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ILNAS-EN 16627:2015

Sustainability of construction works - Assessment of economic performance of buildings - Calculation methods

Contribution des ouvrages de
construction au développement durable
- Évaluation de la performance
économique des bâtiments - Méthodes

Nachhaltigkeit von Bauwerken -
Bewertung der ökonomischen Qualität
von Gebäuden - Berechnungsmethoden

06/2015



National Foreword

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English Version

Sustainability of construction works - Assessment of economic performance of buildings - Calculation methods

Contribution des ouvrages de construction au développement durable - Évaluation de la performance économique des bâtiments - Méthodes de calcul

Nachhaltigkeit von Bauwerken - Bewertung der ökonomischen Qualität von Gebäuden - Berechnungsmethoden

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CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	4
Introduction	5
1 Scope	9
2 Normative references	9
3 Terms and definitions	10
4 Abbreviations	19
5 The process for setting up the calculations required for the assessment.....	20
6 Purpose of the assessment	21
6.1 General.....	21
6.2 Expected users	21
7 Specification of the object of assessment.....	21
7.1 General.....	21
7.2 Functional equivalent.....	22
7.3 Reference study period.....	23
7.4 System boundary.....	24
7.4.1 General.....	24
7.4.2 Boundary of the before use stage (Modules A0-A5).....	25
7.4.3 Boundaries of the use stage (Modules B1 – B7)	28
7.4.4 Boundary of the end of life stage (Modules C1 – C4)	32
7.4.5 Boundary for the benefits and loads beyond the system boundary (Module D)).....	34
7.5 The building model.....	34
7.5.1 Purpose and information needed.....	34
7.5.2 Description of the physical characteristics of the building	35
8 Scenarios for defining the building life cycle	36
8.1 General.....	36
8.2 Requirements for scenarios	36
8.3 Time-related characteristics and associated scenarios.....	36
8.3.1 General.....	36
8.3.2 Climate conditions.....	37
8.3.3 Other specific requirements for scenarios	37
8.4 Scenarios for the pre-construction stage (Module A0).....	37
8.5 Scenarios for the product and construction process stages (Modules A1 – A5).....	37
8.6 Scenarios for use stage (modules B1 to B7)	38
8.6.1 General.....	38
8.6.2 Scenario related to use stage (except energy and water) – Module B1.....	38
8.6.3 Scenarios for maintenance, repair, replacement – Module B2, B3 and B4	38
8.6.4 Scenarios for refurbishment – Module B5	39
8.6.5 Scenarios for operational energy use – Module B6.....	39
8.6.6 Scenarios for operational water use (Module B7).....	39
8.7 Scenarios for the end of life stage (Modules C1 to C4)	40
8.7.1 General.....	40
8.7.2 Scenarios for deconstruction – Module C1	40
8.7.3 Scenarios for transport – Module C2.....	40
8.7.4 Scenarios for waste processing for reuse, recycling and energy recovery – Module C3	40
8.7.5 Scenarios for disposal – Module C4.....	40

8.8	Scenarios beyond the system boundary – Module D	40
9	Calculation of costs and income related to the building over its life cycle	41
9.1	General	41
9.2	Calculation of pre-construction costs.....	41
9.3	Calculation of construction costs	41
9.4	Calculation of costs of operation in use, maintenance and repair (B1-B3)	43
9.5	Calculating costs for replacements (B4).....	45
9.5.1	Components that will not be replaced under defined conditions	45
9.5.2	Replaceable components and costs	45
9.5.3	Cost of replacements	46
9.6	Calculation of energy costs (B6)	46
9.7	Calculation of costs of operational water use.....	47
9.8	Calculation of additional cost and income related information (information module D)	47
9.9	VAT.....	47
10	Selection of economic data for economic assessment	47
10.1	General	47
10.2	Specification of the discount rate.....	47
10.3	Escalation rates	48
10.4	Data quality	48
11	Calculation of the economic indicators	48
11.1	Methods for assessing the economic indicators	48
11.2	Calculation of the discount factor	49
11.3	Net Present Value (NPV), Net Present Cost (NPC)	49
11.4	Annual Cost and Annual Equivalent Value (AC or AEV)	49
11.5	Other economic indicators	49
11.6	Costs and related indicators	49
11.7	Calculation methods	49
12	Reporting of the assessment of results	50
12.1	General information on the assessment.....	50
12.2	General information on the object of assessment.....	50
12.3	Statement of boundaries and scenarios used in the assessment	51
12.4	Data sources	51
12.5	Expression of results	51
12.6	Communication of assessment results	52
13	Verification of results	52
	Annex A (informative) Example building description	54
	Annex B (informative) Exported energy – Case studies	56
B.1	General	56
B.2	Case 1	56
B.3	Case 2	57
B.4	Case 3	57
B.5	Case 4	58
	Annex C (informative) Additional indicators to assess the economic performance of buildings – Rules for assessment	60
C.1	General	60
C.2	Value stability and performance	60
C.2.1	General	60
C.2.2	Value stability in a short-term perspective	60
C.2.3	Value stability and performance in a medium-to long-term perspective	60
C.2.4	Additional economic indicators used in ISO 15686-5.....	61
	Bibliography.....	62

Foreword

This document (EN 16627:2015) 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 December 2015 and conflicting national standards shall be withdrawn at the latest by December 2015.

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.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The purpose of this European Standard is to provide calculation rules for the assessment of the economic performance of new and existing buildings as one part of an assessment of the sustainability of the building. It complements the European Standard EN 15643-4.

In EN 15643-4 the following economic assessment indicators are described:

This standard describes the methods and the rules for calculating the cash flows over the life cycle of buildings, with an emphasis on the field of life cycle costing. Principles developed in ISO 15686-5 are included, but have been adapted for sustainability assessment in the European context.

This standard describes two approaches to the calculation of economic performance:

- a) Life Cycle Costing: Economic performance expressed in cost terms over the life cycle, taking account of negative costs related to energy exports and from re-use and recycling of parts of the building during its life cycle and at the end of life. Calculation of this indicator is mandatory for compliance with the standard.
- b) Life cycle economic balance: Life Cycle Costing (see above) and in addition incomes over the life cycle and at the end of life. Calculation of this additional indicator is optional for compliance with the standard.

NOTE 1 Annex C describes a further optional approach, value stability.

This European Standard is part of a suite of European Standards, Technical Specifications and Technical Reports for the assessment of the economic performance of buildings that together support quantification of the contribution of the assessed building to sustainable construction and sustainable development.

The economic performance of a building is only one aspect of its sustainability. The environmental and social performance of the building are also aspects of sustainability that are assessed as part of a sustainability assessment. These are described in the framework standards (EN 15643-1, EN 15643-2, and EN 15643-3, EN 15643-4).

NOTE 2 The economic assessment is undertaken at the building level. However, it requires technical and cost information about individual products and components within the building and its services and systems, including service life data, type and frequency of inspection, replacement, cleaning, maintenance and repair, and deconstruction and disposal. This information is used as input quantities for the calculation of cost in the life cycle of buildings.

The evaluation of technical and functional performance is beyond the scope of this European Standard. Technical and functional characteristics are taken into account here by reference to the functional equivalent, which also forms a basis for comparison of the results of assessments.

This European Standard is intended to support the decision-making process and documentation of the assessment of the economic performance of a building. Although the assessment results are based on realistic scenarios, they may not fully reflect the actual and future performance of the building. Figure 1 illustrates how the assessment of the economic performance takes place within the concept of the sustainability assessment of buildings.

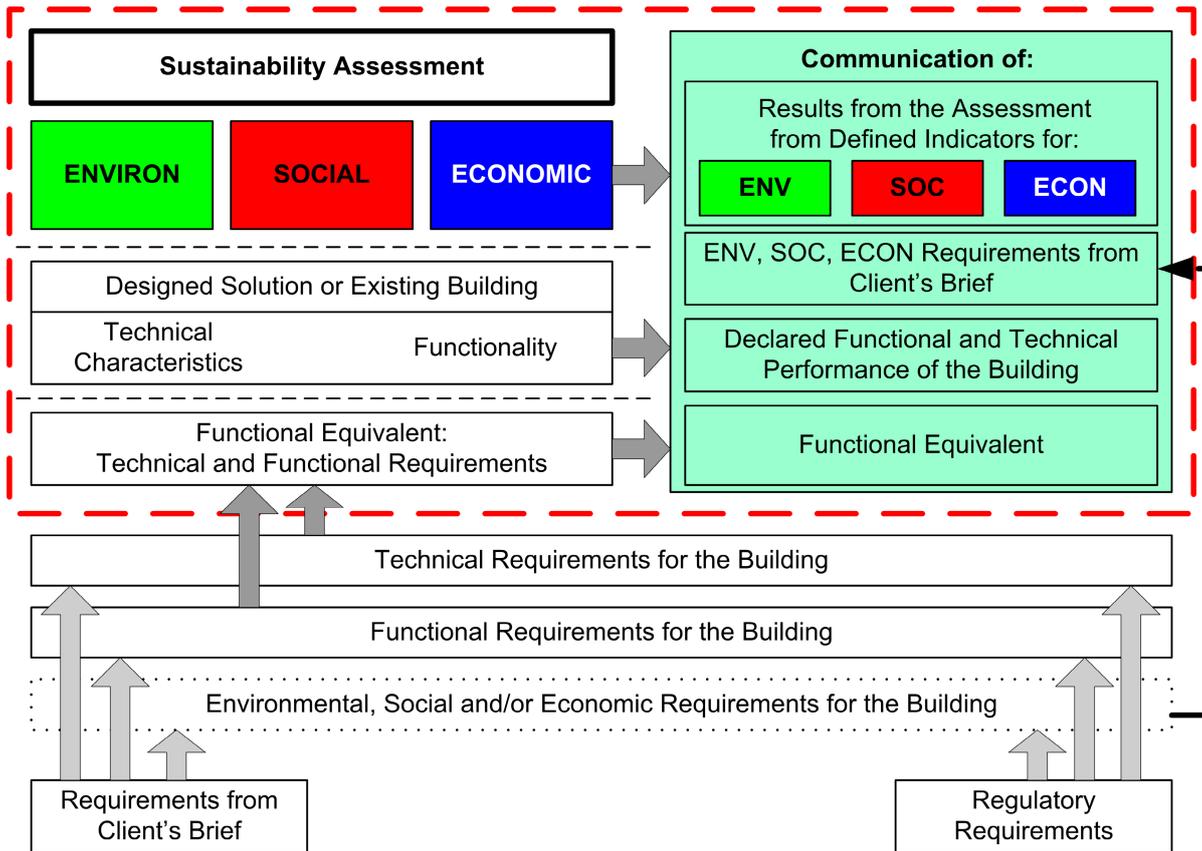


Figure 1 — Concept of sustainability assessment of buildings

In this European Standard, the assessment method for the quantitative evaluation of the economic performance of the building is based on a life cycle, cash flow approach. The general requirements for sustainability assessment of buildings are described in EN 15643-1 (the general framework standard).

It is important to use a consistent model for describing and recording the building and its life cycle for assessing the environmental, social and economic performance. The same reference study period is used for all three elements of the assessment.

Additional specific requirements for the assessment of economic performance are given in EN 15643-4, including additional pre-construction activity and costs such as site costs and professional fees, which are quantified and reported in the additional information module A0.

The calculation of economic indicators uses a model of the building and its life cycle with associated time and financial costs. An economic performance assessment supports a complete sustainability assessment, including an environmental or social performance assessment or both. The economic assessment can also provide data for:

- budgeting, by estimation of future maintenance or operational costs;
- tendering, e.g. by estimation of future cleaning costs sensitivity analysis, e.g. estimation of future energy costs (nominal values);
- estimating end of life costs and waste streams;
- specific economic analyses (e.g. cost benefit analysis);

- assigning cash flows to individual actors (landlord/tenant);
- applying methods of valuation (e.g. investment appraisal).

Other European Standards developed by CEN/TC 350 in this area, and how they are related to this European Standard, are shown in Figure 2.

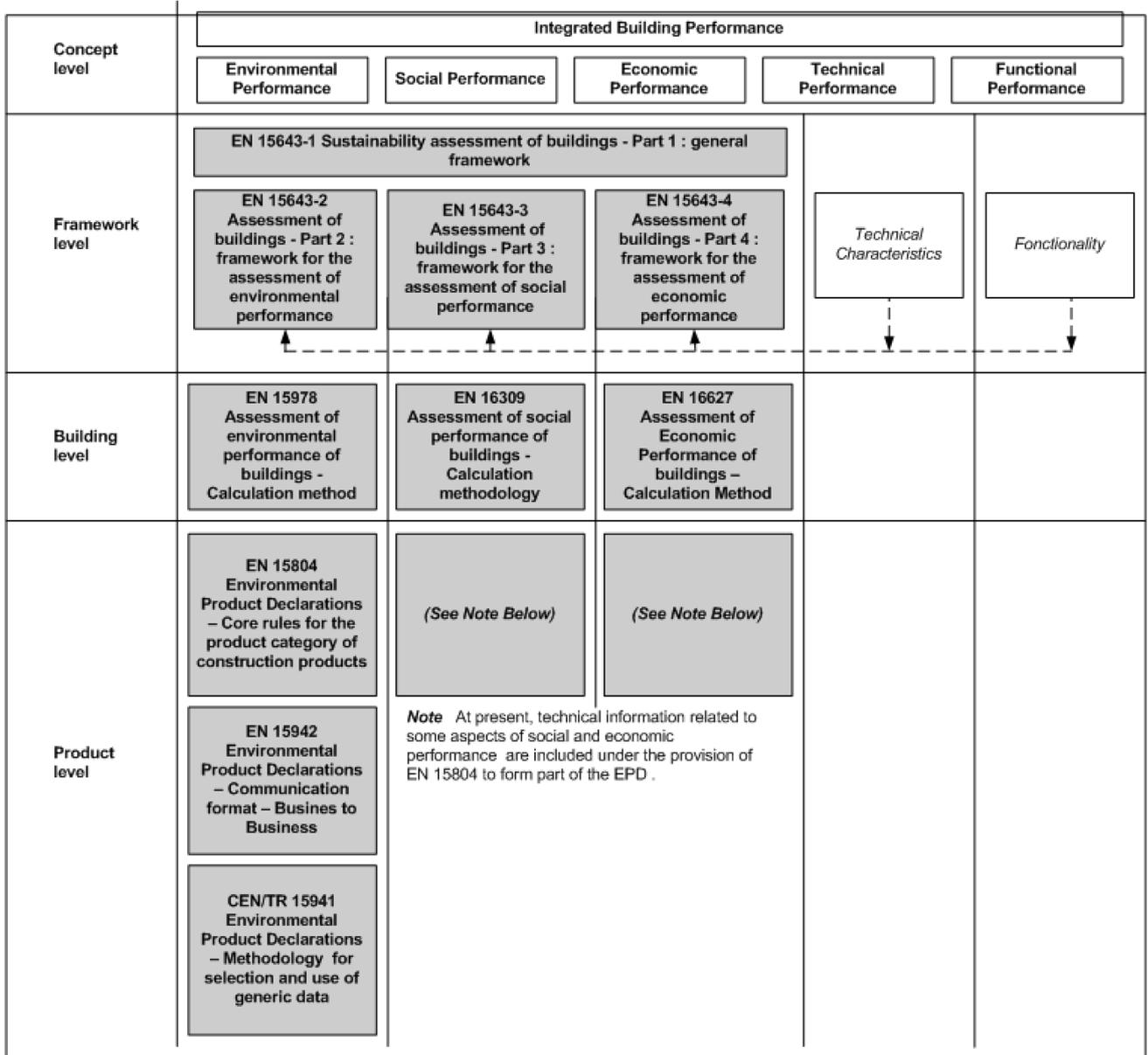


Figure 2 — Work program of CEN/TC 350

NOTE 3 This European Standard is intended for use to assess the economic aspects of sustainable performance of a building. This is a distinct activity from the Commission Delegated Regulation (EU) No 244/2012 of 16 January 2012 supplementing Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings, which is a methodology for the setting of energy performance standards in national and regional building regulations by Member States, and not for use on specific buildings.