BS EN 15942:2011

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Sustainability of construction works — Environmental product declarations — Communication format business-to-business

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National foreword

This British Standard is the UK implementation of EN 15942:2011.

The UK participation in its preparation was entrusted to Technical Committee B/558, Sustainability of construction works.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Contribution des ouvrages de construction au développement durable - Déclarations environnementales des produits - Formats de communication entre professionnels

Nachhaltigkeit von Bauwerken - Umweltproduktdeklarationen - Kommunikationsformate zwischen Unternehmen

This European Standard was approved by CEN on 13 August 2011.

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Foreword

This document (EN 15942:2011) has been prepared by Technical Committee CEN/TC 350 “Sustainability of construction works”, the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2012, and conflicting national standards shall be withdrawn at the latest by March 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document, supports the use of Product Category Rules (FprEN 15804:2011) for construction products. Together they are used as the means for arriving Environmental Product Declarations (EPD).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The aim of this European Standard is to harmonise the way in which environmental product declarations (EPD) are communicated in Europe.

It is relevant to the use of the EPD in the building chain where materials and products are assembled into new products and assemblies, each with their own EPD.

This European Standard will improve handling of the data from EPD at the building level and the assessment of environmental performance of buildings.

An EPD expressed in a standardized format will facilitate the communication of the product's environmental performance for business-to-business (B2B).

1 Scope

This European Standard is applicable to all construction products and services related to buildings and construction works. It specifies and describes the communication format for the information defined in FprEN 15804 for business-to-business communication to ensure a common understanding through consistent communication of information.

NOTE This European Standard does not deal with business to consumer communication and is not intended for that purpose. Business to consumer communication format is planned to be the subject of a future document.

2 Normative references

The following referenced documents are indispensable for the application 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.

FprEN 15804:2011, *Sustainability of construction works — Environmental product declarations — Core rules for the product category of construction products*

EN ISO 14020, *Environmental labels and declarations — General principles (ISO 14020:2000)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in FprEN 15804:2011 and the following apply.

3.1
consumer
individual member of the general public purchasing or using goods, property or services for private purposes

[EN ISO 14025:2006]

3.2
business-to-business communication
describing or involving the passage of information between different businesses, rather than between businesses and the general public and consumers

3.3
significant figures
those digits of a number that carry meaning contributing to its precision

NOTE This includes all digits except:

— leading and trailing zeros where they serve merely as placeholders to indicate the scale of the number,

— spurious digits introduced, for example, by calculations carried out to greater accuracy than that of the original data, or measurements reported to a greater precision than the EPD supports.

4 Symbols and abbreviations

B2B Business-to-business

EPD Environmental Product Declaration

ITM Information Transfer Matrix

LCA Life Cycle Assessment

LCIA Life Cycle Impact Assessment

PCR Product Category Rules

5 General principles

To present environmental information in a structured and consistent way and in a common format, a generic template is used. The generic template is used for information transfer.

The generic template is called an Information Transfer Matrix (ITM). The ITM:

— does not preclude the fact that an EPD can have an individual and unique format;

— is the standardized part of EPD communication according to FprEN 15804;

— a statement whether the ITM has been independently verified shall be made.

The ITM addresses the following types of information according to FprEN 15804:

— general information;

— declaration of environmental parameters derived from LCA:

  — parameters describing environmental impacts;

  — parameters describing resource input;

  — additional environmental information describing different waste categories and output flows;

— scenarios and technical information;

— additional information on emissions to indoor air, soil and water during the use stage.

NOTE For all quantified data, the corresponding scenario is specified in accordance with FprEN 15804.

6 Requirements for EPD communication format

An EPD shall include an ITM.

The following requirements on formatting apply (electronic and paper):

— according to EN ISO 14020 the information in the ITM shall not be misleading.

— Structure:

  — the EPD information shall be accurately placed in its unique position identified in the ITM, according to Annex A.

— Numerical data:

  — quantitative data shall be numerically reported in the appropriate units of measurement as prescribed in FprEN 15804;

  — numerical reporting of no more than three significant figures shall be applied.

— Use of language (text):

  — text shall be clearly written adopting a single language throughout;

  — where text is conveying a qualitative issue or parameter, it shall provide sufficient detail as to give transparency and precise and accurate understanding of that issue or parameter.

7 Information Transfer Matrix

7.1 General

This clause defines the standardized part of the EPD communication i.e. the generic template.

Communication of standardized environmental information for construction products and services requires a format that provides a location of all elements of information from different sources. The ITM provides a unique and consistent reference position in a grid.

With reference to FprEN 15804 the ITM will contain some information, which is mandatory and some information, which is voluntary, and so in some cases blanks or gaps can occur in the ITM.

The matrix provides the template for communicating this information for each of the information modules as defined in FprEN 15804:2011, Figure 1. The matrix is also used for communicating the information for any of the scenarios, which can occur and/or the respective technical information for these scenarios. The ITM consists of a grid structure in which all items of information according to FprEN 15804 shall be presented.

The ITM allows reporting of an EPD covering a full life cycle, but also for example, of information representing single or multiple scenarios for discrete life cycle stages such as production, use or end of life. Where multiple scenarios for discrete life cycle stages or information modules are to be reported the ITM shall be separated into sub-ITM-tables where each sub table addresses all the scenarios related to a specific life cycle stage or information module. These sub-ITM-tables shall follow the structure of the master-ITM-Tables A.2 to A.8. Where there are known linkages between scenarios of different modules these shall be stated in Table A.2.

The content of an EPD shall be communicated at minimum through the ITM as given in Annex A.

For EPDs which cover only cradle to gate or cradle to gate with options, only the product stage ITM and where relevant scenario ITM shall be provided.

7.2 Aggregation of information

The information modules A1, A2, and A3 may be reported separately and/or aggregated to a sub sum of the information module “I Product Stage”. No other aggregations shall be made.

Annex A
(normative)

Master ITM

The Tables A.1 to A.7 reflect the parameters required in FprEN 15804.

Table A.1 — Declaration of general information

Declaration of general information		
a	The name and address of the manufacturer(s)	
b	The description of the construction product's use	
	The functional unit	
	The declared unit	
c	Construction product identification by name (including any. product code)	
	A simple visual representation of the construction product to which the data relates	
d	A description of the main product components and or material NOTE This description is intended to enable the user of the EPD to understand the composition of the product in delivery condition and also support a safe and effective installation, use and disposal of the product.	
e	Name of the programme used and the programme operator's name and address and, if relevant the logo and website	
f	The date the declaration was issued	
	The end of the 5 year period of validity	
g	Information on which stages are not considered, if the declaration is not based on an LCA covering all life cycle stages	
h	A statement that EPDs of construction products may not be comparable if they do not comply with this European Standard	
i	In the case where an EPD is declared as an average environmental performance for a number of products a statement to that effect shall be included in the declaration:	
	range/ variability of the LCIA results if significant	
j	For whom the EPD is representative: The site(s)	
	The manufacturer	
	The group of manufacturers or those representing them	
k	The declaration of material content of the product shall list as a minimum substances contained in the product that are listed in the "Candidate List of Substances of Very High Concern for authorisation" when their content exceeds the limits for registration with the European Chemicals Agency NOTE The source location of any safety data sheet can be provided.	
l	Information on where explanatory material may be obtained NOTE Guidance on safe and effective installation, use and disposal of the product is supplied by the manufacture.	
	http//: or contact for product safety sheet	
	http//: or contact for product related substances considered under REACH	
	Linked scenarios	
	FprEN 15804:2011, Figure 3 shall be completed and reproduced	

Table A.2 — Parameters describing environmental impacts

Declaration of environmental parameters derived from LCA									
Parameters describing environmental impacts									
			Global warming potential; GWP	Depletion potential of the stratospheric ozone layer; ODP	Acidification potential of soil and water sources; AP	Eutrophication potential; EP	Formation potential of tropospheric ozone; POCP	Abiotic depletion potential (ADP-elements) for non fossil resources	Abiotic depletion potential (ADP-fossil fuels) for fossil resources
			kg CO_2 equiv.	kg CFC 11 equiv.	kg SO_2 equiv.	kg PO_4 equiv.	kg Ethene equiv.	kg Sb equiv.	MJ, net calorific value.
Product stage	Raw material supply	A1							
	Transport	A2							
	Manufacturing	A3							
	Total (of product stage)	Total							
Construction process stage	Transport	A4							
	Construction installation process	A5							
Use stage	Use	B1							
	Maintenance	B2							
	Repair	B3							
	Replacement	B4							
	Refurbishment	B5							
	Operational energy use	B6							
	Operational water use	B7							
End of life	De-construction, demolition	C1							
	Transport	C2							
	Waste processing	C3							
	Disposal	C4							
Benefits and loads beyond the system boundaries	Re-use, recovery, recycling potential	D							

Table A.3 — Parameters describing resource use, primary energy

Declaration of environmental parameters derived from LCA								
Parameters describing resource use, primary energy								
			Use of renewable primary energy excluding renewable primary energy resources used as raw materials	**Use of renewable primary energy resources used as raw materials**	**Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)**	**Use of non renewable primary energy excluding non renewable primary energy resources used as raw materials**	**Use of non renewable primary energy resources used as raw materials**	**Total use of non renewable primary energy resources (primary energy and primary energy resources used as raw materials)**
			MJ Net calorific value	MJ Net calorific value	MJ Net calorific value	MJ Net calorific value	MJ Net calorific value	MJ Net calorific value
Product stage	Raw material supply	A1						
	Transport	A2						
	Manufacturing	A3						
	Total (of product stage)	Total						
Construction process stage	Transport	A4						
	Construction installation process	A5						
Use stage	Use	B1						
	Maintenance	B2						
	Repair	B3						
	Replacement	B4						
	Refurbishment	B5						
	Operational energy use	B6						
	Operational water use	B7						
End of life	De-construction, demolition	C1						
	Transport	C2						
	Waste processing	C3						
	Disposal	C4						
Potential benefits and loads beyond the system boundaries	Re-use, recovery, recycling potential	D						

Table A.4 — Parameters describing resource use, secondary materials and fuels, and use of water

Declaration of environmental parameters derived from LCA						
Parameters describing resource use, secondary materials and fuels, and use of water						
			Use of secondary material	**Use of renewable secondary fuels**	**Use of non renewable secondary fuels**	**Net use of fresh water**
			kg	MJ net calorific value	MJ net calorific value	m^3
Product stage	Raw material supply	A1				
	Transport	A2				
	Manufacturing	A3				
	Total (of product stage)	Total				
Construction process stage	Transport	A4				
	Construction installation process	A5				
Use stage	Use	B1				
	Maintenance	B2				
	Repair	B3				
	Replacement	B4				
	Refurbishment	B5				
	Operational energy use	B6				
	Operational water use	B7				
End of life	De-construction, demolition	C1				
	Transport	C2				
	Waste processing	C3				
	Disposal	C4				
Benefits and loads beyond the system boundaries	Re-use, recovery, recycling potential	D				

Table A.5 — Other environmental information describing waste categories

Declaration of environmental parameters derived from LCA					
Other environmental information describing waste categories					
			Hazardous waste disposed	Non hazardous waste disposed	Radioactive waste disposed
			kg	kg	kg
Product stage	Raw material supply	A1			
	Transport	A2			
	Manufacturing	A3			
	Total of product stage	Total			
Construction process stage	Transport	A4			
	Construction installation process	A5			
Use stage	Use	B1			
	Maintenance	B2			
	Repair	B3			
	Replacement	B4			
	Refurbishment	B5			
	Operational energy use	B6			
	Operational water use	B7			
End of life	De-construction /demolition	C1			
	Transport	C2			
	Waste processing	C3			
	Disposal	C4			
Benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D			

Table A.6 — Other environmental information describing output flows

Other environmental information describing output flows	
Components for re-use	kg
Materials for recycling	kg
Materials for energy recovery	kg
Exported energy	MJ per energy carrier

Table A.7 — Scenarios and technical information

Additional technical information (FprEN 15804:2011, Table 7-12)			
Scenario title	**Parameter**	**Units**	**Results**
Use stage related to the building fabric **(FprEN 15804:2011, Table 7)** **A4 Transport to the building site**	Fuel type and consumption of vehicle or vehicle type used for transport e.g. long distance truck, boat	Litre of fuel type per distance or vehicle type, Commission Directive 2007/37/EC (European Emission Standard)	
	Distance	km	
	Capacity utilisation (including empty returns)	%	
	Bulk density of transported products	kg/m^3	
	Volume capacity utilisation factor (factor: = 1 or < 1 or ≥ 1 for compressed or nested packaged products)	Not applicable	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Use stage related to the building fabric **(FprEN 15804:2011, Table 8)** **A5 Installation in the building**	Ancillary materials for installation (specified by material);	kg or other units as appropriate	
	Water use	m^3	
	Other resource use	kg	
	Quantitative description of energy type (regional mix) and consumption during the installation process	kWh or MJ	
	Wastage of materials on the building site before waste processing, generated by the product's installation (specified by type)	kg	
	Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery, disposal (specified by route)	kg	
	Direct emissions to ambient air, soil and water	kg	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Use stage related to the building fabric **(FprEN 15804:2011, Table 9)** **B2 Maintenance**	Maintenance process	Description or source where description can be found	
	Maintenance cycle	Number per RSL or year*	
	Ancillary materials for maintenance (e.g. cleaning agent, specify materials)	kg / cycle	
	Wastage material during maintenance (specify materials)	kg	
	Net fresh water consumption	m^3	
	Energy input during maintenance (e.g. vacuum cleaning), energy carrier type e.g. electricity, and amount, if applicable and relevant	kWh	
	Description of scenario 1	Text	
	Description of scenario n	Text	

Table A.7 — *(continued)*

Use stage related to the building fabric **(FprEN 15804:2011, Table 9)** **B3 Repair**	Repair process	Description or source where description can be found	
	Inspection process	Description or source where description can be found	
	Repair cycle	Number per RSL or year	
	Ancillary materials, (e.g. lubricant, specify materials)	kg or kg / cycle	
	Wastage material during repair, (specify materials)	kg	
	Net fresh water consumption	m^3	
	Energy input during repair (e.g. crane activity), energy carrier type e.g. electricity, and amount	kWh / RSL, kWh / cycle	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Use stage related to the building fabric **(FprEN 15804:2011, Table 9)** **B4 Replacement**	Replacement cycle	Number per RSL or year	
	Energy input during replacement (e.g. crane activity), energy carrier type, (e.g. electricity) and amount if applicable and relevant	kWh	
	Exchange of worn parts during the product's life cycle, (e.g. zinc galvanised steel sheet), specify materials	kg	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Use stage related to the building fabric **(FprEN 15804:2011, Table 9)** **B5 Refurbishment**	Refurbishment process	Description or source where description can be found	
	Refurbishment cycle	Number per RSL or year	
	Energy input during refurbishment (e.g. crane activity), energy carrier type e.g. electricity, and amount if applicable and relevant	kWh	
	Material input for refurbishment (e.g. bricks), including ancillary materials for the refurbishment process (e.g. lubricant, specify materials)	kg or kg / cycle	
	Wastage material during refurbishment, (specify materials)	kg	
	Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants)	units as appropriate	
	Description of scenario 1	Text	
	Description of scenario n	Text	

Table A.7 — *(continued)*

Reference service life(FprEN 15804:2011, Table 10)	Reference service life	Years	
	Declared product properties (at the gate) and finishes, etc.	Units as appropriate	
	Design application parameters (if instructed by the manufacturer), including the references to the appropriate practices	Units as appropriate	
	An assumed quality of work, when installed in accordance with the manufacturer's instructions	Units as appropriate	
	Outdoor environment, (for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature	Units as appropriate	
	Indoor environment (for indoor applications), e.g. temperature, moisture, chemical exposure	Units as appropriate	
	Usage conditions, e.g. frequency of use, mechanical exposure	Units as appropriate	
	Maintenance e.g. required frequency, type and quality and replacement of replaceable components	Units as appropriate	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Use stage related to the operation of the building **(FprEN 15804:2011, Table 11)** **B6 and B7 use of energy and use of water**	Ancillary materials specified by material	kg or units as appropriate	
	Net fresh water consumption	m^3	
	Type of energy carrier (e.g. electricity, natural gas, district heating)	kWh	
	Power output of equipment	kW	
	Characteristic performance (e.g. energy efficiency, emissions, variation of performance with capacity utilisation)	units as appropriate	
	Further assumptions for scenario development, (e.g. frequency and time period of use, number of occupants)	units as appropriate	
	Description of scenario 1	Text	
	Description of scenario n	Text	
End of life of the product **C1-C4** **(FprEN 15804:2011, Table 12)**	Collection process specified by type	kg collected separately	
		kg collected with mixed construction waste	
	Recovery system specified by type	kg for re-use	
		kg for recycling	
		kg for energy recovery	
	Disposal specified by type	kg product or material for final deposition	
	Assumptions for scenario development (e.g. transportation)	units as appropriate	
	Description of scenario 1	Text	
	Description of scenario n	Text	

Table A.8 — Additional information on release of dangerous substances to indoor air, soil and water during the use stage

Additional information on release of dangerous substances to indoor air, soil and water during the use stage			
Scenario title	**Parameter**	**Units**	**Results**
Release scenario Indoor air	Test results according to CEN/TC 351	[a]	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Release scenario Soil	Test results according to CEN/TC 351	[a]	
	Description of scenario 1	Text	
	Description of scenario n	Text	
Release scenario Water	Test results according to CEN/TC 351	[a]	
	Description of scenario 1	Text	
	Description of scenario n	Text	

[a] Emissions to indoor air and releases to soil and water according to the horizontal standards on measurement of release of regulated dangerous substances from construction products using harmonised testing methods according to the provisions of the respective Technical Committees for European product standards, when available.

Annex B
(normative)

Information modules according to FprEN 15804:2011, Figure 1

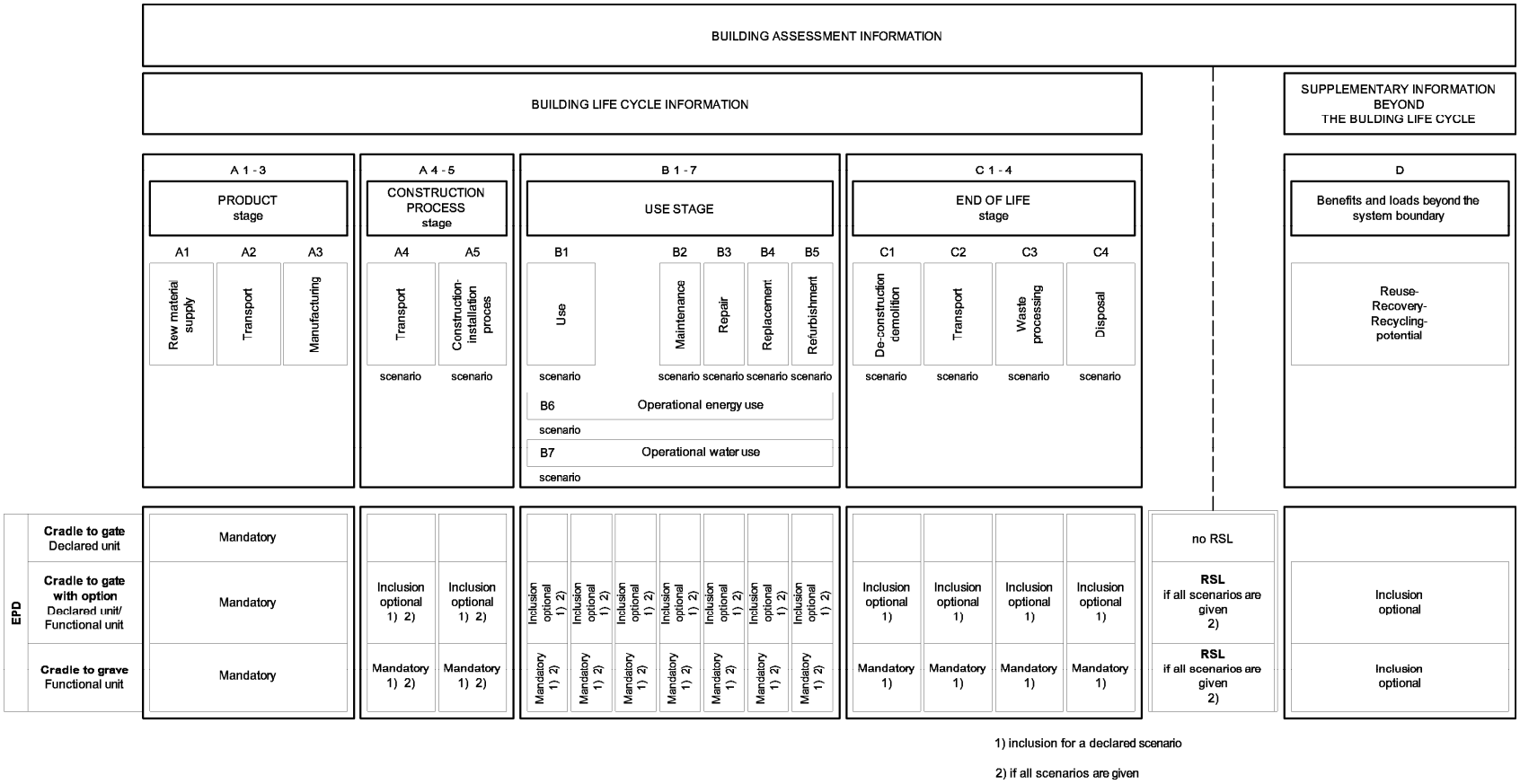

Figure B.1 — Information modules according to FprEN 15804:2011, Figure 1

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[3] FprEN 15643-3, *Sustainability of construction works — Assessment of buildings — Part 3: Framework for the assessment of social performance*

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