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Houses — Description of performance —

Part 6: Sustainable development contributions

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 15, *Framework for the description of housing performance*.

A list of all parts in the ISO 15928 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

The ISO 15928 series applies the framework for specifying the performance of buildings established in ISO 19208 to buildings occupied for residential purposes that can be separated or linked horizontally, but not linked vertically, and which have their own access and do not share any common space. This document covers the house as constructed including permanent services and finishings. It does not cover:

a) the use of the land for houses;

b) the design and operation of the environment within which houses are located;

c) household waste for the use stage;

d) moveable contents within homes.

Each part of the ISO 15928 series addresses a different attribute of a house and its parts, the objective of which is to identify the methods that are used to describe the performance for that attribute. Each part as such identifies objectives, provides performance descriptions, establishes parameter descriptions, and outlines evaluation processes for an attribute of a home and its parts.

These documents, which do not specify levels of performance, are intended to assist anyone concerned with specifying performance of attributes and aspects of houses or parts thereof, including purchasers, regulators, international and national committee members and specifiers, to describe their requirements in standardized performance terms. This in turn enables manufacturers/suppliers to respond by describing the performance of their products in a similar manner.

The performance concept has historically been used to address fitness for intended use of various attributes of a building either as a whole or as a part thereof. This concept has in recent years been expanded to address the relevant aspects of building design and the potential impact of choices made regarding, amongst other things, building materials, construction methods and resources, operating energy, water services and sanitary systems on economic conditions, the environment, a society or the quality of life. Accordingly, ISO 19208 includes considerations of the contributions to sustainable development in the framework for specifying the performance of buildings.

ISO 15392 establishes general principles for the contribution of buildings, civil engineering works and other types of construction works to sustainable development. It is based on the concept of sustainable development as it applies to the life cycle of construction works, from inception to the end-of-life. ISO 15392 does not provide performance levels (benchmarks) that can serve as the basis for sustainability claims. ISO 21929-1 establishes a core set of indicators to take into account in the use and development of sustainability indicators for assessing the sustainability performance of new or existing buildings, related to their design, construction, operation, maintenance, refurbishment and end of life. ISO 21931-1 provides a general framework for improving the quality and comparability of methods for assessing the environmental performance of buildings and their related external works.

The purpose of this document is, drawing on the principles of ISO 15392, ISO 21929-1 and ISO 21931-1 for sustainability, to develop a standardized framework for describing performance of houses in a manner that is consistent with the provisions of ISO 19208.

In this document, only a limited set of building attributes are considered: building materials, construction methods and equipment and people, operating energy, water services and sanitary systems. The limited set of environmental issues being considered are emissions to air, use of non-renewable resources, and freshwater consumption.

Sustainability and sustainable development can be approached from a number of viewpoints. Accordingly, some of the performance descriptions are not always applicable or appropriate to all users.

The guidance provided in ISO Guide 82 was considered for the development of this document. This document contributes to several of the UN Sustainable Development Goals, including SDG 8 (Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent

work for all), SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation), SDG 12 (Ensure sustainable consumption and production patterns) and SDG 13 (Take urgent action to combat climate change and its impacts).

Annex A provides commentary on the framework provided in this document.

NOTE 1 Impacts arise from changes or existing conditions and can be either adverse, neutral, or beneficial.

NOTE 2 As it relates to SDG 12, reducing our environmental impact, promoting the use of renewable sources of energy and encouraging responsible purchasing decisions related to houses can contribute to sustainable consumption and production. Sustainability is highly relevant when it comes to construction.

NOTE 3 As it relates to SDG 13, taking action to combat climate change and its impacts through appropriate building design and choice of building products plays an essential role in the climate agenda, helping to influence climate change, quantify greenhouse gas emissions and promote good practice in environmental management.

Houses — Description of performance —

Part 6: Sustainable development contributions

1 Scope

This document sets out a framework for describing the potential impact of choices on sustainable development made regarding building materials, construction methods and equipment and people, operating energy, water services and sanitary systems for a house. It outlines a performance-based decision-making approach to assessing such impacts.

This document is intended for use in the evaluation of houses that can be separated from, or linked horizontally, to another house(s). Where houses are linked, and some sharing of services occurs, performance can be assessed both for individual houses, as well as a group of houses that are linked together.

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 15928-5, *Houses — Description of performance — Part 5: Operating energy*

3 Terms and definitions

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
attribute
characteristic assessed in terms of whether it does or does not meet a given *performance* (3.10)

[SOURCE: ISO 6707-1:2020, 3.7.1.4 — EXAMPLE has been deleted.]

3.2
competent person
person who has demonstrated his/her ability to apply knowledge and skills to make a determination regarding the *performance* (3.10) of building *attributes* (3.1) in relation to the required performance

[SOURCE: ISO 19208:2016, 3.5]

3.3
component
product (3.12) manufactured as a distinct unit to serve a specific function or functions

[SOURCE: ISO 19208:2016, 3.6]

3.4
embodied energy
total of all the energy consumed in the processes associated with the production of *materials* (3.8) and *products* (3.12)

[SOURCE: ISO 6707-3:2017, 3.7.6]

3.5
house
building occupied for residential purposes and designed as one unit (dwelling) with its own access

Note 1 to entry: The house can be a separate building or linked horizontally with another house but not linked vertically.

[SOURCE: ISO 15928-5:2013, 3.1, modified — The original notes 1 to 4 to entry have been removed; a new note to entry has been added.]

3.6
impact
change that may be beneficial or adverse

[SOURCE: ISO 19208:2016, 3.7]

3.7
indicator
quantitative or qualitative measures of *impacts* (3.6)

[SOURCE: ISO 19208:2016, 3.8]

3.8
material
substance, *component* (3.3) or part used in the manufacture of a *product* (3.12)

3.9
non-renewable resource
resource that exists in a fixed amount that cannot be naturally replenished or cleansed on a human time scale

Note 1 to entry: Activities that occur in the technosphere such as recycling are not considered natural replenishment or cleansing.

Note 2 to entry: In this context, human time scale refers to the typical life time of a human rather than the time humans have been in existence.

[SOURCE: ISO 21930:2017, 3.6.3, modified — Note 3 to entry has been deleted.]

3.10
performance
ability to fulfil required functions under intended use conditions, behaviour when in use or *impact* (3.6) on economic conditions, the environment, society of quality of life

[SOURCE: ISO 19208:2016, 3.9]

3.11
performance description
performance (3.10) demanded or expected to be fulfilled by an *attribute* (3.1)

[SOURCE: ISO 19208:2016, 3.10]

3.12
product
item manufactured or processed for incorporation in buildings

[SOURCE: ISO 19208:2016, 3.14]

3.13
renewable resource
resource that is grown, naturally replenished or cleansed on a human time scale

EXAMPLE Trees in forests, grasses in grasslands and fertile soil, wind.

Note 1 to entry: A renewable resource is capable of being exhausted but can last indefinitely with proper stewardship.

Note 2 to entry: Activities that occur in the technosphere such as recycling are not considered natural replenishment or cleansing.

Note 3 to entry: In this context, human time scale refers to the typical life time of a human rather than the time humans have been in existence.

[SOURCE: ISO 21930:2017, 3.6.2]

3.14
sustainable development
development that meets the needs of the present without compromising the ability of future generations to meet their own needs

Note 1 to entry: According to the Report of the World Commission on Environment and Development, sustainable development contains two key concepts: 1) the concept of "needs", in particular the essential needs of the world's poor, to which overriding priority should be given; and 2) the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

Note 2 to entry: Sustainable development concerns all resources providing a better quality of life, equally for present and future generations. Sustainable development also aims to eradicate poverty and gives priority to the needs of the poor.

[SOURCE: ISO 15392:2019, 3.25]

3.15
societal expectations
what society deems as acceptable

Note 1 to entry: Note to entry: Societal expectations provide motives for actions taken.

[SOURCE: ISO 19208:2016, 3.20]

3.16
volatile organic compound
VOC
any organic liquid and/or solid that evaporates spontaneously at the prevailing temperature and pressure of the atmosphere with which it is in contact

[SOURCE: ISO 17895:2005, 3.1, modified — Notes 1 and 2 to entry have been removed.]

4 Sustainability performance

4.1 Objectives

The contributions to the sustainable development by nominated attributes of a house or a part thereof shall be such that specified environmental, social and economic impact selections due to the product, construction, use and end-of-life stages are kept within specified levels.

NOTE 1 Sustainable development concerns all resources providing a better quality of life, equally for present and future generations. Sustainability is the goal of sustainable development and can result from the application of the concept of sustainable development. While the challenge of sustainability is global, the strategies for sustainability in building construction are local and differ in context and content from region to region (see ISO 15392).

NOTE 2 The levels to be specified can be set in accordance with user requirements or societal expectations in response to local, regional, national or global needs (see ISO 19208).

4.2 Performance description

The performance description is an expression of the impacts of the choices made in respect of one or more of the following on a house or a part thereof during its production, construction, use and end-of-life stages:

a) building materials;

b) construction methods and resources;

c) operating energy;

d) water services;

e) sanitary systems.

The performance description is on aspects such as:

— emission to air;

— use of non-renewable resources;

— fresh water consumption;

— costs;

— indoor air quality;

— resilience;

— business and employment opportunities.

4.3 Principles for describing performance

The sustainability performance of a house may be described by a set of indicators which relate to its production, construction, use or end-of-life, based on the impacts of aspects of the house described in 4.2.

The parameters for the description of performance are:

a) a group of variables that are used to quantitatively describe the degree of performance; or

b) a group of indicators that are used to evaluate performance.