



DPC: 24/30459357 DC

**BSI Group Headquarters**

389 Chiswick High Road London W4 4AL

Tel: +44 (0)20 8996 9000

Fax: +44 (0)20 8996 7400

www.bsigroup.com

Date: 17 June 2024

Origin: International

**Latest date for receipt of comments: 10 August 2024**

Project No. 2022/01682

Responsible committee: B/555 Construction design, modelling and data exchange

Interested committees:

Title: Draft BS EN ISO 23387 Building information modelling (BIM) — Data templates for objects used in the life cycle of assets.

Please notify [admin.start@bsigroup.com](mailto:admin.start@bsigroup.com) if you are aware of any keywords that might assist in clarifying or identifying the standard or of the content of this standard:

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

**WARNING: THIS IS A DRAFT AND MUST NOT BE REGARDED OR USED AS A BRITISH STANDARD. THIS DRAFT IS NOT CURRENT BEYOND 10 August 2024**

This draft is issued to allow comments from interested parties; all comments will be given consideration prior to publication. No acknowledgement will normally be sent. **See overleaf for information on the submission of comments.**

No copying is allowed, in any form, without prior written permission from BSI except as permitted under the Copyright, Designs and Patent Act 1988 or for circulation within a nominating organization for briefing purposes. Electronic circulation is limited to dissemination by e-mail within such an organization by committee members.

Further copies of this draft may be purchased from BSI Shop <http://shop.bsigroup.com> or from BSI Customer Services, Tel: +44(0) 20 8996 9001 or email [cservices@bsigroup.com](mailto:cservices@bsigroup.com). British, International and foreign standards are also available from BSI Customer Services.

Information on the co-operating organizations represented on the committees referenced above may be obtained from <https://standardsdevelopment.bsigroup.com/>.

## Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

## UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

## Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

## Template for comments and secretariat observations

|                  |                        |
|------------------|------------------------|
| Date: xx/xx/20xx | Document: ISO/DIS xxxx |
|------------------|------------------------|

| 1  | 2                                          | (3)                          | 4               | 5                                                                                                                                  | (6)                                                                      | 7                                                  |
|----|--------------------------------------------|------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------------------|
| MB | Clause No./ Subclause No./Annex (e.g. 3.1) | Paragraph/ Figure/Table/Note | Type of comment | Comment (justification for change) by the MB                                                                                       | Proposed change by the MB                                                | Secretariat observations on each comment submitted |
|    | 3.1                                        | Definition 1                 | ed              | Definition is ambiguous and needs clarifying.                                                                                      | Amend to read '...so that the mains connector to which no connection...' |                                                    |
|    | 6.4                                        | Paragraph 2                  | te              | The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK. | Delete reference to UV photometer.                                       |                                                    |



# DRAFT International Standard

## ISO/DIS 23387

### Building information modelling (BIM) — Data templates for objects used in the life cycle of assets

ICS: ISO ics

ISO/TC 59/SC 13

Secretariat: **SN**

Voting begins on:  
**2024-06-17**

Voting terminates on:  
**2024-09-09**

This document is circulated as received from the committee secretariat.

## ISO/CEN PARALLEL PROCESSING

Reference number  
ISO/DIS 23387:2024(en)

Full document details: 24/30459357 DC

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENTS AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

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.

© ISO 2024  **Documents**  
Document Sharing Hub



**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
CP 401 • Ch. de Blandonnet 8  
CH-1214 Vernier, Geneva  
Phone: +41 22 749 01 11  
Email: [copyright@iso.org](mailto:copyright@iso.org)  
Website: [www.iso.org](http://www.iso.org)

Published in Switzerland

# Contents

Page

|                                                                               |           |
|-------------------------------------------------------------------------------|-----------|
| <b>Foreword</b>                                                               | <b>iv</b> |
| <b>Introduction</b>                                                           | <b>v</b>  |
| <b>1 Scope</b>                                                                | <b>1</b>  |
| <b>2 Normative references</b>                                                 | <b>1</b>  |
| <b>3 Terms and definitions</b>                                                | <b>1</b>  |
| <b>4 Data template</b>                                                        | <b>4</b>  |
| 4.1 General                                                                   | 4         |
| 4.2 UML representation of a data template                                     | 5         |
| 4.3 Data modelling                                                            | 5         |
| 4.3.1 General                                                                 | 5         |
| 4.3.2 Object                                                                  | 5         |
| 4.3.3 Data template                                                           | 6         |
| 4.3.4 Group of properties                                                     | 6         |
| 4.3.5 Property                                                                | 6         |
| 4.3.6 Reference document                                                      | 7         |
| <b>5 ISO 12006-3 representation</b>                                           | <b>7</b>  |
| <b>Annex A (normative) Linking data templates with classification systems</b> | <b>9</b>  |
| <b>Annex B (informative) Creation of data templates</b>                       | <b>10</b> |
| <b>Annex C (informative) Examples</b>                                         | <b>15</b> |
| <b>Annex D (normative) XSD representation</b>                                 | <b>20</b> |
| <b>Annex E (informative) XML example</b>                                      | <b>21</b> |
| <b>Bibliography</b>                                                           | <b>22</b> |

## 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)).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at [www.iso.org/patents](http://www.iso.org/patents). ISO shall not be held responsible for identifying any or all such patent rights.

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 the European Committee for Standardization (CEN) Technical Committee CEN/TC 442, *Building Information Modelling (BIM)*, in collaboration with ISO Technical Committee TC 59, *Buildings and civil engineering works*, Subcommittee SC 13, *Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM)*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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

Building information modelling (BIM) provides a digital process for describing and displaying information required in the planning, design, construction and operation of assets. This approach encompasses all aspects of the built environment, including civil infrastructure, utilities and public space.

ISO 19650 (all parts) sets out the recommended concepts and principles for business processes across the built environment sector in support of the management and production of information during the life cycle of assets when using building information modelling (BIM). To support the management and production of information in these business processes, standardization is of the highest importance. Machine-interpretable information is essential to provide a reliable and sustainable exchange of information in an asset life cycle process.

Data templates provide a standardized data structure to describe the characteristics of objects, enabling seamless information exchanges of construction industry business semantics through the life cycle of assets.

Data templates should be standardized and made available across the built environment sector, and where applicable through data dictionaries based on ISO 12006-3:2022.

Data templates can be used in conjunction with Industry Foundation Classes (IFC) in ISO 16739-1.

The target audience of this document is:

- Software developers, for embedding the data structure in software, platform etc.
- Construction industry domain experts appointed to create data templates based on sources describing information needs.
- Industry practitioners, as they will be providing the demand, use of data, and process etc.
- Authorities, as they will be reviewing, checking all relevant submission.
- R&D, as they will support the innovation and continuous development of data templates.
- Institutions, as the concept of data templates, same as BIM, and digital information principles shall be merged into education and training program.
- Developers (Asset owners), as they need a more clear vision on data template, hence to put this as part of the tender documents.



# Building information modelling (BIM) — Data templates for objects used in the life cycle of assets

## 1 Scope

This document provides a data model for data templates. The data model is developed to enable machine-interpretability based on a standard data structure, carrying the alphanumerical information for any type of object used in the life cycle of assets.

This document provides a data template representation following ISO 12006-3:2022 to ensure compatibility between data templates and data dictionaries.

This document provides a methodology to create and maintain data templates in data dictionaries.

This document provides rules for linking between data templates and classification systems within a data dictionary based on ISO 12006-3.

This document provides an XML Schema Definition (XSD) expressing the rules in this document.

It is not in the scope of this document to provide the content of any data templates. It is intended to be used for developing specific data templates based on standards developed in ISO/IEC, CEN/CENELEC, national standardization organizations, or other sources describing information needs. This document provides the framework supporting different use cases.

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

ISO 12006-3:2022, *Building construction — Organization of information about construction works — Part 3: Framework for object-oriented information*

## 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 <http://www.electropedia.org/>

### 3.1 data

reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing

[SOURCE: ISO 8000-2:2020, 3.2.2]