



**SLOVENSKI STANDARD**  
**oSIST prEN ISO 22014:2023**  
**01-junij-2023**

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**Knjižnični objekti za arhitekturo, inženiring, gradbeništvo in uporabo (ISO/DIS 22014:2023)**

Library objects for architecture, engineering, construction, and use (ISO/DIS 22014:2023)

Bibliotheksobjekte für Architektur, Ingenieur- und Bauwesen und Gebrauch (ISO/DIS 22014:2023)

Objets de bibliothèque pour l'architecture, l'ingénierie, la construction et l'utilisation (ISO/DIS 22014:2023)

**Ta slovenski standard je istoveten z: prEN ISO 22014**

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35.240.67	Uporabniške rešitve IT v gradbeništvu	IT applications in building and construction industry
91.010.01	Gradbeništvo na splošno	Construction industry in general

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## Library objects for architecture, engineering, construction, and use

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## ISO/DIS 22014:2023(E)

### 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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 8, *Construction documentation*.

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](http://www.iso.org/members.html).



# Introduction

## 0.1 General

This document describes best practice for the development and application of library objects to support building information modelling (BIM) based design, specification, construction and operational processes, including giving additional recommendations for specific use-cases such as assemblies.

A library object is intended for reuse within project teams and across organizations. This serves to improve accuracy and constructability of designs, and to improve the handover of information through the supply chain to the owner/operator. Objects and their corresponding graphical symbols are today commonly provided in digital format. Objects combining properties, shape and graphical symbols offer scope for greater accuracy and efficiency.

The objective has been to include principles and definitions for the symbolic and simplified visual presentation of library objects in connection with BIM, and their organization into libraries.

## 0.2 Purpose and justification

The purpose of this document is to offer a persistent standard for developers, library providers, designers and manufacturers, to improve the exchange and reuse of library objects.

Library objects and their corresponding graphical symbols are today commonly provided in digital format by model authoring software. Traditional paper-based methods for graphical symbols have therefore become less useful and are in some cases outdated. Several national standards have even been withdrawn due to lack of maintenance and conflicting International Standards. Still, documentation of complex entities like buildings and civil engineering works requires clear and uniform presentation so as to be legible and easily understood. This document is intended to give a framework for the presentation of library objects, with respect to those purposes, and also the structuring of graphical symbols into libraries.

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Library objects, by combining properties, shape and graphical symbols, offer scope for greater accuracy and efficiency. Current technology gives the opportunity to adjust the views of library objects (content and visual presentation) to the many purposes that occur during the lifecycle of a building information model, and to connect symbol graphics to library objects.

## 0.3 Relationship to other standards

The increased adoption of data dictionaries and the standards ISO 23386 and ISO 23387 are expected to facilitate the preparation of data templates with properties for the non-graphic aspects of library objects and EN 17412-1 (also to be ISO/DIS 7817) to facilitate specifying level of information need for geometrical and alphanumeric information and documentation.

The EN 17412-1 concepts and principles can be applied for a general information exchange and whilst in progress, for a generally agreed way of information exchange between parties in a collaborative work process, as well as for an appointment with specified information delivery. Therefore, EN 17412-1 concepts and principles support the preparation of libraries also outside of any individual project and are applied in this standard.

This document recommends that ISO 16739-1 is used as a basis for naming of objects.

Project and asset information references provided by the appointing party such as object libraries are covered in ISO 19650-2 5.1.6 and ISO 19650-3 5.18.

Guidance on graphical presentation for specific types of construction objects is provided by ISO 7519.



# Library objects for architecture, engineering, construction, and use

## 1 Scope

This document gives requirements for defining format and content for library objects to support project inception, brief, design, tendering, construction, operations, use and demolition, supporting the development of information throughout the process, in connection with building information modelling (BIM) and their organization into libraries.

This document:

- establishes requirements for defining template objects, generic objects and product objects in data-driven library and design processes;
- establishes requirements for graphical symbols and other graphic conventions for use on drawings for the built environment, giving principles and definitions for the symbolic and simplified visual presentation of objects. It also describes a rationale of symbolism which establishes rules for the design of graphical symbols and other graphic conventions, and gives recommendations for the application of those rules and the ways in which symbolism should be used;
- covers purposes for characterizing the shape and measurement of library objects;
- covers purposes for specifying and assessing properties for library objects. It defines the information appropriate for specific uses including specification of the desired outcome (typically by designers and engineers) and the selection of identified products (typically by contractors and subcontractors). It also gives recommendations for the application of assemblies in integrated BIM working.

This document is intended for all professionals and service providers who produce and use library objects with generic and product-specific data. This group includes, but is not limited to, product manufacturers and suppliers, library authors, designers and engineers, contractors, owners, maintainers and commissioners.

## 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 12006-2, *Building construction — Organization of information about construction works — Part 2: Framework for classification*

ISO 12006-3, *Building construction — Organization of information about construction works — Part 3: Framework for object-oriented information*

ISO 13567-1, *Technical product documentation — Organization and naming of layers for CAD — Part 1: Overview and principles*

ISO 13567-2, *Technical product documentation — Organization and naming of layers for CAD — Part 2: Concepts, format and codes used in construction documentation*

ISO 23386:2020, *Building information modelling and other digital processes used in construction — Methodology to describe, author and maintain properties in interconnected data dictionaries*

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ISO 23387:2020, *Building information modelling (BIM) — Data templates for construction objects used in the life cycle of built assets — Concepts and principles*

ISO/TS 15926-4, *Industrial automation systems and integration — Integration of life-cycle data for process plants including oil and gas production facilities — Part 4: Initial reference data*

ISO 16739-1, *Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries — Part 1: Data schema*

ISO 80000-1, *Quantities and units — Part 1: General*

EN 17412-1, *(ISO 7817) Building Information Modelling — Level of Information Need — Concepts and principles*

**3 Terms and definitions**

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

ISO and IEC maintain terminological 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****library object  
(type object)**

representation of an object, being maintained as part of a collection with common features

Note 1 to entry: A library object can be a template object, generic object or product object.

Note 2 to entry: A library object is independent of any occurrence and has no placement in space.

Note 3 to entry: A library object can be referred to as a type object or class.

Note 4 to entry: See [Figure 1](#).

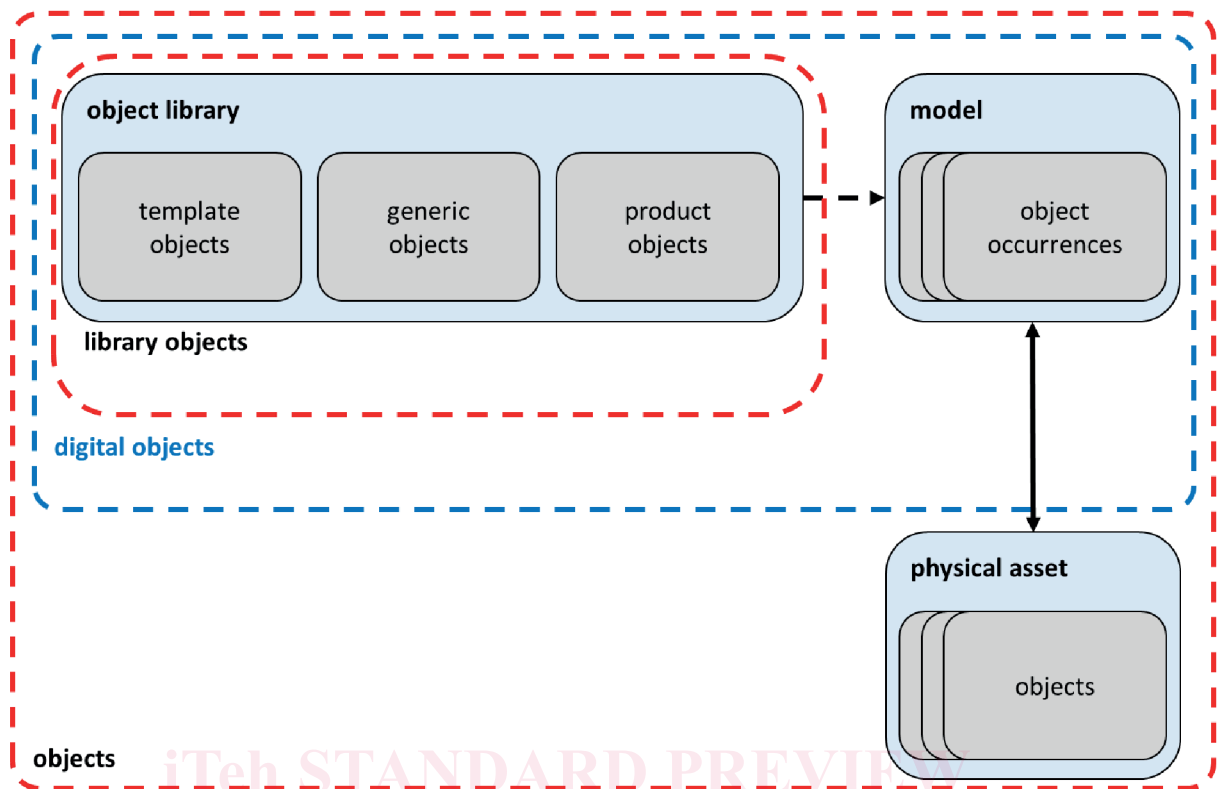


Figure 1 — Relationship between library objects

### 3.1.1

#### template object

library object (3.1) used as a guide to produce generic objects (3.1.2) and product objects (3.1.3)

Note 1 to entry: A template object typically provides schedules of classification values and a minimum set of properties. The *measurement type* (e.g. "area") of properties (e.g. "Effective Area") are specified, but the *values and units* (e.g. "0,300" and "m<sup>2</sup>") are not.

Note 2 to entry: Data templates containing recommended properties and set and/or sets of properties could be available to support the development of template objects.

### 3.1.2

#### generic object

library object (3.1) used as a generalization

Note 1 to entry: A generic object is intended for use prior to being resolved into a product.

Note 2 to entry: Typically shape and graphical symbols will be provided, and some property values with units.

### 3.1.3

#### product object

library object (3.1) used to represent a product

Note 1 to entry: A product object is specific to a manufacturer and model identity.

## 3.2

### product

tangible outcome of a process

[SOURCE: ISO 6707-3:2017, 3.3.1]