorescent lamp with a *tube* that is curved or folded to fit into the space of an incandescent bulb, together with a compact electronic ballast in its base

3.3.16
light-emitting diode lamp
LED lamp
semiconductor-based light emitting source

[SOURCE: ISO 10650:2015, 3.2, modified – "lamps" was changed to "source".]

3.3.17
light pipe
tube lined with reflective material to channel natural light into *buildings*

3.3.18
fuel cell
electrochemical device that generates electricity by the conversion of *fuel* and an oxidant without any physical or chemical consumption of the electrodes or electrolyte

[SOURCE: ISO 23273:2013, 3.5]

3.3.19
smart meter
energy meter that can both send and receive information

[SOURCE: PAS 180:2014, 4.1.4, modified – "using an external electronic communications network" from end of definition has been omitted.]

3.3.20
smart grid
electric grid system, which is characterized by the use of communication networks and the control of grid components and loads

[SOURCE: ISO/IEC/TR 27019:2013, 3.15]

3.4 Activities, processes, methods, persons

3.4.1
environmental assessment
process to identify objectively the *environmental aspects* (3.7.13) and to determine the consequences of past, current and expected future activities

[SOURCE: ISO 14015:2001, 2.7, modified – changed the term from "environmental assessment of sites and organizations"; deleted "to identify the environmental issues", "business", "of sites and organisations" from the definition; deleted Note 1 to entry.]

3.4.2
environmental management system
part of the management system used to manage *environmental aspects* (3.7.13), fulfil compliance obligations and address risks and opportunities

[SOURCE: ISO 14001:2015, 3.1.2]

3.4.3
environmental label
environmental declaration

claim which indicates the *environmental aspects* (3.7.13) of a *product* (3.3.1) or service

Note 1 to entry: An environmental label or declaration may take the form of a statement, symbol or graphic on a product or package label, in product literature, in technical bulletins, in advertising or in publicity, amongst other things.

[SOURCE: ISO 14020:2000, 2.1]

3.4.4
environmental protection plan
plan providing an assessment of the environmental risks, the measures to be taken to minimize risks, the point when corrective action will be taken, the type of action to be taken, and identifying those responsible for monitoring and for taking action

[SOURCE: ISO 11074:2015, 6.1.7, modified — "associated with remediation," has been omitted.]

3.4.5
product system
collection of *unit processes* (3.4.8) with elementary and product flows, performing one or more defined functions, and which models the *life cycle* (3.6.13) of a *product* (3.3.1)

Note 1 to entry: The term product flows is defined in ISO 14040:2016, 3.27.

[SOURCE: ISO 14040:2006, 3.28]

3.4.6
downstream process
process (3.1.5) that is carried out after the designated process in the stream of relevant processes

[SOURCE: ISO 21931-1:2010, 3.2]

3.4.7
upstream process
process (3.1.5) that is carried out before the designated process in the stream of relevant processes

3.4.8
unit process
smallest element considered in the *life cycle inventory analysis* (3.4.12) for which input and output data are quantified

[SOURCE: ISO 14040:2006, 3.34]

3.4.9
environmental product declaration
EPD
type III environmental declaration
environmental declaration (3.4.3) providing quantified environmental data using predetermined parameters and, where relevant, additional environmental information

Note 1 to entry: The predetermined parameters are based on ISO 14040 and ISO 14044.

Note 2 to entry: The additional environmental information may be quantitative or qualitative.

Note 3 to entry: The shorter initialism, EPD, is used as the primary preferred term in this document.

[SOURCE: ISO 21930:2017, 3.1.1]

3.4.10
responsible sourcing
responsible materials sourcing
holistic approach to managing a *product* (3.3.1) from the point at which a material is mined or harvested in its raw state through manufacturing and processing

Note 1 to entry: Responsible sourcing may involve a consideration of later stages such as use, *re-use* (3.4.23), *recycling* (3.4.22) and other recovery *processes* (3.1.5).

3.4.11
life cycle assessment
LCA
compilation and evaluation of the inputs, outputs and the potential *environmental impacts* (3.6.24) of a *product system* (3.4.5)

Note 1 to entry: The terms inputs and outputs are defined in ISO 14040:2016, 3.21 and 3.25.

[SOURCE: ISO 14040:2006, 3.2, modified – Omitted “throughout its life cycle” from end of definition.]

3.4.12
life cycle inventory analysis
LCI
phase of *life cycle assessment* (3.4.11) involving the compilation and quantification of inputs and outputs for a *product* (3.3.1) throughout its *life cycle* (3.6.13)

Note 1 to entry: The terms inputs and outputs are defined in ISO 14040:2016, 3.21 and 3.25.

[SOURCE: ISO 14040:2006, 3.3]

3.4.13
life cycle impact assessment
phase of *life cycle assessment* (3.4.11) aimed at understanding and evaluating the magnitude and significance of the potential *environmental impacts* (3.6.24) for a *product system* (3.4.5) throughout the *life cycle* (3.6.13) of the *product* (3.3.1)

[SOURCE: ISO 14040:2006, 3.4]

3.4.14
reclamation
return of damaged, degraded or derelict *land* to beneficial use

[SOURCE: ISO 11074:2015, 2.2.11, modified – Omitted "rehabilitation" as alternative term; omitted Note 1 to entry.]

3.4.15
energy retrofit
building energy saving retrofit
installation and/or implementation of *energy* conservation measure in an existing *building* or *civil engineering works*

3.4.16
life cycle costing
methodology for systematic economic evaluation of *life cycle costs* (3.7.47) over a period of analysis, as defined in the agreed scope

Note 1 to entry: The term period of analysis is defined in ISO 15686-5:2008, 3.3.6.

Note 2 to entry: Life cycle costing can address a period of analysis that covers the entire *life cycle* (3.6.13) or a selected stage(s) or periods of interest thereof.

[SOURCE: ISO 15686-5:2008, 3.1.8]

3.4.17
whole-life costing

methodology for systematic economic consideration of all *whole-life costs* (3.7.47) and benefits over a period of analysis

Note 1 to entry: The term period of analysis is defined in ISO 15686-5:2008, 3.3.6.

Note 2 to entry: The projected costs or benefits may include external costs (including, for example, finance, business costs, income from land, sale, user costs).

Note 3 to entry: Whole-life costing can address a period of analysis that covers the entire *life cycle* (3.6.13) or a selected stage(s) or periods of interest thereof.

Note 4 to entry: This definition should be contrasted with that for *life cycle costing* (3.4.16).

[SOURCE: ISO 15686-5:2008, 3.1.15, modified – Omitted "as defined in the agreed scope" from definition.]

3.4.18
waste management
administrative and operational activities involved in the handling, pretreatment, treatment, conditioning, transport, storage, and disposal of *waste* (3.5.26)

3.4.19
landfill
waste (3.5.26) disposal site for the deposit of waste onto or into *land* under controlled or regulated conditions

[SOURCE: ISO 472:2013, 2.1694]

3.4.20
energy recovery
recovery of *energy* from a *process* (3.1.5), including *waste* (3.5.26) treatment processes