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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.

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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 Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.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.**
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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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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 15686-3

Buildings and constructed assets — Service life planning —

Part 3: Methods, data and communication

ICS: 91.040.01

ISO/TC 59/SC 14

Secretariat: **BSI**

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2025-04-25

This document is circulated as received from the committee secretariat.

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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 shall be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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

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, *Building Construction*, Subcommittee SC 14, *Design life*.

ISO 15686 consists of the following parts, under the general title *Building Construction — Service Life Planning*:

- *Part 1: General principles and framework*
- *Part 2: Process*
- *Part 3: Methods, data and communication*
- *Part 5: Life-cycle costing*
- *Part 7: Performance evaluation for feedback of service life data from practice*

Introduction

The ISO 15686 series on constructed assets, including service life planning, is an essential contribution to the development of a policy for service life planning of constructed assets.

This part of ISO 15686 specifies methods, data structures and communication activities to be implemented as part of service life planning of constructed assets and their components. Supporting guidance is given in the form of templates and data definitions. For this to occur it is considered that an information system is needed. An information management system suitable for carrying out the service life planning process needs to meet a number of requirements including being able to

- capture enough information and support the methods needed to calculate the effect of the environment and microclimate on the building materials and components used,
- define maintenance schedules for different qualities of building materials installed under different environmental conditions.
- apply life cycle costing methodologies using the captured data to calculate the benefits of using either high performance materials with little maintenance or lower performance materials with better maintenance procedures. Procedures need to be able to take ease of replacement and demolition into account,
- incorporate new knowledge and predictive methods for material performance and maintenance without affecting methods and data structures that enable calculations based on current knowledge,
- support interoperability between software applications, and
- be used by designers, constructors, owners, operators and demolishers throughout the construction lifecycle.

In practice, this means applying the technology that is generally being termed Information Management and in some cases Building Information Modelling (BIM) systems. BIM and the use of software applications that enable it is becoming a normal way of working within the construction industry. It offers significant benefits including the ability to work with construction components and assemblies as objects that encapsulate both shape (in the form of geometric information) and other information about performance, delivery, operation and more. Performance can include information about durability and sustainability metrics. This offers powerful capabilities for dealing with these key areas of interest at every level from individual component to constructed facility.

This standard is particularly concerned with the provision of information for service life planning. It proposes structures for the capture and exchange of service life planning information based on the Industry Foundation Classes (IFC) standard for information exchange and sharing..

The standard starts by providing the service life planning context within which it is prepared. Each subsequent section covers a stage of the lifecycle of service life information, starting with its measurement and publication, followed by its adjustment in the context of a particular facility and finally its use in whole-life calculations. The annexes summarize the standard properties and provide worked examples of how the data might be used in manual or automated calculations.

Relationship to previous parts

The following previous parts and clauses have been used in the preparation of this Part

- Part 1:2011 General principles and framework (4.5 5.4 5.7 5.8)
- Part 2:2012 Service life prediction procedures (all)
- Part 4:2014 Service Life Planning using Building Information Modelling (all)
- Part 8:2008 Reference service life and service life estimation (various parts)
- Part 9:2008 Guidance on assessment of service life (all)

Buildings and constructed assets — Service life planning —

Part 3: Methods, data and communication

1 Scope

This part of ISO 15686 provides information and guidance on the methods, data, and communication of service life planning of constructed assets and their components as well as the required supporting data.

The main audience is product, facility and Information managers

This Standard specifies the structure and representation of service life data. It is focused on key exchange requirements underlying four common transactions.

This document may be used for a variety of purposes

- a) to achieve and maintain a common understanding within the national and project contexts;
- b) to establish the desired outcomes and to define appropriate quality;
- c) to identify appropriate management effort and tools;
- d) to identify necessary effort and resourcing.

Service life planning involves the application of data about elements within constructed assets to enable their design, predicted or estimated service life to be determined and communicated.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 15686-1:2025

ISO 15686-2:2025

ISO 15686-5:20xx

ISO 15686-7:20xx

ISO 16739, *Industry Foundation Classes (IFC) for data sharing in the construction and facility management industries*

3 Terms and definitions

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

3.1 object

unique occurrence of an item belonging to a class such that the attributes and constraints are defined by the class, having its own identity, behaviour and values for its attributes (state)

3.2

property set

grouping of properties that belong together based on some principle, e.g., viewpoint, lifecycle stage

3.3

quantity set

grouping of characteristic measure properties

4 Overview (informative)

4.1 Process map

The process map (see [Figure 1](#)) shows the key sequence of information exchanges and places the information exchanges in context, identifying the sending and receiving roles. It is based on the process map given in ISO 15686-1:2011, Annex B. The process map document covers the determining of the service life of a type of product and of occurrences of products of a particular type during later design stages, construction and operation/maintenance.

- [clause 5](#): Common requirements

In summary, this part covers four methods for working with service life data.

- [clause 6](#): Product and testing are brought together to obtain the service life characteristics.
- [clause 7](#): The characteristics are brought into a specific context to obtain a predicted service life.
- [clause 8](#): The predicted or measured service life is used with cost or environmental impact rates to obtain a life cycle cost or assessment.
- [clause 9](#): The context factors are revised to reflect in-use surveys.

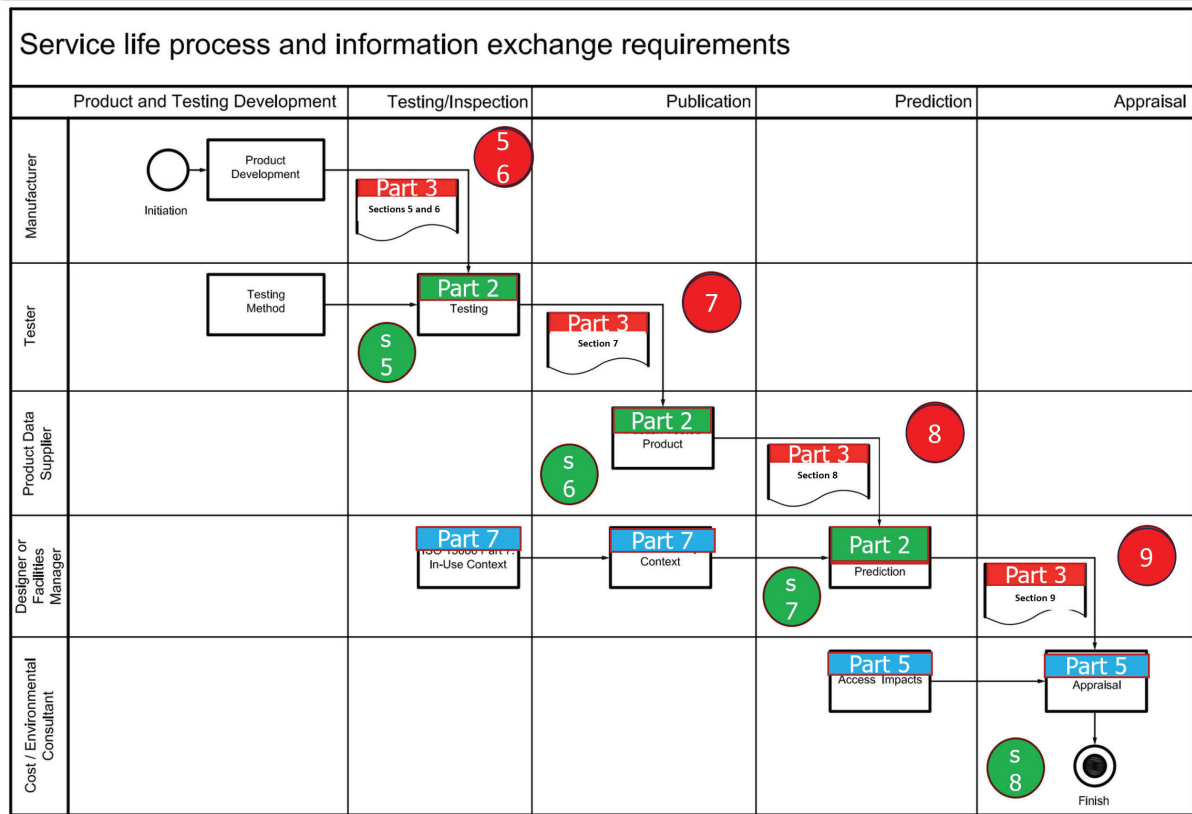


Figure 1 — Exchange requirements detailed in this part and their relationship to other parts

The determination of service life is undertaken at various times during the product development and during design, construction and operation of a facility. During the early design stages when product information is aggregated a level such as the whole facility or as specifications of whole systems; it is only the design life of a product that can be determined. At the earliest design stages when only product occurrences are defined, design life is estimated at the occurrence level. At later design stages, when individual products are located and these products are designated by type, design life can be indicated for all occurrences at the type level. Similarly, when individual products are identified, it becomes possible to determine a reference service life when a manufacturer/supplier can be identified. As with design life, reference service life can be allocated to the product type level.

At later design stages and during construction, when the configuration and location of products has been fully established, it becomes possible to analyse the service life of products according to 'in use' conditions. These conditions can vary the reference service life depending on factors such as exposure to weather, aggressiveness of the local environment and other degrading (or upgrading) factors. The result of applying in-use conditions is to define an estimated service life which is simply the length of time of a product occurrence lifecycle.

Finally, the condition of a product occurrence can be checked from time to time during the operational stage. From the condition of the product, a residual service life can be assessed. If degradation is more than has been expected, the residual service life is reduced to less than the value that might have been expected from the estimated service life.

4.2 Methods, data and communication

The overall data requirements for the process are summarized in [Figure 2](#).

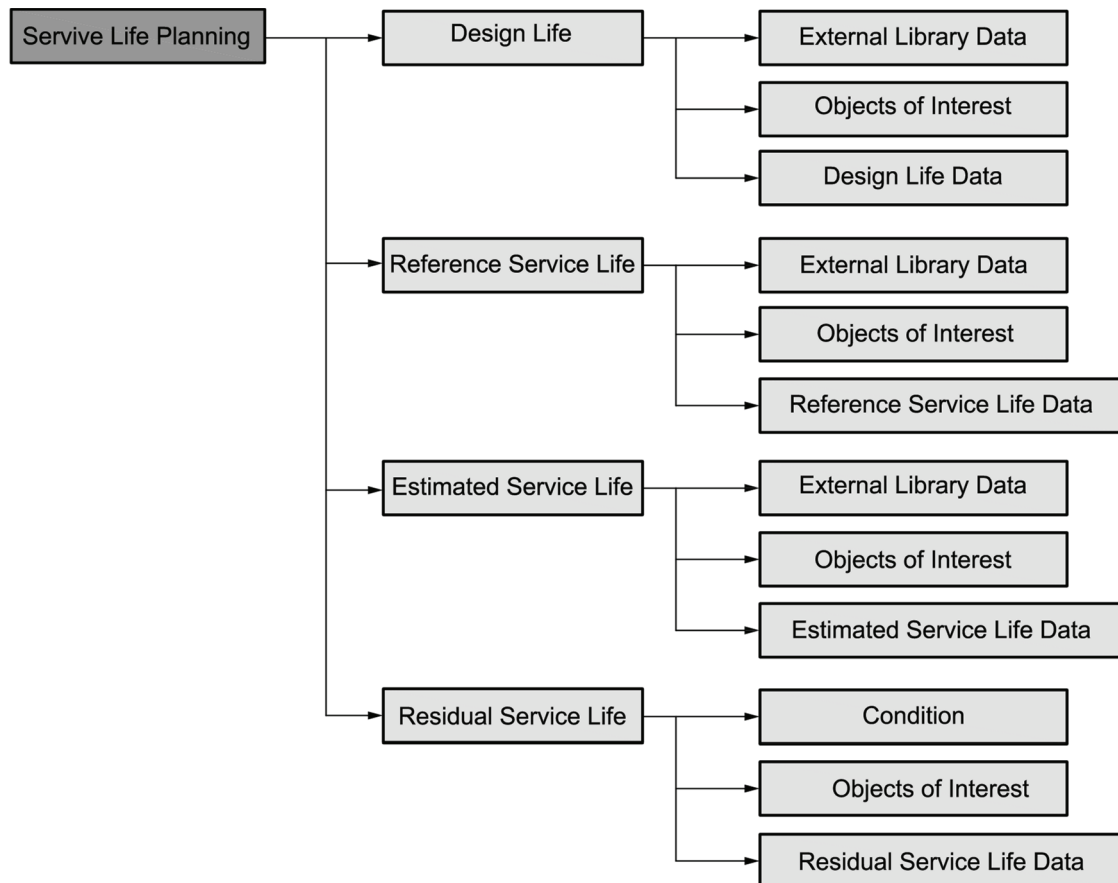


Figure 2 — The 'service life planning view'

[Clause 5](#) this part defines the common requirements for applying this part

[Clause 6](#) covers the specification/selection of product.

[Clause 7](#) covers the testing regimen and the key service life metrics.

[Clause 8](#) covers the facility context and the predicted/estimated service life.

[Clause 9](#) covers the impacts (to date and predicted) for stages in the life cycle value.

[Clause 10](#) covers the consideration and representation of uncertainty

Annex A6-10 offers templates

Annex B6-10 offers formal data definitions

5 Common requirements

5.1 Objectives

The application of any of the methods detailed in [clauses 6-10](#) shall be based on clear objectives including the desired outcome and the acceptable levels of confidence