EUROPEAN
COMMISSION

Brussels, 10.4.2025
C(2025) 2125 final

ANNEXES 1 to 7

ANNEXES

to the

COMMISSION IMPLEMENTING DECISION

on a standardisation request to the European Committee for Standardisation as regards precast concrete products in support of Regulation (EU) No 305/2011 of the European Parliament and of the Council

ANNEX I

List of new standards to be drafted and list of existing standards to be revised as referred to in Article 1

Table 1: List of new harmonised standards to be drafted and deadlines for their adoption

Reference information		Deadline for the adoption by the ESOs[1]
1.	European standard: 'Precast concrete products performance assessment and declaration' [To covers in its scope solid slabs, HVAC flue elements, junction boxes and products within the scope of EN 15037-1:2008, EN 15037-2:2009+A1:2011, EN 15037-3:2009+A1:2011, EN 15037-4:2010+A1:2013, EN 15037-5:2013, EN 14844:2006+A2:2011, EN 15050:2007+A1:2012, EN 14991:2007, EN 14992:2007+A1, EN 12839:2012, EN 13747:2005+A2:2010, EN 12737:2004+A1:2007, EN 12794:2005+A1:2007, EN 12794:2005+A1:2007/AC:2008, EN 13978:2005, EN 1168:2005+A3:2011, EN 13225:2013, EN 12843:2004, EN 15258:2008, EN 13224:2011, EN 13693:2004+A1:2009, EN 15435:2008, EN 15498:2008 and EN 14843:2007[2]]	15.11.2025
2.	European standard: 'Sustainability of construction works - Environmental product declarations - Product Category Rules for precast lightweight concrete with an open structure and precast autoclaved aerated concrete'	15.11.2025

Table 2: List of existing harmonised standards to be revised and deadlines for their adoption

Reference information		Deadline for the adoption by the ESOs
1.	EN 1520:2011 to cover 'Precast lightweight concrete products with an open structure'	15.11.2025
2.	EN 12602:2016 to cover 'Precast autoclaved aerated concrete products'	15.11.2025
3	EN 16757:2022 'Sustainability of construction works - Environmental product declarations - Product Category Rules for concrete and concrete elements'	15.11.2025

[1] 'Adoption' refers to the relevant European standardisation organisation making an adopted standard available to its members or the public.

[2] See Annex VII.

ANNEX II

Requirements for the standards referred to in Article 1

Part A. General requirements for standards requested in Annex I

1. LEGAL STRUCTURES TO BE SUPPORTED BY THE HARMONISED STANDARDS

The harmonised standards shall support the establishment of a harmonised system as set out in Regulation (EU) No 305/2011.

The harmonised standards shall provide the methods and the criteria for assessing the performance of construction products in relation to their essential characteristics. Those essential characteristics shall be considered from the beginning and throughout the standardisation process.

The harmonised standards shall give only product specific provisions. These product specific provisions include implementation rules in relation to the applicable assessment and verification of constancy of performance as defined in the relevant legal acts. Based on this request the harmonised standards must not support any other legal requirements than those referenced in the first paragraph of this point 1 and in particular shall not:

– make any references to provisions of Regulation (EU) No 305/2011 or reproduce its requirements in their normative body;

– modify any definitions set by Regulation (EU) No 305/2011 or define any legally relevant terms not defined by Regulation (EU) No 305/2011 itself; nor

– address any requirements, responsibilities, contractual arrangements or obligations for any economic operator, notified bodies, market surveillance authorities, or any other body.

Each harmonised standard developed on the basis of the request referred to in Article 1 of this Decision shall refer to this Decision.

In each revised standard, CEN shall include information on significant changes that were introduced in that standard compared to its harmonised predecessor.

A harmonised standard shall not make the assessment and declaration of performance of essential characteristics included in that standard dependent on requirements of administrative or organisational nature. These include management system requirements for organisations, competence requirement for natural persons, normative references to management system standards or any other normative reference.

2. LEGAL REQUIREMENTS TO BE COVERED BY AN INDIVIDUAL HARMONISED STANDARD

2.1. General

In order to publish the references of the harmonised standards requested in Annex I in the Official Journal of the European Union, these standards shall fulfil the requirements laid down in Article 17 Regulation (EU) No 305/2011.

In particular, the essential characteristics addressed in the harmonised standard shall correspond to this standardisation request; the content of harmonised standard shall be in line with the general principles applicable to standardisation under Regulation (EU) No 305/2011.

Where a harmonised standard makes provisions regarding documents to be attached to the declaration of performance, such provisions shall be in line with the instructions provided by the Annex to Commission Delegated Regulation (EU) No 574/2014[3].

CEN shall follow the procedures in place for quality verification of harmonised standard before their adoption.

2.2. References to standards

The harmonised standards shall only contain unequivocal dated normative references to other CEN standards, CEN ISO standards, ISO standards or parts thereof ('supporting standards'). Supporting standards or parts thereof may neither conflict with Union law nor provide for discretion where such discretion has not been laid down in Union law and shall not include direct or indirect references to national provisions.

Supporting standards shall not include normative references to other standards or parts thereof other than those fulfilling the conditions set out in this point. Where these conditions are not fulfilled, the harmonised standard may clarify the referred normative reference, including the dates of the chain of references which are applicable.

2.3. Essential characteristics

In relation to the assessment and declaration of essential characteristics, the standards shall include the following information for each essential characteristic:

(a) the reference assessment method (the standard may offer additional information referring to other supporting standards as regards sampling or testing conditions when needed).

(b) the physical dimensions according to the SI standard: time (T), length (L), mass (M), electric current (I), absolute temperature (K), amount of substance (N) and luminous intensity (J). Other physical quantities can be defined as base quantities, as long as they form a linearly independent basis for each essential characteristic.

(c) the statistical value used for the declaration, usually expressed as the fractile declared and the confidence interval (proportion of confidence intervals that contain the value declared). The statistical value may be specified as such in the standard or using a simplified method. When properly justified, alternative ways to define the statistical value can also be used.

(d) the units in which the performance is expressed, where applicable.

(e) the rounding method used for the declaration, where applicable.

(f) essential characteristics subject to thresholds specified in Part B.2 and C.2 shall be respected. Other thresholds or requirements shall not be included unless properly justified[4].

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[3] Commission Delegated Regulation (EU) No 574/2014 of 21 February 2014 amending Annex III to Regulation (EU) No 305/2011 of the European Parliament and of the Council on the model to be used for drawing up a declaration of performance on construction products, OJ L 159, 28.5.2014, p. 41, ELI: http://data.europa.eu/eli/reg_del/2014/574/oj

[4] Additional legal procedure will be required to establish the threshold value before publishing in the Official Journal of the European Union the references of the harmonised standards.

(g) essential characteristics to be declared using a classification system shall follow the classification systems included in Annex V. Other classification systems shall not be included unless properly justified[5].

For all essential characteristics, the same methods and criteria for assessing the performance shall apply across products, unless it is found necessary, and justified in writing, to apply particular methods and or criteria in relation to particular products.

For the essential characteristics related to the release or emission of dangerous substances, the harmonised standards shall apply assessment methods applicable across materials, consistent with those developed by the Technical Committee dealing with construction products - assessment of release of dangerous substances.

For the essential characteristics related to environmental sustainability, the harmonised standards shall identify and enumerate all the relevant elements of performance related to the whole life cycle of the products concerned. This standardisation work shall be consistent with the most updated version of the horizontal standard dealing with sustainability of construction works - environmental product declarations - core rules for the product category of construction products[6] and with the complementary product category rules defined in the standards requested in Table 1 point 2, and Table 2 point 3 in accordance with the requirements included in Annex III Part C.

2.4. Documents to be attached to the declaration of performance

The standards shall provide information about the relevant documents to be attached to the declaration of performance to express the structural behaviour. The aspects to indicate, when relevant, by such documents cover, but are not limited to, dimensions, tolerances on dimension and shape, drawings, data to be used for structural design calculation, seismic calculations, durability calculation and resistance to fire calculation and the calculated values including when obtained from tabulated values. This information relates but it is not limited to the documents referred for each standard in Parts B.2 and C.2.

The standards shall provide information about how to deal with products manufactured off-the-shelf and made to measure.

2.5. Factory production control clauses

The standards shall provide guidance on the application of factory production control and the technical details necessary for the implementation of the system of assessment and verification of constancy of performance. The standards shall at least cover the applicable factory production control checks referred for each standard in Clauses B.2 and C.2 and the lists included in Annex IV and include all necessary checks related to the applicable essential characteristics. These checks and their results are not included in the declaration of performance.

Part B. Specific requirements for drafting new standards requested in Table 1 of Annex I

[5] Additional legal procedure will be required to establish the classification system before publishing in the Official Journal of the European Union the references of the harmonised standards.

[6] EN 15804:2012+A2:2019+AC:2021.

1. REQUIREMENTS FOR ALL STANDARDS

The harmonised standards shall reflect the generally acknowledged state of art.

The harmonised standards shall refer to the products, intended uses covered by them, essential characteristics, classes, and threshold levels as laid down in Part A.

2. REQUIREMENTS FOR SPECIFIC STANDARDS

Harmonised standards requested in Annex I, Table 1 shall refer to the products, intended uses, essential characteristics, classes, threshold levels, documentation and factory production control checks listed in the corresponding point:

2.1. Standard on precast concrete products requested in Annex I, Table 1, point 1

2.1.1. ***Scope***

The standard shall cover, regardless of if manufactured in factories or in temporary plants on site under the same conditions, the cumulative scopes described in points 2.1.2 to 2.1.30 of this section.

2.1.2. Product group on precast concrete solid slabs

(a) Scope

Precast concrete solid slab elements made of concrete or lightweight concrete having a cross-section without voids or void-formers, intended to be used as structural elements in floors, roofs, landings and balconies. The slabs are self-supporting and can be installed without a structural topping. A structural topping can be added. The cross section is rectangular but may present slopes for drainage, grooves for handling and shear keys.

Balustrades without structural behaviour are excluded from this product definition.

Slabs manufactured using hollow core slabs manufacturing process are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	

	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to attach to the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.3. Product group on precast concrete HVAC flue elements

(a) Scope

Precast concrete HVAC flue elements made of concrete or lightweight concrete intended to be used to convey heating, ventilation, and air conditioning gases.

Products intended to be used to convey smoke from a furnace, boiler or combustion chamber are excluded from this product definition.

Products intended to be used to convey, control or limit smoke and fire propagation are excluded from this product definition.

Products using prestressing steel are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**

concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
water performance (3)	water permeability			
	water vapour permeability - equivalent air layer thickness			
	water vapour permeability - resistance factor			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
	sound absorption coefficient building elements			applicable to the sound absorbing covering materials
other performances (1&7)	mass of the element			
	air tightness class - HVAC flue elements		■	
release of dangerous substances - indoor air (3)	all included in annex III part a			
environmental sustainability (7)	all included in annex III part c			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings, tolerances, joints details and fixings/fastening in thin-walled elements, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV Part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G

2.1.4. Product group on precast concrete junction boxes

(a) Scope

Precast concrete rectangular prismatic junction boxes made of concrete or lightweight concrete intended to be used as structural elements.

Products using prestressing steel are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
mechanical performance (1)	mechanical strength - testing - flexural strength			
	mechanical strength - testing - resistance to concentrated loads bottom			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	stress ratio - reinforcing steel			
	elongation after fracture - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	reaction to fire - class declaration		■	
other performances (1&7)	mass of the element			
	mechanical resistance of rungs			
release of dangerous substances - soil and ground water (3)	all included in annex III part A			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including connections to other elements, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	Comments
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.5. Product group on precast concrete beams and blocks - beams

(a) Scope

[EN 15037-1]

Precast concrete beams made of concrete or lightweight concrete, with or without clay shells, to be used in conjunction with blocks as beam-and-block system and intended to be used as structural elements for floor and roofing systems.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
calculation aided by testing (1)	mechanical strength - calculation aided by physical testing - beam and block - beams			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	beam and block system
	resistance to fire R - class declaration - testing		■	beam and block system
	resistance to fire REI - class declaration - testing		■	beam and block system
thermal performance (6)	thermal conductivity - testing			beam and block system
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			beam and block system
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			beam only
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including cast-in situ concrete. including performance under seismic conditions when relevant.

reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.6. Product group on precast concrete beams and blocks - concrete blocks

(a) Scope

[EN 15037-2]

Precast concrete blocks made of concrete to be used in conjunction with beams as beam-and-block system intended to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	water penetration depth of concrete			hardened concrete
mechanical performance (1)	mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads		■	
	mechanical strength - testing - beams and blocks - blocks - bending strength		■	
	mechanical strength - testing - beams and blocks - blocks - longitudinal compression strength		■	
	mechanical strength - testing - beams and blocks - blocks - transverse strength			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	beam and block system
	resistance to fire R - class declaration - testing		■	beam and block system
	resistance to fire REI - class declaration - testing		■	beam and block system
thermal performance (6)	thermal conductivity - testing			beam and block system
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			beam and block system
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including performance under seismic conditions
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	Comments
detailing	Annex IV part A
release of dangerous substances - leaching	Annex IV part I

2.1.7. Product group on precast concrete beams and blocks - lightweight concrete blocks

(a) Scope

[EN 15037-2]

Precast concrete blocks made of lightweight concrete to be used in conjunction with beams as beam-and-block system intended to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	
	drying shrinkage			
	water penetration depth of concrete			hardened concrete
mechanical performance (1)	mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads		■	
	mechanical strength - testing - beams and blocks - blocks - bending strength		■	
	mechanical strength - testing - beams and blocks - blocks - longitudinal compression strength		■	
	mechanical strength - testing - beams and blocks - blocks - transverse strength			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	beam and block system
	resistance to fire R - class declaration - testing		■	beam and block system
	resistance to fire REI - class declaration - testing		■	beam and block system
thermal performance (6)	thermal conductivity - testing			beam and block system
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			beam and block system
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental	all included in annex III part C			

sustainability (7)				

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including performance under seismic conditions
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
release of dangerous substances - leaching	Annex IV part I

2.1.8. Product group on precast concrete beams and blocks clay blocks

(a) Scope

[EN 15037-3]

Blocks made of clay, with or without clay shells, to be used in conjunction with beams as beam-and-block system intended to be used as structural elements for floor and roofing systems.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
mechanical performance (1)	mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads		■	
	mechanical strength - testing - beams and blocks - blocks - bending strength		■	
	mechanical strength - testing - beams and blocks - blocks - longitudinal compression strength		■	
	mechanical strength - testing - beams and blocks - blocks - transverse strength			
	gross dry density - beams and blocks - clay blocks		■	
	compressive strength - beams and blocks - clay blocks			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	beam and block system
	resistance to fire R - class declaration - testing		■	beam and block system
	resistance to fire REI - class declaration - testing		■	beam and block system
thermal performance (6)	thermal conductivity - testing			beam and block system
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			beam and block system
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
	moisture expansion			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			

environmental sustainability (7)	all included in annex III part C but only when a c-PCR document for the environmental assessment of this material based on a standardisation request is available			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A

2.1.9. Product group on precast concrete beams and blocks - EPS blocks

(a) Scope

[EN 15037-4]

Blocks fully made of EPS or combined with different materials, and permanent formworks made of EPS to be used in conjunction with beams as beam-and-block system intended to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
mechanical performance (1)	mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads		■	
	mechanical strength - testing - beams and blocks - blocks - bending strength			
	mechanical strength - testing - beams and blocks - blocks - longitudinal compression strength			
	mechanical strength - testing - beams and blocks - blocks - transverse strength			
	compressive strength - beams and blocks - EPS blocks			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	beam and block system
	resistance to fire R - class declaration - testing		■	beam and block system
	resistance to fire REI - class declaration - testing		■	beam and block system
thermal performance (6)	thermal conductivity - testing			beam and block system
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			beam and block system
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
environmental sustainability (7)	all included in annex III part C but only when a c-PCR document for the environmental assessment of this			

	material based on a standardisation request is available			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A

2.1.10. Product group on precast concrete beams and blocks - blocks - permanent lightweight formwork

(a) Scope

[EN 15037-5]

Lightweight permanent formworks made of wood, plastic, cardboard, glass reinforced plastic, agglomerated stone, metal or a combination of them to be used as permanent formwork in conjunction with beams as beam-and-block system intended to be used as structural elements.

Lightweight permanent formworks made of EPS are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
mechanical performance (1)	mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads		■	
	mechanical strength - testing - beams and blocks - blocks - bending strength			
	mechanical strength - testing - beams and blocks - blocks - longitudinal compression strength			
	mechanical strength - testing - beams and blocks - blocks - transverse strength			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	beam and block system
	resistance to fire R - class declaration - testing		■	beam and block system
	resistance to fire REI - class declaration - testing		■	beam and block system
thermal performance (6)	thermal conductivity - testing			beam and block system
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			beam and block system
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
environmental sustainability (7)	all included in annex III part C but only when a c-PCR document for the environmental assessment of this material based on a standardisation request is available			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	Comments
detailing	Annex IV part A

2.1.11. Product group on precast concrete box culverts

(a) Scope

[EN 14844]

Precast concrete rectangular cross-section box culverts made of concrete or lightweight concrete intended to be used as structural, light-structural or non-structural continuous elements intended to be used for the creation of voids below ground, cable tunnels and subways.

Products using prestressing steel are excluded from this product definition.

Non-monolithic products are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
calculation aided by testing (1)	mechanical strength - calculation aided by physical testing - box culverts			
fire performance (2)	reaction to fire - class declaration		■	
other performances (1&7)	mass of the element			
release of dangerous substances - soil and ground water (3)	all included in annex III part A			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments

set of drawings	Including joint details, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.12. Product group on precast concrete deck elements for bridges

(a) Scope

[EN 15050]

Precast concrete bridge deck elements made of concrete intended to be used as structural elements.

Abutments, barriers, bumpers, piers, guards and arches are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	reaction to fire - class declaration		■	
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including, joint details, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used.

	including traffic & fatigue calculations when relevant including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.13. Product group on precast concrete cladding elements

(a) Scope

[EN 14992]

Precast concrete cladding elements made of concrete or lightweight concrete intended to be used as non-loadbearing elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	concrete
	characteristic compressive strength lightweight concrete		■	lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water absorption			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - equivalent air layer thickness			
	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and	all included in annex III part B			

ground water (3)				
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.14. Product group on precast concrete fence elements

(a) Scope

[EN 12839]

Precast concrete fence elements made of concrete or lightweight concrete including posts, panels, rails and base panels, intended to be used as light-structural or non-structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
calculation aided by	mechanical strength - calculation aided by physical			

testing (1)	testing - fence elements - panels - loadbearing capacity			
	mechanical strength - calculation aided by physical testing - fence elements - posts - complementary loadbearing capacity			
	mechanical strength - calculation aided by physical testing - fence elements - posts - loadbearing capacity			
	mechanical strength - calculation aided by physical testing - fence elements - rails - loadbearing capacity			
fire performance (2)	reaction to fire - class declaration		■	
other performances (1&7)	mass of the element			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.15. Product group on precast concrete floor plates for floor systems

(a) Scope

[EN 13747]

Precast concrete floor plates made of concrete or lightweight concrete to be used in conjunction with cast-in-situ concrete intended to be used as structural elements.

Products used as deck elements for bridges are excluded from this product definition.

If a major part of the mechanical resistance is taken up by the precast stiffening ribs the product is excluded from this product definition (it is considered either a ribbed floor elements or a hollow core slab).

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete

	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including, joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.16. Product group on precast concrete floor slats for livestock

(a) Scope

[EN 12737]

Precast concrete floor slats for livestock made of concrete or lightweight concrete intended to be used for the housing of livestock.

Products used as load bearing elements other than stock and stockmen are excluded from this product definition.

Prestressed single slat beams are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
mechanical performance (1)	mechanical strength class - floor slats for livestock class		■	
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including performance under seismic conditions when relevant.

reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.17. Product group on precast concrete foundation elements

(a) Scope

[EN 14991]

Precast concrete foundation elements including columns with integrated foundation elements, pocket foundation elements and sockets made of concrete or lightweight concrete intended to be used as structural elements.

Products using prestressing steel are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
other performances (1&7)	mass of the element			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including connection to other elements, detailing as regards

	fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, when calculated or tabulated values are used. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.18. Product group on precast concrete foundation piles

(a) Scope

[EN 12794]

Precast concrete foundation piles and segments of piles made of concrete or lightweight concrete intended to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
mechanical performance (1)	mechanical strength - testing - piles - rigidity of joints class		■	
fire performance (2)	reaction to fire - class declaration		■	
other performances (1&7)	mass of the element			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental	all included in annex III part C			

sustainability (7)				

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including, joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.19. Product group on precast concrete garage boxes

(a) Scope

[EN 13978]

Precast concrete garages as monolithic unit or as kits of single or double sections made of concrete or lightweight concrete intended to be used as structural elements.

Products used as supporting upper structures are excluded from this product definition.

Products using prestressing steel are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
	water absorption			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
water performance (3)	water vapour permeability - equivalent air layer thickness			
	water vapour permeability - resistance factor - testing			
acoustic	airborne sound insulation index - calculation			

performance (5)	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
Set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
Calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
Reference to the methods used	
Exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.20. Product group on precast concrete hollow core slabs

(a) Scope

[EN 1168]

Precast concrete hollow core slabs and solid slabs manufactured in the same way but without hollow cores made of concrete or lightweight concrete to be used in conjunction with cast-in-situ concrete or without it intended to be used as structural elements.

The product definition includes hollow core slabs with a maximum depth of 500 mm for prestressed elements and 300 mm for reinforced elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete

	drying shrinkage			
	water penetration depth of concrete			hardened concrete
	maximum aggregate size			
	tensile splitting strength			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
calculation aided by testing (1)	mechanical strength - testing - hollow core slabs - bending strength			
	mechanical strength - testing - hollow core slabs - tensile strength			
	mechanical strength - calculation aided by physical testing - hollow core slabs - shear capacity			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G

release of dangerous substances - leaching	Annex IV part I

2.1.21. Product group on precast concrete linear structural elements

(a) Scope

[EN 13225]

Precast concrete linear structural elements including columns, beams and frame elements made of concrete or lightweight concrete intended to be used as structural element.

Products used as bridge elements are excluded from this product definition.

Products of less than 4,5 m intended to be used as lintels in masonry wall are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	stress ratio - reinforcing steel			
	elongation after fracture - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the	

declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.22. Product group on precast concrete load bearing wall elements - solid, hollow core, multilayer and composite

(a) Scope

[EN 14992]

Precast concrete hollow core, multilayer and composite wall elements made of concrete or lightweight concrete intended to be used as structural element.

Products used as retaining walls are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
	water absorption			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	water absorption
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - equivalent air layer thickness			
	water vapour permeability - resistance factor - testing			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
other performances (1&7)	mass of the element			

release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including loadbearing compression joints detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including formwork pressure including traffic & fatigue calculations when relevant including performance under seismic conditions
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part F
prestressing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.23. Product group on precast concrete masts and poles

(a) Scope

[EN 12843]

Precast concrete poles (also called masts) made of concrete or lightweight concrete, hollow or solid, reinforced or prestressed, in one piece or composed of elements and their inserts and connectors intended to be used as structural element .

Lighting columns for use in traffic circulation areas are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			

	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
calculation aided by testing (1)	mechanical strength - calculation aided by physical testing - mast and poles - bending			
	mechanical strength - calculation aided by physical testing - mast and poles - load bearing capacity			
	mechanical strength - calculation aided by physical testing - mast and poles - torsion			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
other performances (1&7)	mass of the element			
dangerous substances - soil and ground water	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including opening and joints, detailing as regards connectors, plans, drawings, tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings (in this case applicable to connectors)	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.24. Product group on precast concrete non-load bearing wall elements - composite panels and partitions

(a) Scope

[EN 14992]

Precast concrete composite wall elements made of concrete or lightweight concrete intended to be used as non-loadbearing element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	concrete
	characteristic compressive strength lightweight concrete		■	lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
	water absorption			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - equivalent air layer thickness			
	water vapour permeability - resistance factor - testing			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI, when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	Comments
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part F

prestressing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.25. Product group on precast concrete retaining wall elements

(a) Scope

[EN 15258]

Precast concrete retaining walls made of concrete or lightweight concrete intended to be used as structural element.

Retaining walls intended to retain tanks or reservoirs of liquids are excluded from this product definition.

Precast diaphragm walls (concrete sheet piling) are also excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
	water absorption			
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	reaction to fire - class declaration		■	
water performance (3)	water vapour permeability - equivalent air layer thickness			
	water vapour permeability - resistance factor - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including stem-base description for retaining cantilever walls, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including traffic & fatigue calculations when relevant including performance under seismic conditions when relevant.
reference to the methods used	

exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.26. Product group on precast concrete ribbed floor elements

(a) Scope

[EN 13224]

Precast concrete ribbed floor elements made of concrete or lightweight concrete intended to be used as structural element for floors and roofs.

Floor plates for floor systems are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous	all included in annex III part A			

substances - indoor air (3)				
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.27. Product group on precast concrete solid, hollow, multilayer and special roof elements

(a) Scope

[EN 13693]

Precast concrete solid, hollow, multilayer and special roof elements made of concrete or lightweight concrete intended to be used as structural element.

Ribbed floor elements are excluded from this product definition.

Floor slabs elements are also excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength		■	mandatory declaration for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete

reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
dangerous substances - indoor air	all included in annex III part A			
dangerous substances - soil and ground water	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including shape, components, supports, connections, and complementary elements, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including beam-like behaviour, hyperstatic plate-systems behaviour, isostatic plate-system behaviour, and resistance verifications. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.28. Standard on precast concrete shuttering blocks

(a) Scope

[EN 15435]

Precast concrete hollow core shuttering blocks made of concrete or lightweight concrete to be used for form walls and partitions intended to be used as load bearing and non-loadbearing elements.

Masonry units are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water absorption			
mechanical performance (1)	mechanical strength - testing - shuttering blocks - flexural strength of shells			
	mechanical strength - testing - shuttering blocks - tensile strength of webs			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards fixings, plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including thermal insulation adhesion where relevant including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	Comments
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
release of dangerous substances - leaching	Annex IV part I

2.1.29. Product group on precast concrete woodchip shuttering blocks

(a) Scope

[EN 15498]

Precast concrete wood-chip hollow core shuttering blocks to be used for form walls and partitions intended to be used as load bearing and non-loadbearing elements in conjunction with concrete infill. These products are not intended to be used unfilled.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	water absorption			
mechanical performance (1)	mechanical strength - testing - woodchip concrete shuttering blocks - flexural strength of shells			
	mechanical strength - testing - woodchip concrete shuttering blocks - tensile strength of webs			
fire performance (2)	propensity to undergo continuous smouldering			
	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including detailing as regards fixings, plans, drawings and tolerances.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including thermal insulation adhesion where relevant including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	Comments
detailing	Annex IV part A
concrete	Annex IV part B

2.1.30. Product group on precast concrete stairs

(a) Scope

[EN 14843]

Precast concrete stairs (monolithic) made of concrete or lightweight concrete intended to be used as structural element and kits of stairs constructed from individual steps.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength		■	mandatory declaration

				for concrete
	characteristic compressive strength lightweight concrete		■	mandatory declaration for lightweight concrete
	dry density lightweight concrete	≥800 kg/m^3 ≤2000 kg//m^3	■	mandatory declaration for lightweight concrete
	drying shrinkage			
	maximum aggregate size			
	water penetration depth of concrete			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
prestressing steel (1)	elongation at maximum load - prestressing steel			products reinforced with prestressing steel
	tensile 0,1 proof stress - prestressing steel			
	tensile 0,2 proof stress - prestressing steel			
	ultimate tensile strength - prestressing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
acoustic performance (5)	impact sound insulation - calculation			
	impact sound insulation - testing			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product

Type of FPC	**Comments**
detailing	Annex IV part A
concrete	Annex IV part B
lightweight concrete	Annex IV part C
fixings	Annex IV part E
prestressing steel	Annex IV part F
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.2. Standard on Product Category Rules for precast concrete, lightweight concrete, and autoclaved aerated concrete elements requested in Table 1, points 2 and 3

The technical content shall establish complementary product category rules (c-PCR) applicable to products covered by Part C.2.1 (lightweight concrete with an open structure) and Part C.2.2 (autoclaved aerated concrete).

The standards shall enable the whole life cycle analysis of the products concerned and the declaration of their performance in relation to the essential characteristic environmental sustainability. This standardisation work shall be based on the standards developed in the framework of the standardisation mandate M/350 "development of horizontal standardised methods for the assessment of the integrated environmental performance of buildings" of 29 March 2004 as amended in particular EN 15804:2012+A2:2019/AC:2021 'Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products'.

The c-PCR shall focus on the assessment of the precast concrete element and the use of reliable data provided by the suppliers and service providers involved in the manufacturing process.

The product category rules shall cover:

– Guidance about the modelling approaches to be applied to the processes related to the product. This additional information is not restricted to the manufacturing processes and inputs. It can be applied to transport or end of life procedures and must be revised when new technologies are implemented in the market.

– Recommendations about system boundaries to achieve a high degree of harmonisation whilst respecting applicable rules defined in the standards developed in the framework of the standardisation mandate M/350. In case issues related to the end-of-life are identified as resulting in assessment divergences, they must be addressed in a coherent way.

– Offer default data for processes, inputs, and outputs according to the worst-case scenario principle and to be used only if more reliable data is not available (similar to the use of tabulated values in many harmonised standards) under the condition that these external data sources are also reliable and representative.

– Specific rules about the determination of the functional/declared unit to be used. The relevant product standard can complement these rules with additional details. The environmental performance of the product shall relate to the product type as it was placed on the market;

– General information about the environmental sustainability scenarios and where possible product specific rules.

– The scenarios to be considered are available in Annex VI, other scenarios may also be included if relevant for the products included in the scope of the c-PCR. Further refinement of the harmonised scenario and description is possible when properly justified.

– Only in exceptional circumstances product specific rules can be further refined in product standard.

Part C. Specific requirements for revision of existing standards requested in Table 2 of Annex I

1. REQUIREMENTS FOR ALL STANDARDS

The harmonised standards shall reflect the generally acknowledged state of art.

The harmonised standards shall refer to the products, intended uses covered by them, essential characteristics, classes, and threshold levels as laid down in Part A.

2. REQUIREMENTS FOR SPECIFIC STANDARDS

Harmonised standards requested in Annex I Table 2 shall refer to the products, intended uses, essential characteristics, classes threshold levels, documentation and factory production control checks listed in the corresponding point:

2.1. Standard on precast lightweight concrete with an open structure requested in Annex I, Table 2, point 1

2.1.1. ***Scope***

The standard shall cover, regardless of if manufactured in factories or in temporary plants on site under the same conditions, the cumulative scopes described in points 2.1.2 to 2.1.11 of this section.

2.1.2. Product group on precast concrete solid, hollow core and multilayer load bearing wall elements made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete solid, hollow core and multilayer wall elements made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended to be used as structural element.

Products used as retaining walls are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	creep lightweight concrete with an open structure - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete - longitudinal load			
	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - lightweight open structure			

	concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal transmittance lightweight concrete with an open structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including loadbearing compression joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.3. Product group on precast concrete solid, hollow core and multilayer non-load bearing wall elements

(a) Scope

[EN 1520]

Precast concrete solid, hollow core and multilayer wall elements made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended not to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
thermal performance (6)	thermal transmittance lightweight concrete with an open structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including loadbearing compression joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided.

	including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.4. Product group on precast concrete retaining wall elements made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete retaining walls made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended to be used as structural element.

Retaining walls intended to retain tanks or reservoirs of liquids are excluded from this product definition.

Precast diaphragm walls (concrete sheet piling) are also excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	creep lightweight concrete with an open structure - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
water performance	water vapour permeability - resistance factor - testing			

(3)	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
Set of drawings	including loadbearing compression joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
Calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
Reference to the methods used	
Exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.5. Product group on precast concrete solid, hollow core and multilayer roof elements made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete solid, hollow core and multilayer roof elements made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended to be used as structural element.

Ribbed floor elements are excluded from this product definition.

Floor slabs elements are also excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration

	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	creep lightweight concrete with an open structure - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal transmittance lightweight concrete with an open structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
	sound absorption coefficient building elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including shape, components, supports, connections and complementary elements, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including beam-like behaviour, hyperstatic plate-systems behaviour, isostatic plate-system behaviour and resistance verifications in case calculations are supported by testing, test reports to be provided.

	including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.6. Product group on precast concrete solid, hollow core and multilayer floor elements made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete solid, hollow core and multilayer floor elements made of lightweight concrete with an open structure intended, and with a dry density between 400 and 2000 kg/m^3, intended to be used as structural element.

Floor elements with the intended use to carry traffic loads are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	creep lightweight concrete with an open structure - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance	thermal transmittance lightweight concrete with an open			

(6)	structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
	sound absorption coefficient building elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including beam-like behaviour, hyperstatic plate-systems behaviour, isostatic plate-system behaviour and resistance verifications. in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.1.7. Product group on precast concrete solid and hollow core beams made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete solid, hollow core beams made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	creep lightweight concrete with an open structure - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
thermal performance (6)	thermal transmittance lightweight concrete with an open structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant including fatigue when relevant. in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	Comments

detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.8. Product group on precast concrete solid piers made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete solid piers made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	creep lightweight concrete with an open structure - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete - longitudinal load			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
thermal performance (6)	thermal transmittance lightweight concrete with an open structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
Set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
Calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
Reference to the methods used	
Exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.9. Product group on precast concrete cladding elements made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete cladding elements made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended to be used as non-loadbearing elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - lightweight open structure concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
thermal performance	thermal transmittance lightweight concrete with an open			

(6)	structure - testing			
	thermal transmittance lightweight concrete with an open structure - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.10. Product group on precast concrete box culverts made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete rectangular cross-section box culverts made of lightweight concrete, and with a dry density between 400 and 2000 kg/m^3, with an open structure intended not to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			

	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.1.11. Product group on precast concrete components for noise barriers made of lightweight concrete with an open structure

(a) Scope

[EN 1520]

Precast concrete components for noise barriers made of lightweight concrete with an open structure, and with a dry density between 400 and 2000 kg/m^3, intended not to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength lightweight concrete with an open structure		■	mandatory declaration
	dry density lightweight concrete with an open structure	≥400 kg/m^3 ≤2000 kg/m^3	■	mandatory declaration
	modulus of elasticity lightweight concrete with an open structure - testing			
	modulus of elasticity lightweight concrete with an open structure - calculation			
	drying shrinkage lightweight concrete with an open structure - testing			
	drying shrinkage lightweight concrete with an open structure - tabulated values			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
fire performance (2)	reaction to fire - class declaration		■	
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	Comments
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	Comments
detailing	Annex IV part A
lightweight concrete	Annex IV part C
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.2. Standard on Prefabricated reinforced components of autoclaved aerated concrete requested in Annex I, Table 2, point 2

*2.2.1. **Scope***

The standard shall cover, regardless of if manufactured in factories or in temporary plants on site under the same conditions, the cumulative scopes described in points 2.2.1 to 2.2.10 of this section.

2.2.2. Product group on precast concrete solid, hollow core and multilayer load bearing wall elements made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete solid, hollow core and multilayer wall elements autoclave aerated concrete made of autoclave aerated concrete intended to be used as structural element.

Products used as retaining walls are excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	Essential characteristic	EU threshold	Class	Comments
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	mandatory declaration
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	creep autoclaved aerated concrete - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing - autoclaved aerated concrete - longitudinal load			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - and autoclaved aerated concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
	resistance to fire REI-M - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			

water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including loadbearing compression joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, REI and REI-M when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.2.3. Product group on precast concrete solid, hollow core and multilayer non-load bearing wall elements made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete solid, hollow core and multilayer wall elements made of autoclave aerated concrete intended not to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			

	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire EI-M - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including loadbearing compression joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel..
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI and EI-M when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D

fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.2.4. Product group on precast concrete retaining wall elements made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete retaining walls made of autoclave aerated concrete intended to be used as structural element.

Retaining walls intended to retain tanks or reservoirs of liquids are excluded from this product definition.

Precast diaphragm walls (concrete sheet piling) are also excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	creep autoclaved aerated concrete - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and	all included in annex III part B			

ground water (3)				
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.2.5. Product group on precast concrete solid, hollow core and multilayer roof elements made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete solid, hollow core and multilayer roof elements made of autoclave aerated concrete intended to be used as structural element.

Ribbed floor elements are excluded from this product definition.

Floor slabs elements are also excluded from this product definition.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	creep autoclaved aerated concrete - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			

	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
	sound absorption coefficient building elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including shape, components, supports, connections and complementary elements, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. including beam-like behaviour, hyperstatic plate-systems behaviour, isostatic plate-system behaviour and resistance verifications. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E

reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.2.6. Product group on precast concrete solid, hollow core and multilayer floor elements made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete solid, hollow core and multilayer floor elements made of autoclave aerated concrete intended to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	creep autoclaved aerated concrete - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
	resistance to fire R - class declaration - testing		■	
	resistance to fire REI - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	impact sound insulation - calculation			
	impact sound insulation - testing			
	sound absorption coefficient building elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			

environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	Including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R, EI, and REI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
lattice girders	Annex IV part H
release of dangerous substances - leaching	Annex IV part I

2.2.7. Product group on precast concrete solid and hollow core beams made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete solid, hollow core beams made of autoclave aerated concrete intended to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	creep autoclaved aerated concrete - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete			

	- loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - longitudinal load			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.2.8. Product group on precast concrete solid piers made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete solid piers made of autoclave aerated concrete intended to be used as structural element.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated		■	mandatory declaration

	concrete			
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	creep autoclaved aerated concrete - testing			
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - longitudinal load			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire R - class declaration - testing		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire R when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E

reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.2.9. Product group on precast concrete cladding elements made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete cladding elements made of autoclave aerated concrete intended to be used as non-loadbearing elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - in plane shear			
	mechanical strength - testing - autoclaved aerated concrete - rigidity of joints - out of plane shear			
fire performance (2)	reaction to fire - class declaration		■	
thermal performance (6)	thermal conductivity - testing			
	thermal conductivity - tabulated values			
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including traffic & fatigue calculations when relevant.

	in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.2.10. Product group on precast concrete box culverts made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete rectangular cross-section box culverts made of autoclave aerated concrete intended not to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
fire performance (2)	reaction to fire - class declaration		■	
	resistance to fire EI - class declaration - testing		■	
water performance (3)	water vapour permeability - resistance factor - testing			
	water vapour permeability - resistance factor - tabulated value			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental	all included in annex III part C			

sustainability (7)				

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
Set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
Calculations when forming a basis for the declaration	including basis for the calculation of resistance to fire EI when calculated or tabulated values are used. including traffic & fatigue calculations when relevant. in case calculations are supported by testing, test reports to be provided. thermal prestress to be included when applicable. including performance under seismic conditions when relevant.
Reference to the methods used	
Exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part I

2.2.11. Product group on precast concrete components for noise barriers made of autoclave aerated concrete

(a) Scope

[EN 12602]

Precast concrete components for noise barriers made of autoclave aerated concrete intended not to be used as structural elements.

(b) Essential characteristics, classes, and thresholds

Group (BRCW)	**Essential characteristic**	**EU threshold**	**Class**	**Comments**
concrete (1)	characteristic compressive strength autoclaved aerated concrete		■	mandatory declaration
	dry density autoclaved aerated concrete	≥250 kg/m^3 ≤1000 kg/m^3	■	
	modulus of elasticity autoclaved aerated concrete - testing			
	modulus of elasticity autoclaved aerated concrete - calculation			
	drying shrinkage autoclaved aerated concrete - testing		■	
	freeze-thaw resistance of concrete			hardened concrete
	corrosion protection			hardened concrete
reinforcing steel (1)	elongation at maximum load - reinforcing steel			products reinforced with steel, galvanised steel or stainless steel
	elongation after fracture - reinforcing steel			
	stress ratio - reinforcing steel			
	tensile yield strength - reinforcing steel			
	ultimate tensile strength - reinforcing steel			
mechanical performance (1)	mechanical strength - testing- autoclaved aerated concrete - flexural strength			
	mechanical strength - testing- autoclaved aerated concrete - loadbearing capacity under transverse load			
fire performance (2)	reaction to fire - class declaration		■	
water performance	water vapour permeability - resistance factor - testing			

(3)	water vapour permeability - resistance factor - tabulated value			
acoustic performance (5)	airborne sound insulation index - calculation			
	airborne sound insulation index - testing			
	sound absorption coefficient building elements			
	sound absorption coefficient traffic elements			
other performances (1&7)	mass of the element			
release of dangerous substances - indoor air (3)	all included in annex III part A			
release of dangerous substances - soil and ground water (3)	all included in annex III part B			
environmental sustainability (7)	all included in annex III part C			

(c) Documents to be provided together with the declaration of performance

Documents	**Comments**
set of drawings	including joints, detailing as regards fixings, plans, drawings and tolerances, and stress-strain curve of the reinforcing steel.
calculations when forming a basis for the declaration	including traffic & fatigue calculations when relevant in case calculations are supported by testing, test reports to be provided thermal prestress to be included when applicable.. including performance under seismic conditions when relevant.
reference to the methods used	
exposure scenarios for durability when forming a basis for the declaration	

(d) Factory production control checks applicable to this product:

Type of FPC	**Comments**
detailing	Annex IV part A
autoclaved aerated concrete	Annex IV part D
fixings	Annex IV part E
reinforcing steel	Annex IV part G
release of dangerous substances - leaching	Annex IV part i

2.3. Standard on Product Category Rules for concrete and concrete elements requested in Table 2, point 3

The technical content shall establish complementary product category rules (c-PCR) applicable to products covered by Part B.2.1 excluding product families described in Part B.2.1.8, Part B.2.1.9 and Part B.2.1.10

The standards shall enable the whole life cycle analysis of the products concerned and the declaration of their performance in relation to the essential characteristic environmental sustainability. This standardisation work shall be based on the standards developed in the framework of the standardisation mandate M/350 “development of horizontal standardised methods for the assessment of the integrated environmental performance of buildings” of 29 March 2004 as amended in particular EN 15804:2012+A2:2019/AC:2021 ‘Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products’.

The c-PCR shall focus on the assessment of the precast concrete element and the use of reliable data provided by the suppliers and service providers involved in the manufacturing process.

The product category rules shall cover:

– Guidance about the modelling approaches to be applied to the processes related to the product. This additional information is not restricted to the manufacturing processes and inputs. It can be applied to transport or end of life procedures and must be revised when new technologies are implemented in the market.

– Recommendations about system boundaries to achieve a high degree of harmonisation whilst respecting applicable rules defined in the standards developed in the framework of the standardisation mandate M/350. In case issues related to the end-of-life are identified as resulting in assessment divergences, they must be addressed in a coherent way.

– Offer default data for processes, inputs, and outputs according to the worst-case scenario principle and to be used only if more reliable data is not available (similar to the use of tabulated values in many harmonised standards) under the condition that these external data sources are also reliable and representative.

– Specific rules about the determination of the functional/declared unit to be used. The relevant product standard can complement these rules with additional details. The environmental performance of the product shall relate to the product type as it was placed on the market;

– General information about the environmental sustainability scenarios and where possible product specific rules.

– The scenarios to be considered are available in Annex VI, other scenarios may also be included if relevant for the products included in the scope of the c-PCR. Further refinement of the harmonised scenario and description is possible when properly justified.

– Only in exceptional circumstances product specific rules can be further refined in product standard.

ANNEX III
List of essential characteristics related to release of dangerous substances and environmental sustainability

Part A. List of essential characteristics related to release of dangerous substances to indoor air (only products in contact with indoor air)

(1) release of dangerous substances - emission to indoor air - acetaldehyde

(2) release of dangerous substances - emission to indoor air - benzene

(3) release of dangerous substances - emission to indoor air - dibutyl phthalate

(4) release of dangerous substances - emission to indoor air - ethylhexyl phthalate

(5) release of dangerous substances - emission to indoor air - formaldehyde

(6) release of dangerous substances - emission to indoor air - toluene

(7) release of dangerous substances - emission to indoor air - trichlorethylene

Part B. List of essential characteristics related to release of dangerous substances to soil and ground water (only products in contact with soil and ground water)

(1) release of dangerous substances - leaching - antimony

(2) release of dangerous substances - leaching - arsenic

(3) release of dangerous substances - leaching - barium

(4) release of dangerous substances - leaching - benzene

(5) release of dangerous substances - leaching - bromine

(6) release of dangerous substances - leaching - cadmium

(7) release of dangerous substances - leaching - chlorine

(8) release of dangerous substances - leaching - chromium, total

(9) release of dangerous substances - leaching - cobalt

(10) release of dangerous substances - leaching - copper

(11) release of dangerous substances - leaching - ethylbenzene

(12) release of dangerous substances - leaching - fluoride

(13) release of dangerous substances - leaching - lead

(14) release of dangerous substances - leaching - mercury

(15) release of dangerous substances - leaching - mineral oil

(16) release of dangerous substances - leaching - molybdenum

(17) release of dangerous substances - leaching - nickel

(18) release of dangerous substances - leaching - pcbs sum

(19) release of dangerous substances - leaching - phenol

(20) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - anthracene

(21) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - benzo(a)anthracene

(22) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - benzo(a)pyrene

(23) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - benzo(ghi)perylene

(24) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - benzo(k)fluoranthene

(25) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - chrysene

(26) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - indeno (1,2,3cd) pyrene

(27) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - fluoranthene

(28) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - naphthalene

(29) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - phenantrene

(30) release of dangerous substances - leaching - polycyclic aromatic hydrocarbons (pah) - sum

(31) release of dangerous substances - leaching - selenium

(32) release of dangerous substances - leaching - sulphate

(33) release of dangerous substances - leaching - tin

(34) release of dangerous substances - leaching - toluene

(35) release of dangerous substances - leaching - vanadium

(36) release of dangerous substances - leaching - xylenes

(37) release of dangerous substances - leaching - zinc

Part C. List of essential characteristics related to environmental sustainability

(1) reference service life

(2) climate change - total

(3) climate change - fossil

(4) climate change - biogenic

(5) climate change - land use and land use change

(6) ozone depletion

(7) acidification

(8) eutrophication aquatic freshwater

(9) eutrophication aquatic marine

(10) eutrophication terrestrial

(11) photochemical ozone formation

(12) depletion of abiotic resources - minerals and metals

(13) depletion of abiotic resources - fossil fuels

(14) water use

(15) particulate matter emissions

(16) ionising radiation, human health

(17) ecotoxicity (freshwater)

(18) human toxicity, cancer effects

(19) human toxicity, non- cancer effects

(20) land use related impacts / soil quality

(21) use of renewable primary energy excluding renewable primary energy resources used as raw materials

(22) use of renewable primary energy resources used as raw materials

(23) total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)

(24) use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials

(25) use of non-renewable primary energy resources used as raw materials

(26) total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)

(27) use of secondary material

(28) use of renewable secondary fuels

(29) use of non-renewable secondary fuels

(30) net use of fresh water

(31) hazardous waste disposed

(32) non-hazardous waste disposed

(33) radioactive waste disposed

(34) components for re-use

(35) materials for recycling

(36) materials for energy recovery

(37) exported energy

(38) biogenic carbon content in product

(39) biogenic carbon content in accompanying packaging

ANNEX IV
List of factory production control checks

Checks may include check the document provided by the supplier, specific procedures performed on site (as a proxy of the fulfilment of the check) or testing (only if testing period allows it and is feasible).

Part A. Factory production control checks related to detailing

(1) dimensions

(2) dimensional tolerances

Part B. Factory production control checks related to concrete

(1) cement type

(2) cement content

(3) alkali content of cement

(4) cement strength class

(5) air content of fresh concrete

(6) air void characteristics

(7) water vapour permeability (if not assessed as a separate essential characteristic)

(8) water/cement ratio

(9) fines content

(10) chloride content

(11) content of solid material in water

(12) silica fume content

(13) fly ash content

(14) other additions content

(15) recycled aggregates content

(16) frost-resistance (aggregates)

(17) alkali-silica sensitivity (aggregates)

(18) alkali sensitivity (hardened concrete)

(19) shrinkage (if not assessed as a separate essential characteristic)

Part C. Factory production control checks related to lightweight concrete

(1) cement type

(2) cement content

(3) cement content of alkali

(4) cement strength class

(5) dry density (if not assessed as a separate essential characteristic)

(6) creep (if not assessed as a separate essential characteristic)

(7) modulus of elasticity (if needed as complementary information for calculations)

(8) coefficient of thermal expansion (if needed as complementary information for calculations)

(9) concrete tensile strength (when needed due to specific calculations)

(10) air content

(11) air void characteristics

(12) water vapour permeability (if not assessed as a separate essential characteristic)

(13) water/cement ratio

(14) fines content

(15) chloride content

(16) content of solid material in water

(17) silica fume content

(18) fly ash content

(19) other additions

(20) recycled aggregates

(21) frost-resistance (aggregates)

(22) alkali-silica sensitivity (aggregates)

(23) alkali sensitivity (hardened concrete)

(24) shrinkage (if not assessed as a separate essential characteristic)

Part D. Factory production control checks related to autoclaved aerated concrete

(1) material use

(2) curing process

Part E. Factory production control checks related to fixings

(1) strength of fixing

Part F. Factory production control checks related to prestressing steel

(1) primary material - chemical content - prestressing steel

(2) primary material - upper limits steel pests - prestressing steel

(3) primary material - internal defects - prestressing steel

(4) surface conditions - profiled - prestressing steel

(5) surface conditions - threaded - prestressing steel

(6) surface conditions - roundness - prestressing steel

(7) cross section - prestressing steel

(8) constriction at break - prestressing steel

(9) elasticity modulus - prestressing steel

(10) fatigue resistance - prestressing steel

(11) relaxation behaviour - prestressing steel

(12) insensitivity to hydrogen-induced stress corrosion cracking - prestressing steel

(13) stress ratio

(14) durability of the protection/greased - prestressing steel

Part G. Factory production control checks related to reinforcing steel and reinforcing stainless steel

(1) weldability - reinforcing steel

(2) nominal cross sectional area - reinforcing steel

(3) bending behaviour - reinforcing steel

(4) bond strength - reinforcing steel

(5) chemical composition - reinforcing steel

(6) fatigue resistance - reinforcing steel

(7) modulus of elasticity -reinforcing steel

(8) surface geometry - reinforcing steel

(9) protection - reinforcing steel

(10) bending behaviour - reinforcing steel

(11) reverse bending behaviour - reinforcing steel

Part H. Factory production control checks related to lattice girders

(1) weld shear force - strength of the welded joint - lattice girders

(2) weld shear force - strength of anchorage of the diagonals by welding spot and bending - lattice girder

(3) weld shear force - fatigue of anchorage of the diagonals by welding spot and bending - lattice girder

(4) weld shear force - strength of a single spot weld - lattice girder

Part I. Factory production control checks related to release of dangerous substances - leaching

(1) release of dangerous substances - leaching - barium - constituents

(2) release of dangerous substances - leaching - chromium VI - constituents

(3) release of dangerous substances - leaching - chromium, total - constituents

(4) release of dangerous substances - leaching - cyanide - constituents

(5) release of dangerous substances - leaching - lead - constituents

(6) release of dangerous substances - leaching - mercury - constituents

(7) release of dangerous substances - leaching - selenium - constituents

(8) release of dangerous substances - leaching - thallium - constituents

(9) release of dangerous substances - leaching - vanadium - constituents

ANNEX V
Essential characteristics declared using a classification system

Part A. Classes of performance

Essential characteristics listed in Annex II as declared using a classification system shall use the following classification systems.

(1) characteristic compressive strength

essential characteristic	declaration	minimum characteristic cylinder value (MPa)	minimum characteristic cube value (MPa)
characteristic compressive strength	C8/10	8	10
	C12/15	12	15
	C16/20	16	20
	C20/25	20	25
	C25/30	25	30
	C30/37	30	37
	C35/45	35	45
	C40/50	40	50
	C45/55	45	55
	C50/60	50	60
	C55/67	55	67
	C60/75	60	75
	C70/85	70	85
	C80/95	80	95
	C90/105	90	105
	C100/115	100	115

(2) characteristic compressive strength lightweight concrete

essential characteristic	declaration	minimum characteristic cylinder value (MPa)	minimum characteristic cube value (MPa)
characteristic compressive strength lightweight concrete	LC8/9	8	9
	LC12/13	12	13
	LC16/18	16	18
	LC20/22	20	22

	LC25/28	25	28
	LC30/33	30	33
	LC35/38	35	38
	LC40/44	40	44
	LC45/50	45	50
	LC50/55	50	55
	LC55/60	55	60
	LC60/66	60	66
	LC70/77	70	77
	LC80/88	80	88

(3) dry density lightweight concrete

essential characteristic	**declaration**	**minimum dry density (kg/m^3)**	**maximum dry density (kg/m^3)**
dry density lightweight concrete	D1.0	800	1000
	D1.2	1001	1200
	D1.4	1201	1400
	D1.6	1401	1600
	D1.8	1601	1800
	D2.0	1800	2000

(4) dry density lightweight concrete with an open structure

essential characteristic	**declaration**	**minimum dry density (kg/m^3)**	**maximum dry density (kg/m^3)**
dry density lightweight concrete with an open structure	0.5	400	500
	0.6	501	600
	0.7	601	700
	0.8	701	800
	0.9	801	900
	1.0	901	1000
	1.2	1001	1200
	1.4	1201	1400
	1.6	1401	1600
	1.8	1601	1800
	2.0	1801	2000

(5) dry density autoclave aerated concrete

essential characteristic	**declaration**	**minimum dry density (kg/m^3)**	**maximum dry density (kg/m^3)**
dry density autoclave aerated concrete	300	250	300
	350	301	350
	400	351	400
	450	401	450
	500	451	500
	550	501	550
	600	551	600
	650	601	650
	700	651	700

	750	701	750
	800	751	800
	850	801	850
	900	851	900
	950	901	950
	1000	951	1000

(6) reaction to fire - class declaration

Classes included in the following legal act and its revisions:

Commission Delegated Regulation (EU) 2016/364 of 1 July 2015 on the classification of the reaction to fire performance of construction products pursuant to Regulation (EU) No 305/2011 of the European Parliament and of the Council.

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32016R0364

(7) resistance to fire R - class declaration

Classes included in the following legal act and its revisions:

2000/367/EC: Commission Decision of 3 May 2000 implementing Council Directive 89/106/EEC as regards the classification of the resistance to fire performance of construction products, construction works and parts thereof.

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02000D0367-20110412

(8) resistance to fire REI - class declaration

Classes included in the following legal act and its revisions:

2000/367/EC: Commission Decision of 3 May 2000 implementing Council Directive 89/106/EEC as regards the classification of the resistance to fire performance of construction products, construction works and parts thereof.

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02000D0367-20110412

(9) resistance to fire EI - class declaration

Classes included in the following legal act and its revisions:

2000/367/EC: Commission Decision of 3 May 2000 implementing Council Directive 89/106/EEC as regards the classification of the resistance to fire performance of construction products, construction works and parts thereof.

https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02000D0367-20110412

(10) mechanical strength class - floor slats for livestock class

essential characteristic	**declaration**	**linear load q_k (kN/m)**	**vertical point load $F_{k,v}$ (kN)**	**distance a (m)**	**horizontal point load $F_{k,h}$ (kN)**
mechanical strength class - floor slats for livestock class	A1	2.5	1.2	0.5	0.5
	A2	5.0	4.2	0.8	2.5
	A3	5.0	4.2	0.8	2.5
	B1	0.8	0.8	0.3	0.1
	B2	1.5	1.0	0.5	0.5
	B3	2.5	1.3	0.5	1.0

(11) mechanical strength - testing - piles - rigidity of joints

essential	**declaration**	**testing verification**	**impact blows (n)**	**impact blows stress**

characteristic				level (N/mm^2)
mechanical strength - testing - piles - rigidity of joints	A	impact and bending	1000	28
	B	impact and bending	1000	22
	C	impact and bending	1000	17
	D	impact	500	17

(12) mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads

essential characteristic	declaration	minimum characteristic resistance to concentrated loads (kN)
mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads	Very low non-resisting (R1-VLNR)	0.7
	Low non-resisting (R1-LNR)	1.0
	Non-resisting (R1-NR)	1.5
	Semi-resisting (R1-SR)	2.0
	Resisting (R1-RR)	2.5

(13) mechanical strength - testing - beams and blocks - blocks - bending strength

essential characteristic	Declaration	minimum bending strength load (kN)
mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads	Low non-resisting (R2-LNR)	1.0
	Non-resisting (R2-NR)	1.5
	Semi-resisting (R2-SR)	2.0 or 12L

(14) mechanical strength - testing - beams and blocks - blocks - longitudinal compression strength

essential characteristic	Declaration	minimum characteristic longitudinal compressive strength (MPa)
mechanical strength - testing - beams and blocks - blocks - resistance to concentrated loads	R0	0
	R2-RRC	16
	R1-RRC	20

(15) gross dry density - beams and blocks - clay blocks

essential characteristic	declaration	minimum mean gross dry density (kg/m^3)	maximum mean gross dry density (kg/m^3)
gross dry density - beams and blocks - clay blocks	0.5	401	500
	0.6	501	600
	0.7	601	700
	0.8	701	800
	0.9	801	900
	1.0	901	1000
	1.1	1001	1100
	1.2	1101	1200
	1.3	1201	1300
	1.4	1301	1400
	1.5	1401	1500

(16) air tightness class - HVAC flue elements

essential characteristic	declaration	Air leakage limit (fmax) m^3·s-1·m-^{2}	Negative at all pressures ps (MPa)	Positive pressure ps (MPa)	Positive pressure ps (MPa)	Positive pressure ps (MPa)

				1	**2**	**3**
air tightness class - HVAC flue elements	A	$0{,}027 \times p_{test}{}^{0{,}65} \times 10^{-3}$	200	400		
	B	$0{,}009 \times p_{test}{}^{0{,}65} \times 10^{-3}$	500	400	1000	2000
	C	$0{,}003 \times p_{test}{}^{0{,}65} \times 10^{-3}$	750	400	1000	2000
	D	$0{,}001 \times p_{test}{}^{0{,}65} \times 10^{-3}$	750	400	1000	2000

(17) characteristic compressive strength lightweight concrete with an open structure

essential characteristic	**declaration**	**minimum characteristic compressive strength (MPa)**
characteristic compressive strength lightweight concrete with an open structure	LAC2	2
	LAC4	4
	LAC6	6
	LAC8	8
	LAC10	10
	LAC12	12
	LAC15	15
	LAC20	20
	LAC25	25

(18) characteristic compressive strength autoclaved aerated concrete

essential characteristic	**declaration**	**minimum characteristic compressive strength (MPa)**
characteristic compressive strength autoclaved aerated concrete	AAC1.5	1.5
	AAC2	2.0
	AAC2.5	2.5
	AAC3	3.0
	AAC3.5	3.5
	AAC4	4.0
	AAC4.5	4.5
	AAC5	5.0
	AAC5.5	5.5
	AAC6	6.0
	AAC7	7.0
	AAC8	8.0
	AAC9	9.0
	AAC10	10.0

(19) drying shrinkage autoclaved aerated concrete - testing

essential characteristic	**declaration**	**maximum drying shrinkage (mm per m)**
drying shrinkage autoclaved aerated concrete - testing	0.15	0.15
	0.20	0.20
	0.25	0.25
	0.30	0.30
	0.35	0.35
	0.40	0.40

ANNEX VI
Environmental sustainability related harmonised scenarios

The following harmonised scenarios shall be included in the standard.

Module	Harmonised scenario	Description	Comments
A1-A3	N/A	calculation according to the constituents and manufacturing process including packaging	
A4	transport by lorry	transport of the declared unit by lorry, value declared per km	different scenarios to be defined in the standard depending on the size and weight
A4	transport by train	transport of the declared unit by train, value declared per km	
A4	transport by ship (inland waterway)	transport of the declared unit by ship, value declared per km	
A4	transport by ship (ocean)	transport of the declared unit by ship, value declared per km	
A5	lifting, erecting, and fixing - electric machinery	required tasks to finalise the assembly of the product	value to be used for the final calculation together with the applicable energy mix impacts e.g., crane energy consumption
A5	lifting, erecting, and fixing - fuel machinery	required tasks to finalise the assembly of the product	standard fuel use
A5	complementary processes	additional processes related to the installation	e.g., joints installation
B1	carbonation in use	carbonation per year	conditions calculated according to the rules provided. EN 16757 Annex G provides a reference method
B2	maintenance		if not relevant, impacts equal to zero e.g., cleaning surfaces
B3	repair of elements		if not relevant, impacts equal to zero
B4	replacement of elements		if not relevant, impacts equal to zero e.g., joints replacement
B5	refurbishment of elements		if not relevant, impacts equal to zero
B6	operational energy use		if not relevant, impacts equal to zero
B7	operational water use		if not relevant, impacts equal to zero
C1	demolition		elements transformed into debris
C1	disassembly		elements recovered for potential second use
C2	transport by lorry of debris	transport of the declared unit by lorry, value declared per km	
C2	transport by lorry of complete elements	transport of the declared unit by lorry, value declared per km	different scenarios depending on the size and weight
C3	disposal at a landfill site		preparation for disposal
C3	reuse of elements		preparation for reuse of elements
C3	use of debris in land restoration		preparation for the use in land restoration
C3	crushing/recycling of concrete without further processing - electric machinery		value to be used for the final calculation together with the applicable energy mix impacts
C3	crushing/recycling of concrete		standard fuel use

Module	Harmonised scenario	Description	Comments
	without further processing - fuel machinery		
C3	reinforcement recovery		
C4	disposal of debris	treatment and disposal	
C4	carbonation in landfilling		carbonation in landfill calculated according to the rules provided. EN 16757 Annex G provides a reference method
D	reuse in new construction works outside the boundary limits		
D	use of debris in land restoration outside the boundary limits		
D	crushing recycling of concrete outside the boundary limits		
D	recycling of reinforcement outside the boundary limits		
D	waste packaging recycling outside the boundary limits		
D	waste packaging recovery as energy source outside the boundary limits		
D	aggregates replacement outside the boundary limits		
D	carbonation outside the boundary limits		conditions calculated according to the rules provided. EN 16757 Annex G provides a reference method

ANNEX VII
European standards listed in Table 1 to Annex I

EN 15037-1:2008‘Precast concrete products - Beam-and-block floor systems - Part 1: Beams’;

EN 15037-2:2009+A1:2011 ‘Precast concrete products - Beam-and-block floor systems - Part 2: Concrete blocks’;

EN 15037-3:2009+A1:2011 ‘Precast concrete products - Beam-and-block floor systems - Part 3: Clay blocks’;

EN 15037-4:2010+A1:2013 ‘Precast concrete products - Beam-and-block floor systems - Part 4: Expanded polystyrene blocks’;

EN 15037-5:2013 ‘Precast concrete products - Beam-and-block floor systems - Part 5: Lightweight blocks for simple formwork’;

EN 14844:2006+A2:2011 ‘Precast concrete products - Box culverts’;

EN 15050:2007+A1:2012 ‘Precast concrete products - Bridge elements’;

EN 14991:2007 ‘Precast concrete products - Foundation elements’;

EN 14992:2007+A1:2012 ‘Precast concrete products - Wall elements’;

EN 12839:2012 ‘Precast concrete products - Elements for fences’;

EN 13747:2005+A2:2010 ‘Precast concrete products - Floor plates for floor systems’;

EN 12737:2004+A1:2007 ‘Precast concrete products - Floor slats for livestock’;

EN 12794:2005+A1:2007 ‘Precast concrete products - Foundation piles’ and EN 12794:2005+A1:2007/AC:2008 ‘Precast concrete products - Foundation piles’;

EN 13978-1:2005 ‘Precast concrete products - Precast concrete garages - Part 1: Requirements for reinforced garages monolithic or consisting of single sections with room dimensions’;

EN 1168:2005+A3:2011 ‘Precast concrete products - Hollow core slabs’;

EN 13225:2013 ‘Precast concrete products - Linear structural elements’;

EN 12843:2004 ‘Precast concrete products - Masts and poles’;

EN 15258:2008 ‘Precast concrete products - Retaining wall elements’;

EN 13224:2011 ‘Precast concrete products - Ribbed floor elements’;

EN 13693:2004+A1:2009 ‘Precast concrete products - Special roof elements’;

EN 15435:2008 ‘Precast concrete products - Normal weight and lightweight concrete shuttering blocks - Product properties and performance’;

EN 15498:2008 ‘Precast concrete products - Wood-chip concrete shuttering blocks - Product properties and performance’;

EN 14843:2007 ‘Precast concrete products - Stairs’.