EUROPEAN
COMMISSION

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ANNEXES 1 to 2

ANNEXES

to the

COMMISSION IMPLEMENTING DECISION

on a standardisation request to the European Committee for Standardisation as regards cement, lime and other hydraulic binders in support of Regulation (EU) 2024/3110 of the European Parliament and of the Council

ANNEX I

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

Table 1 List of new standardisation deliverables to be drafted and deadlines for their adoption

Reference information		Deadline for the adoption by the ESOs
1.	Technical Report 'Alkali activated cement - Identification of characteristics and assessment methods'	31 December 2027

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

Reference information		Deadline for the adoption by the ESOs
1.	EN 197-1 to cover 'Cement - Part 1: Common cement - Performance assessment and declaration'	30 June 2027
2.	EN 14216 to cover 'Very low heat special cement - Performance assessment and declaration'	30 June 2028
3.	EN 413-1 to cover 'Masonry cement - Part 1: Performance assessment and declaration	31 December 2027
4.	EN 14647 to cover 'Calcium aluminate cement - Performance assessment and declaration'	30 June 2028
5.	EN 15743 to cover 'Supersulphated cement - Performance assessment and declaration'	30 June 2028
6.	EN 459-1 to cover 'Building lime for construction - Part 1: Performance assessment and declaration'	31 December 2027
7.	EN 13282 to cover 'Normal and rapid hydraulic road binders - Performance assessment and declaration'	30 June 2028
8.	EN 15368 to cover 'Hydraulic binders for masonry mortars and concrete for non-structural applications - Performance assessment and declaration'	31 December 2027
9.	EN 16908 to cover 'Cement, building lime for construction and other hydraulic binders - Environmental product Declarations -	30 June 2027

	Complementary product category rules’	

ANNEX II

Requirements for the standardisation deliverables and standards referred to in Article 1

PART A. GENERAL REQUIREMENTS FOR THE STANDARDISATION DELIVERABLES AND STANDARDS LISTED IN ANNEX I

1. LEGAL REQUIREMENTS TO BE SUPPORTED BY THE HARMONISED STANDARDS

The harmonised standards shall support the establishment of a harmonised system as set out in Regulation (EU) 2024/3110.

The harmonised standards shall provide the methods and the criteria for assessing the performance of construction products in relation to their essential characteristics. The harmonised standards shall give only product specific provisions. Those product-specific provisions shall include implementation rules in relation to the applicable assessment and verification system as defined in the relevant Union legal acts. Based on this request the harmonised standards shall not support any legal requirements other than those referenced in the first paragraph of this point and in particular shall not:

(a) make any references to provisions of Regulation (EU) 2024/3110 or reproduce its requirements in their normative body;

(b) modify any definitions set out in Regulation (EU) 2024/3110 or define any legally relevant terms not defined in that Regulation ;

(c) 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.

The harmonised standards 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 adopt an implementing act making the harmonised standards, requested in Annex I, mandatory or mandatory with restrictions, these standards shall fulfil the requirements laid down in Article 5 of Regulation (EU) 2024/3110.

In particular, the essential characteristics laid down in the harmonised standards shall correspond to this standardisation request; the content of the harmonised standards shall be in line with the general principles and reference points for the establishment of those essential characteristics and their assessment methods applicable to standardisation under Regulation (EU) 2024/3110.

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 normative reference referred to, 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 reference assessment method for each essential characteristic (the harmonised standard may offer additional information referring to other supporting standards as regards sampling or testing conditions when needed).

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 content and release of 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 Annex II of Regulation (EU) 2024/3110, 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 and with the complementary product category rules defined in the harmonised standard listed in Table 2, point 9, of Annex II.

When the declared performance is a numerical value or a class obtained from a numerical value, the harmonised standards shall include the following information for each essential characteristic:

(a) the physical dimensions according to the SI standard: time (T), length (L), mass (M), electric current (I), thermodynamic temperature (K), amount of substance (N) and luminous intensity (J) a derivation of them or ratio in case of dimensionless quantities;

(b) the statistical value declared expressed using a specific point, like the fractile (e.g., 50% fractile is the median) and a confidence interval, which indicates the range within which the true value is likely to fall, as well as the probability that this interval contains the true value. In justified circumstances a simpler method, such as setting out a characteristic value can also be applied;

(c) the units in which the performance is expressed or dimensionless;

(d) when applicable, the rounding method used for the declaration.

2.4. Additional elements set out in relation to essential characteristics

The harmonised standards shall provide voluntary or mandatory threshold levels and classes of performance in relation to essential characteristics and those essential characteristics which always have to be declared by manufacturers. These elements should be developed in accordance with the basic principles and reference points set out as recommendations in Parts B, C and F. Other voluntary or mandatory threshold levels, classes of performance and mandatory declarations shall not be included unless properly justified.

2.5. Assessment and verification

The harmonised standards shall provide guidance on the technical details necessary for the implementation of the applicable assessment and verification systems set out by delegated acts adopted in accordance with Article 10 or Regulation (EU) 2024/3110.

Harmonised standards shall describe the applicable factory production control following the general requirements included in Part H and the specific requirements for each standard are included in Parts B and C.

2.6. Guidelines for the drawing up of general product information, instructions for use and safety information

The standards shall provide guidelines, including technical details, necessary for drawing up general product information, instructions and safety information in accordance with Annex IV to Regulation (EU) 2024/3110.

The information provided shall be enough, both in terms of quantity and quality, to enable potential purchasers to make informed decisions.

Guidelines and technical details issued in accordance with Article 9(2) or Regulation (EU) 2024/3110 shall also recommend where the respective information is to be provided. That location shall be one where the information is least likely to be overlooked.

General requirements for the guidelines are included in Part H and specific requirements for each standard are included in Parts B and C.

2.7. Guidelines to ensure interoperability of the human- and machine-readable formats

The standards shall provide guidelines, including technical details, necessary to ensure that the format of the declaration of performance and conformity is digitised in a human- and machine-readable format by providing product data templates aligned to the technical content of the standard. The content must be technology neutral and facilitate the inclusion of the concepts in the Construction digital product passport system provided for in Article 75 of Regulation (EU) 2024/3110.

PART B. SPECIFIC REQUIREMENTS FOR DRAFTING THE NEW STANDARDISATION DELIVERABLES LISTED IN TABLE 1 OF ANNEX I

1. REQUIREMENTS FOR ALL STANDARDISATION DELIVERABLES

The standardisation deliverables shall reflect the generally acknowledged state of the art.

2. REQUIREMENTS FOR SPECIFIC STANDARDISATION DELIVERABLES

2.1. Technical Report on alkali activated cement requested in Table 1, point 1, of Annex I

2.1.1. Scope

Identification of characteristics and assessment methods required for the declaration of performance of alkali activated cement for the preparation of concrete, mortar, grout, and other mixes for construction and for the manufacture of construction products including structural and non-structural products.

2.1.2. Technical content

The technical report shall provide:

– list of essential characteristics and European assessment methods related to them;

– classes for the declaration of performance aligned as much as possible to those applicable to other cements;

– threshold levels required to ensure proper functioning of the product depending on the application;

– limitations to its use, if any;

– complementary assessments to be performed as factory production control, if any;

– recommendations as regards general product information, instructions for use and safety information including designation codes aligned as much as possible to those applicable to other cements.

PART C. SPECIFIC REQUIREMENTS FOR DRAFTING THE NEW STANDARDS LISTED IN TABLE 2 OF ANNEX I

1. REQUIREMENTS FOR ALL STANDARDS

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

2. REQUIREMENTS FOR SPECIFIC STANDARDS

2.1. Standard on common cement requested in Table 2, point 1, of Annex I

2.1.1. Scope

Calcium silicate cement (common cement) intended to be used for the preparation of concrete, mortar, grout, and other mixes for construction and for the manufacture of construction products including structural and non-structural products, including white cement.

Common cement intended to be used for the preparation of mortar for bricklaying, blocklaying, rendering and plastering, including white cement.

Common cement intended to be used for the preparation of adhesives for other construction products.

Common cement intended to be used for soil stabilisation or improvement, road bases and sub-bases, and capping layers.

The product definition of common cement covers the following combination of constituents expressed in percentage as mass, any other combination is outside the product definition:

(a) primary cement (minimum of 95% clinker);

(b) binary cements with clinker and a maximum of 95% of blast furnace slag;

(c) binary cements with clinker and a maximum of 10% of silica fume;

(d) binary cements with clinker and a maximum of 35% of one of the following constituents: natural pozzolana, natural activated pozzolana, fly ash, bottom ash, burnt shale, limestone or recycled concrete fines;

(e) pozzolanic cements with clinker and a maximum of 55% of a combination of silica fume, natural pozzolana, natural activated pozzolana, fly ash and coal bottom ash with a maximum of 10% silica fume;

(f) composite cement with a minimum of 50% of clinker, a maximum of 29% of recycled fines and a maximum of 44% of any combination of blast furnace slag, silica fume, natural pozzolana, natural activated pozzolana, fly ash, coal bottom ash, burn shale and limestone with a maximum of 10% silica fume and a maximum of 35% of the aggregation of limestone and recycled fines;

(g) composite cement with a minimum of 50% of clinker and a maximum of 50% of any combination of blast furnace slag, silica fume, natural pozzolana, natural activated pozzolana, fly ash, coal bottom ash, burnt shale, limestone and recycled fines with a maximum of 10% of silica fume, a maximum of 20% of recycled fines, and a maximum of 35% of any combination of limestone and recycled fines;

(h) composite cements with a minimum of 20% of clinker, a maximum of 49% of blast-furnace slag and a maximum of 49% of a combination of natural pozzolana, natural activated pozzolana, siliceous fly ash and coal bottom ash;

(i) composite cements with a minimum of 35% clinker, a maximum of 59% of blast-furnace slag and a maximum of 20% of natural pozzolana, natural activated pozzolana, siliceous fly ash, coal bottom ash, limestone or recycled fines;

(j) composite cements with a minimum of 21% clinker, a maximum of 49% of blast-furnace slag and a maximum of 49% of limestone.

All the above combinations can contain up to 5% of a minor additional constituent as long as the same constituent is not used as a main constituent. Minor constituents are specially selected, inorganic natural mineral materials and inorganic mineral materials derived from the clinker production process.

All the above combinations can contain calcium sulphate to control setting.

All the above combinations can contain additives up to 1,0% to improve the manufacture or the properties of the cement. Calcium aluminate cement, super sulphated cement, very low heat cement and alkali activated cement as well as masonry cement exclusively manufactured for the preparation of mortar for bricklaying, rendering and plastering are also excluded from this product definition.

2.1.2. Performance declaration common cement

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory are provided in Table 1.

Table 1: Common cement

Group	BRCW[1]	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration
		portland cement clinker - calcium oxide content			
		portland cement clinker - silicon dioxide content			
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration
		portland cement clinker - total alkali content			
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - total alkali content			relevant only if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
		pozzolanic materials - silicon dioxide content			relevant only if included in the composition

[1] Basic Requirements for Construction Works.

Group	BRCW[1]	Essential characteristic	EU threshold	Class	Comments
		pozzolanic materials - aluminium oxide content			relevant only if included in the composition
		pozzolanic materials - loss on ignition			relevant only if included in the composition
		pozzolanic materials - sulphate content			relevant only if included in the composition
		pozzolanic materials - carbonate content			relevant only if included in the composition
		pozzolanic materials - chloride content			relevant only if included in the composition
		pozzolanic materials - specific surface area			relevant only if included in the composition
		pozzolanic materials - compressive strength of an 80/20 mix with calcium hydroxide - 28 days			relevant only if included in the composition
		pozzolanic materials - total alkali content			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		siliceous fly ash - total alkali content			relevant only if included in the composition
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
		calcareous fly ash - total alkali content			relevant only if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
		burnt shale - total alkali content			relevant only if included

Group	BRCW[1]	Essential characteristic	EU threshold	Class	Comments
					in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40.0%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75.0%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	LL. ≤ 0.20% L ≤ 0.50%		mandatory declaration if included in the composition
		limestone - total alkali content			relevant only if included in the composition
constituents - silica fume	1	silica fume - amorphous silicon dioxide content	≥ 85%		mandatory declaration if included in the composition
		silica fume - elemental silicon dioxide content	≤ 0.4%		mandatory declaration if included in the composition
		silica fume - loss on ignition 1 h ignition time	≤ 4.0%		mandatory declaration if included in the composition
		silica fume - specific surface	≥ 15.0 m^2/g		mandatory declaration if included in the composition
		silica fume - total alkali content			relevant only if included in the composition
constituents - recycled fines	1	recycled fines - total organic carbon content	≤ 0.8%		mandatory declaration if included in the composition
		recycled fines - sulphate content	≤ 2.0%		mandatory declaration if included in the composition
		recycled fines - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		recycled fines - total alkali content			relevant only if included in the composition
constituents - coal bottom ash	1	coal bottom ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		coal bottom ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		coal bottom ash - free calcium oxide content	≤ 2.5 %		mandatory declaration if included in the composition
		coal bottom ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		coal bottom ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		coal bottom ash - total alkali content			relevant only if included in the composition
special applications[2]	1	portland cement clinker - tricalcium aluminate content			

[2] These essential characteristics are only required in relation to certain applications such as sulphate resistant cement or sea environment resistant cement, specific requirements may apply for the

Group	BRCW[1]	Essential characteristic	EU threshold	Class	Comments
		portland cement clinker -tetracalcium aluminoferrite content			
		granulated blast furnace slag - aluminium oxide content			relevant only if included in the composition
		natural pozzolana - ratio silicon dioxide in respect to calcium oxide plus magnesium oxide content			relevant only if included in the composition
		natural pozzolana - pozzolanicity of a 75/25 mix - hydroxyl ion concentration and calcium oxide concentration - 8 days			relevant only if included in the composition
		natural pozzolana - pozzolanicity of a 75/25 mix - hydroxyl ion concentration and calcium oxide concentration - 15 days			relevant only if included in the composition
		pozzolanic materials - natural pozzolana - ratio compressive strength of a 75/25 mix in respect to 100/0 mix - 28 days			relevant only if included in the mix
		siliceous fly ash - ratio silicon dioxide in respect to calcium oxide plus magnesium oxide content			relevant only if included in the composition
		siliceous fly ash - pozzolanicity of a 75/25 mix - hydroxyl ion concentration and calcium oxide concentration - 8 days			relevant only if included in the composition
		siliceous fly ash - pozzolanicity of a 75/25 mix - hydroxyl ion concentration and calcium oxide concentration - 15 days			relevant only if included in the composition
		siliceous fly ash - ratio compressive strength of a 75/25 mix - 28 days in respect to compressive strength of a 100/0 mix			relevant only if included in the composition
		silica fume - ratio silicon dioxide in respect to calcium oxide plus magnesium oxide content			relevant only if included in the composition
		coal bottom ash - ratio silicon dioxide in respect to calcium oxide plus magnesium oxide content			relevant only if included in the composition
		coal bottom ash - pozzolanicity of a 75/25 mix - hydroxyl ion concentration and calcium oxide concentration - 8 days			relevant only if included in the composition
		coal bottom ash - pozzolanicity of a 75/25 mix - hydroxyl ion concentration and calcium oxide concentration - 15 days			relevant only if included in the composition
		coal bottom ash - ratio compressive strength of a 75/25 mix - 28 days in respect to compressive strength of a 100/0 mix			relevant only if included in the composition
		tricalcium aluminate content			
		tetracalcium alumino ferrite content			
		dicalcium ferrite content			
		magnesitum oxide content			
		aluminium oxide content			
		sulphur as sulphide ions			
		tricalcium silicate content			
		calcium oxide content			
		sulphate resistance - flat prism test			
		sulphate resistance - square prism test			

applications together with other characteristics in the next group e.g., sulphate content is also relevant for sulphate resistant cements.

Group	BRCW[1]	Essential characteristic	EU threshold	Class	Comments
common cement	1	minimum standard compressive strength - 28 days	≥ 32.5 MPa	Table 24	mandatory declaration
		maximum standard compressive strength - 28 days		Table 25	
		minimum very early compressive strength - 24 h			
		minimum early compressive strength - 2 days		Table 32	
		minimum early compressive strength - 7 days		Table 33	
		minimum late compressive strength - 56 days			
		minimum late compressive strength - 90 days			
		initial setting time	≥ 45 min		mandatory declaration
		loss on ignition	≤ 5.0%		mandatory declaration only for primary cement (a minimum of 95% clinker) and binary cements with clinker and 36% to 95% of blast furnace slag
		soundness	≤ 10 mm		mandatory declaration
		heat of hydration			
		pozzolanicity - hydroxyl ion concentration			relevant only for pozzolanic cements with a maximum of 55% of a combination of silica fume, natural pozzolana, natural activated pozzolana, fly ash and coal bottom ash and a maximum of 10% silica fume
		pozzolanicity - calcium oxide concentration			relevant only for pozzolanic cements with a maximum of 55% of a combination of silica fume, natural pozzolana, natural activated pozzolana, fly ash and coal bottom ash and a maximum of 10% silica fume
		insoluble residue content	≤ 5.0%		mandatory declaration and threshold only for primary cement (a minimum of 95% clinker) and binary cements with clinker and 36% to 95% of blast furnace slag
		sulphate content			
		chloride content	≤ 0.10%		mandatory declaration, threshold not applicable to binary cement with clinker and a maximum of 95% of blast furnace slag and to composite cements with a minimum of 35% clinker, a maximum of 59% of blast-furnace slag and a maximum of 20% of natural pozzolana, natural activated

Group	BRCW[1]	Essential characteristic	EU threshold	Class	Comments
					pozzolana, siliceous fly ash, coal bottom ash, limestone or recycled fines
		total alkali content			
		effective alkali content			
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.1.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.1.3.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.1.3.2. Whiteness (only applicable to white cement)

Control of the whiteness of the product according to the applicable procedure and testing.

2.1.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures to manufacture concrete/mortar and the expertise required to use this product.

The product description included in the general product information shall include a designation code obtained from Table 2 and Table 3. The percentage of certain constituents may be declared for cements used for special applications. The harmonised standard may improve the designation code without changing the approach. The designation code shall be consistent with the declared performance in the Declaration of Performance and Conformity (DoPC) for the relevant essential characteristics.

Table 2: Common cement designation code 1/2

		K	S	D	P	Q	V	#[1]	W	T	L	LL	F	
name	designation	clinker	blast furnace slag	silica fume	natural pozzolana	natural activated pozzolana	siliceous fly ash	coal bottom ash	calcareous fly ash	burnt shale	limestone	high purity limestone	recycled concrete fines	minor additional constituents
portland cement	CEM I	95-100	-	-	-	-	-	-	-	-	-	-	-	0-5
portland-slag cement	CEM II/A-S	80-94	6-20	-	-	-	-	-	-	-	-	-	-	0-5
	CEM II/B-S	65-79	21-35	-	-	-	-	-	-	-	-	-	-	0-5
portland-silica fume cement	CEM II/A-D	90-94	-	6-10	-	-	-	-	-	-	-	-	-	0-5
portland-pozzolana	CEM II/A-P	80-94	-	-	6-20	-	-	-	-	-	-	-	-	0-5
	CEM II/B-P	65-79	-	-	21-35	-	-	-	-	-	-	-	-	0-5

		K	S	D	P	Q	V	#[1]	W	T	L	LL	F	
cement	CEM II/A-Q	80-94	-	-	-	6-20	-	-	-	-	-	-	-	0-5
	CEM II/B-Q	65-79	-	-	-	21-35	-	-	-	-	-	-	-	0-5
portland-fly ash cement	CEM II/A-V	80-94	-	-	-	-	6-20	-	-	-	-	-	-	0-5
	CEM II/B-V	65-79	-	-	-	-	21-35	-	-	-	-	-	-	0-5
	CEM II/A-W	80-94	-	-	-	-	-	-	6-20	-	-	-	-	0-5
	CEM II/B-W	65-79	-	-	-	-	-	-	21-35	-	-	-	-	0-5
portland-coal bottom ash cement	CEM II/A-#[1]	80-94	-	-	-	-	-	6-20	-	-	-	-	-	0-5
	CEM II/B-#[1]	65-79	-	-	-	-	-	21-35	-	-	-	-	-	0-5
portland-burnt shale cement	CEM II/A-T	80-94	-	-	-	-	-	-	-	6-20	-	-	-	0-5
	CEM II/B-T	65-79	-	-	-	-	-	-	-	21-35	-	-	-	0-5
portland-limestone cement	CEM II/A-L	80-94	-	-	-	-	-	-	-	-	6-20	-	-	0-5
	CEM II/B-L	65-79	-	-	-	-	-	-	-	-	21-35	-	-	0-5
	CEM II/A-LL	80-94	-	-	-	-	-	-	-	-	-	6-20	-	0-5
	CEM II/B-LL	65-79	-	-	-	-	-	-	-	-	-	21-35	-	0-5
portland-recycled fines cement	CEM II/A-F	80-94	-	-	-	-	-	-	-	-	-	-	6-20	0-5
	CEM II/B-F	65-79	-	-	-	-	-	-	-	-	-	-	21-35	0-5
portland-composite cement	CEM II/A-M[2]	80-88	12-20 (D 0-10)											0-5
	CEM II/B-M[2]	65-79	21-35 (D 0-10)											0-5
	CEM II/C-M[2]	50-64	36-50 (D 0-10; L+LL+F 0-35; F 0-20)											0-5
blast furnace cement	CEM III/A	35-64	36-65	-	-	-	-	-	-	-	-	-	-	0-5
	CEM III/B	20-34	66-80	-	-	-	-	-	-	-	-	-	-	0-5
	CEM III/C	6-19	81-94	-	-	-	-	-	-	-	-	-	-	0-5
pozzolanic cement	CEM IV/A[2]	65-88	-	12-35 (D 0-10)						-	-	-	-	0-5
	CEM IV/B[2]	45-64	-	36-55 (D 0-10)						-	-	-	-	0-5
slag-pozzolanic cement	CEM V/A[2]	40-64	18-30	-	18-30				-	-	-	-	-	0-5
	CEM V/B[2]	20-38	31-49	-	31-49				-	-	-	-	-	0-5
composite cement	CEM VI/A-(S-P)	35-49	31-59	-	6-20	-	-	-	-	-	-	-	-	0-5
	CEM VI/A-(S-Q)	35-49	31-59	-	-	6-20	-	-	-	-	-	-	-	0-5
	CEM VI/A-(S-V)	35-49	31-59	-	-	-	6-20	-	-	-	-	-	-	0-5
	CEM VI/A-(S-L)	35-49	31-59	-	-	-	-	-	-	-	6-20	-	-	0-5
	CEM VI/B-(S-L)	21-49	21-49	-	-	-	-	-	-	-	21-49	-	-	0-5
	CEM VI/A-(S-LL)	35-49	31-59	-	-	-	-	-	-	-	-	6-20	-	0-5
	CEM VI/B-(S-LL)	21-49	21-49	-	-	-	-	-	-	-	-	21-49	-	0-5
	CEM VI/A-(S-F)	35-49	31-59	-	-	-	-	-	-	-	-	-	6-20	0-5

[1] A letter for the designation of the constituent coal bottom ash should be provided in the harmonised standard.

[2] Designation shall be followed by the letters of constituents included in the cement separated by hyphens and between brackets e.g., (P-Q).

Table 3: Common cement designation code 2/2

designation	minimum early compressive strength - 2 days	minimum early compressive strength - 7 days	minimum standard compressive strength - 28 days	maximum standard compressive strength - 28 days	initial setting time
32,5 L	-	12.0 MPa	32.5 MPa	52.5 MPa	≥ 75 min
32,5 N	-	16.0 MPa	32.5 MPa	52.5 MPa	≥ 75 min
32,5 R	10.0 MPa	-	32.5 MPa	52.5 MPa	≥ 75 min
42,5 L	-	16.0 MPa	42.5 MPa	62.5 MPa	≥ 60 min
42,5 N	10.0 MPa	-	42.5 MPa	62.5 MPa	≥ 60 min
42.5 R	20.0 MPa	-	42.5 MPa	62.5 MPa	≥ 60 min
52.5 L	10.0 MPa	-	52.5 MPa	-	≥ 45 min

designation	minimum early compressive strength - 2 days	minimum early compressive strength - 7 days	minimum standard compressive strength - 28 days	maximum standard compressive strength - 28 days	initial setting time
52.5 N	20.0 MPa	-	52.5 MPa	-	≥ 45 min
52.5 R	30.0 MPa	-	52.5 MPa	-	≥ 45 min

The code shall be followed by "LH" if the heat of hydration is ≤ 270 J/g.

Cements with a chloride content exceeding 0.10% by mass assessed according to the relevant essential characteristic in Table 1 must display this information in a specific place according to the recommendation provided in the guidelines included in every harmonised standard. That location shall be one where the information is least likely to be overlooked.

Additional limitation to the use of the designation codes may be set out in the guidelines in relation to the sulphate content of the cement when assessed according to the relevant essential characteristic in Table 1.

2.2. Standard on very low heat special cement requested in Table 2, point 2, of Annex I

2.2.1. Scope

Calcium silicate cement intended to be used for the preparation of concrete, mortar, grout, and other mixes for construction and for the manufacture of construction products including structural and non-structural products with slower hydration process (very low heat special cement).

Very low heat special cement intended to be used for massive construction where the dimensions of the structure have a low surface/volume ratio.

The product definition of very low heat special cement covers the following combination of constituents, any other combination is outside the product definition:

(a) binary cements with clinker and a maximum of 95% of blast furnace slag.

(b) pozzolanic cements with clinker and a maximum of 55% of a combination of silica fume, pozzolana and fly ash with a maximum of 10% silica fume.

(c) composite cements with a minimum of 20% of clinker, a maximum of 49% of blast-furnace slag and a maximum 49% of a combination of pozzolana and siliceous fly ash.

All the above combinations can contain up to 5% of a minor additional constituent as long as the same constituent is not used as a main constituent.

The intended use in reinforced, elevated concrete structures is excluded from this product definition.

2.2.2. Performance declaration very low heat special cement

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 4.

Table 4: Very low heat special cement

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration
		portland cement clinker - calcium oxide content			
		portland cement clinker - silicon			

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
		dioxide content			
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration
		portland cement clinker - total alkali content			
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - total alkali content			relevant only if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
		pozzolanic materials - total alkali content			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		siliceous fly ash - total alkali content			relevant only if included in the composition
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition, threshold only applicable if reactive calcium oxide content is between 10.0% and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90	≥ 85%		mandatory declaration if

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
		days			included in the composition
		calcareous fly ash - total alkali content			relevant only if included in the composition
constituents - silica fume	1	silica fume - amorphous silicon dioxide content	≥ 85%		mandatory declaration if included in the composition
		silica fume - elemental silicon dioxide content	≤ 0.4%		mandatory declaration if included in the composition
		silica fume - loss on ignition 1 h ignition time	≤ 4.0%		mandatory declaration if included in the composition
		silica fume - specific surface	≥ 15.0 m²/g		mandatory declaration if included in the composition
		silica fume - total alkali content			relevant only if included in the composition
very low heat special cement	1	minimum standard compressive strength - 28 days	≥ 22.5 MPa	Table 24	mandatory declaration
		maximum standard compressive strength - 28 days	≤ 42.5 MPa	Table 25	mandatory declaration
		initial setting time	≥ 75 min		
		loss on ignition	≤ 5.0%		mandatory declaration only for binary cements with clinker and a maximum of 95% of blast furnace slag
		soundness	≤ 10 mm		
		heat of hydration	≤ 220 J/g		
		pozzolanicity - hydroxyl ion concentration			relevant only if pozzolanas are included in the composition
		pozzolanicity - calcium oxide concentration			relevant only if pozzolanas are included in the composition
		insoluble residue content	≤ 5.0%		mandatory declaration only for binary cements with clinker and a maximum of 95% of blast furnace slag
		sulphate content	≤ 4.5%		mandatory declaration
		chloride content	≤ 0.10%		mandatory declaration, threshold not applicable to binary cement with clinker and a maximum of 65% of blast furnace slag
		total alkali content			
		effective alkali content			
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.2.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.2.3.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.2.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures to manufacture concrete/mortar and the expertise required to use this product.

The product description included in the general product information shall include a designation code obtained from Table 5 followed by the designation code obtained from Table 3 (Clause 2.1.4). The harmonised standard may improve the designation code without changing the approach. The designation code shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 5: Very low heat special cement designation code

		K	S	D	P	Q	V	W	#[1]	T	L	LL	F	
name	designation	clinker	blast furnace slag	silica fume	natural pozzolana	natural activated pozzolana	siliceous fly ash	calcareous fly ash	coal bottom ash	burnt shale	limestone	high purity limestone	recycled concrete fines	minor additional constituents
blast furnace cement	VLH III/B	20-34	66-80	-	-	-	-	-	-	-	-	-	-	0-5
	VLH III/C	6-19	81-94	-	-	-	-	-	-	-	-	-	-	0-5
pozzolanic cement	VLH IV/A[2]	65-88	-	12-35 (D 0-10)					-	-	-	-	-	0-5
	VLH IV/B[2]	45-64	-	36-55 (D 0-10)					-	-	-	-	-	0-5
composite cement	VLH V/A[2]	40-64	18-30	-	18-30			-						0-5
	VLH V/B[2]	20-38	31-49	-	31-49			-						0-5

[1] A letter for the designation of the constituent coal bottom ash should be provided in the harmonised standard.

[2] Designation shall be followed by the letters of constituents included in the cement separated by hyphens and between brackets e.g., (P-Q).

VLH III/B designation is only possible for very low heat special cements with a maximum of 4.0% of sulphate content.

VLH IV and V designation is only possible or very low heat special cements with a maximum of 3.5% of sulphate content.

Very low heat cements with a chloride content exceeding 0.10% by mass assessed according to the relevant essential characteristic in Table 1 must display this information in a specific place according to the recommendation provided in the guidelines included in every harmonised standard. That location shall be one where the information is least likely to be overlooked.

2.3. Standard on masonry cement requested in Table 2, point 3, of Annex I

2.3.1. Scope

Cement intended to be exclusively used and manufactured for the preparation of mortar for bricklaying, blocklaying, rendering and plastering (masonry cement), including white cement.

Masonry cement is a combination of the following constituents: natural mineral materials, mineral materials used for or derived from clinker production processes, clinker, blast furnace slag, silica fume, natural pozzolana, natural activated pozzolana, siliceous fly ash, coal bottom ash, calcareous fly ash, burnt shale, limestone, recycled concrete fines, hydrated limes, hydraulic limes and inorganic pigments except those containing carbon black.

All the combinations can contain additives up to 1,0% to improve the manufacture or the properties of the masonry cement.

Masonry cement does not exceed 0,5 % by mass on a dry basis of organic additives.

The intended use of masonry cement for the preparation of concrete, grout, adhesives and other mixes for construction and for the manufacture of construction products including structural and non-structural products is excluded from this product definition.

The intended use of masonry cement for soil stabilisation or improvement, road bases and sub-bases, and capping layers is excluded from this product definition.

Common cement, very low heat special cement, calcium aluminate cement, super sulphated cement and alkali activated cement are also excluded from this product definition.

2.3.2. Performance declaration masonry cement

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 6.

Table 6 : Masonry cement

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration
		portland cement clinker - calcium oxide content			
		portland cement clinker - silicon dioxide content			
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9%		relevant only if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	LL ≤ 0.20% L ≤ 0.50%		mandatory declaration if included in the composition
constituents - silica fume	1	silica fume - amorphous silicon dioxide content	≥ 85%		mandatory declaration if included in the composition
		silica fume - elemental silicon dioxide content	≤ 0.4%		mandatory declaration if included in the composition
		silica fume - loss on ignition 1 h ignition time	≤ 4.0%		mandatory declaration if included in the composition
		silica fume - specific surface	≥ 15.0 m²/g		mandatory declaration if included in the composition
constituents - recycled fines	1	recycled fines - total organic carbon content	≤ 0.8%		mandatory declaration if included in the composition
		recycled fines - sulphate content	≤ 2.0%		mandatory declaration if included in the composition
		recycled fines - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
constituents coal bottom ash	1	coal bottom ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
		coal bottom ash - reactive calcium	≤ 10.0%		relevant only if included

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
		oxide content			in the composition
		coal bottom ash - free calcium oxide content	≤ 2.5%		relevant only if included in the composition
		coal bottom ash - reactive silicon dioxide content	≥ 25.0%		relevant only if included in the composition
		coal bottom ash - soundness	≤ 10 mm		relevant only if included in the composition
masonry cement	1	minimum standard compressive strength - 28 days - masonry cement	≥ 5.0 MPa	Table 26	mandatory declaration
		maximum standard compressive strength - 28 days - masonry cement	≤ 42.5 MPa	Table 27	
		minimum early compressive strength - 7 days	≥ 7.0 MPa	Table 34	
		initial setting time	≥ 60 min		mandatory declaration
		final setting time	≤ 15 h		mandatory declaration
		fineness 90 micrometres sieve	≤ 15%		mandatory declaration
		soundness	≤ 10 mm		mandatory declaration
		sulphate content	≤ 3.5%		mandatory declaration
		chloride content			
		total alkali content			
		effective alkali content			
		air content fresh mortar test			mandatory declaration
		water retention fresh mortar test	≥ 75%		mandatory declaration
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.3.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.3.3.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.3.3.2. Whiteness (only applicable to white cement)

Control of the whiteness of the product according to the applicable procedure and testing.

2.3.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures to manufacture concrete/mortar and the expertise required to use this product.

The product description included in the general product information shall include a designation code obtained from Table 7. The harmonised standard may improve the designation code without changing the approach. The designation code shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 7: Masonry cement designation code

designation	minimum early compressive strength - 7 days	minimum standard compressive strength - 28 days - masonry cement	maximum standard compressive strength - 28 days - masonry cement	minimum portland cement clinker by mass	air content fresh mortar test	water retention fresh mortar test	sulphate content	chloride content
MC 5	-	5.0 MPa	15.0 MPa	25%	≥ 8% ≤ 22%	≥ 80%	≤ 2.5%	-
MC 12,5	7.0 MPa	12.5 MPa	32.5 MPa	40%	≥ 8% ≤ 22%	≥ 80%	≤ 3.5%	≤ 0.10%
MC 12,5 X	7.0 MPa	12.5 MPa	32.5 MPa	40%	≤ 6%	≥ 75%	≤ 3.5%	≤ 0.10%
MC 22,5	10.0 MPa	22.5 MPa	42.5 MPa	40%	≥ 8% ≤ 22%	≥ 80%	≤ 3.5%	≤ 0.10%
MC 22,5 X	10.0 MPa	22.5 MPa	42.5 MPa	40%	≤ 6%	≥ 75%	≤ 3.5%	≤ 0.10%

2.4. Standard on calcium aluminate cement requested in Table 2, point 4, of Annex I

2.4.1. Scope

Calcium aluminate cement intended to be used for the preparation of concrete, mortar, grout, and other mixes for construction and for the manufacture of construction products including structural and non-structural products.

2.4.2. Performance declaration calcium aluminate cement

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 8.

Table 8: Calcium aluminate cement

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
calcium aluminate cement	1	minimum very early compressive strength - 6 h - calcium aluminate cement	≥ 18.0 MPa		mandatory declaration
		minimum very early compressive strength - 24 h - calcium aluminate cement	≥ 40.0 MPa		mandatory declaration
		initial setting time	≥ 90 min		mandatory declaration
		alumina content	≥ 35% ≤ 75%		mandatory declaration
		sulphide content	≤ 0.10%		mandatory declaration
		chloride content	≤ 0.10%		mandatory declaration
		total alkali content	≤ 0.4%		mandatory declaration
		sulphate content	≤ 0.5%		mandatory declaration
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.4.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.4.3.1. Whiteness (only applicable to white cement)

Control of the whiteness of the product according to the applicable procedure and testing.

2.4.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures to manufacture concrete/mortar and the expertise required to use this product.

The product description included in the general product information shall include a designation code described in the harmonised standard. The designation code shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

2.5. Standard on supersulphated cement requested in Table 2, point 5, of Annex I

2.5.1. Scope

Supersulphated cement intended to be used for the preparation of concrete, mortar, grout, and other mixes for construction and for the manufacture of construction products including structural and non-structural products.

2.5.2. Performance declaration supersulphated cement

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 9.

Table 9: Supersulphated cement

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration
		portland cement clinker - total alkali content			
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0%		mandatory declaration
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration
		granulated blast furnace slag - total alkali content			
supersulphated cement	1	minimum standard compressive strength - 28 days	≥ 32.5 MPa	Table 24	mandatory declaration
		maximum standard compressive strength - 28 days		Table 25	mandatory declaration
		minimum early compressive strength - 2 days		Table 32	mandatory declaration
		minimum early compressive strength - 7 days		Table 33	mandatory declaration
		initial setting time			mandatory declaration
		soundness	≤ 10 mm		mandatory declaration
		heat of hydration	≤ 220 J/g		mandatory declaration
		loss on ignition	≤ 5.0%		mandatory declaration
		insoluble residue content	≤ 5.0%		mandatory declaration
		chloride content	≤ 0.10%		mandatory declaration
		sulphate content	≥ 5.0% ≤ 12.0%		mandatory declaration
release of dangerous substances to soil and	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			

ground water					
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.5.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.5.3.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.5.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures to manufacture concrete/mortar and the expertise required to use this product.

The product description included in the general product information shall include a designation code obtained from Table 10. The harmonised standard may improve the designation code without changing the approach. The designation code shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 10: Supersulphated cement designation code

designation	**minimum early compressive strength - 2 days**	**minimum early compressive strength - 7 days**	**minimum standard compressive strength - 28 days**	**maximum standard compressive strength - 28 days**	**initial setting time**
SSC 32,5 L	-	12.0 MPa	32.5 MPa	52.5 MPa	≥ 75 min
SSC 32,5 N	-	16.0 MPa	32.5 MPa	52.5 MPa	≥ 75 min
SSC 42,5 L	-	16.0 MPa	42.5 MPa	62.5 MPa	≥ 60 min
SSC 42,5 N	10.0 MPa	-	42.5 MPa	62.5 MPa	≥ 60 min
SSC 52,5 L	10.0 MPa	-	52.5 MPa	-	≥ 45 min
SSC 52,5 N	20.0 MPa	-	52.5 MPa	-	≥ 45 min

The designation code is only applicable if the following composition is fulfilled:

(a) Granulated blast furnace slag content is greater than 75% by mass;

(b) Calcium sulphate is between 5 and 20% by mass;

(c) Portland cement clinker is less than 5% by mass;

(d) Minor additional constituents are less than 5% by mass;

(e) Additives up to 1,0% to improve the manufacture or the properties of the cement.

2.6. Standard on building lime for construction requested in Table 2, point 6, of Annex I

2.6.1. Scope

Building lime including air lime and lime with hydraulic properties intended to be used for the preparation of mixes for construction and for the manufacture of construction products including structural and non-structural products.

Building lime intended to be used for the preparation of mixes for bricklaying, blocklaying, rendering and plastering.

Building lime intended to be used for soil stabilisation or improvement.

Building lime intended to be used for the preparation of asphalt mixes.

2.6.2. Performance declaration calcium air lime

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 11.

Table 11: Calcium air lime

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration if included in the composition
		portland cement clinker - calcium oxide content			relevant only if included in the composition
		portland cement clinker - silicon dioxide content			relevant only if included in the composition
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration if included in the composition
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration if included in the composition
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon	≥ 25.0%		mandatory declaration if

		dioxide content			included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	L ≤ 0.20% LL ≤ 0.50%		mandatory declaration if included in the composition
constituents - unslaked calcareous fly ash		unslaked calcareous fly ash - reactive calcium oxide content	≥ 15%		relevant only if included in the composition
		unslaked calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
constituents - siliceous fly ash of circulating fluidised bed	1	siliceous fly ash of circulating fluidised bed - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 70%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - free calcium oxide content	≤ 2%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - reactive silicon dioxide content	≥ 20%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - sulphur trioxide content	≤ 6%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - loss on ignition 1 h ignition time			relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - total alkaline content			relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - fineness 315 micrometres sieve	100%		relevant only if included in the composition
constituents - paper sludge ash	1	paper sludge ash - calcium oxide content	≥ 35%		relevant only if included in the composition
		paper sludge ash - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 15%		relevant only if included in the composition
		paper sludge ash - magnesium oxide content	≤ 5%		relevant only if included in the composition
		paper sludge ash - free calcium oxide content	≥ 7%		relevant only if included in the composition
		paper sludge ash - sulphur trioxide content	≤ 2.0%		relevant only if included in the composition

		paper sludge ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
constituents - crystallised basic oxygen furnace slag	1	crystallised basic oxygen furnace slag - calcium oxide content	≥ 35%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 35%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - magnesium oxide content	≤ 9%		relevant only if included in the composition
		crystallised basic oxygen furnace slag-free calcium oxide content	≥ 7% ≤ 15%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - sulphur trioxide content	≤ 0.5%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - soundness	≤ 30 mm		relevant only if included in the composition
constituents - clay powder	1	clay powder - aluminum oxide content	≥ 35%		relevant only if included in the composition
		clay powder - silicon dioxide content	≥ 35%		relevant only if included in the composition
		clay powder - soundness			relevant only if included in the composition
calcium air lime	1	combined calcium oxide and magnesium oxide content	≥ 70.0%		mandatory declaration
		magnesium oxide content	≤ 5.0%		mandatory declaration
		carbon dioxide content	≤ 12.0%		mandatory declaration
		sulphur trioxide content	≤ 2.0%		mandatory declaration
		available lime content	≥ 50.0%		mandatory declaration
		loss on ignition - non hydraulic lime			
		soundness - lime for rendering and plastering	≤ 2 mm		mandatory declaration for hydrated lime and lime with hydraulic properties
		stability - lime for masonry mortars			relevant only for hydrated lime and lime with hydraulic properties
		soundness - quicklime and lime putty			relevant only for quicklime and lime putty
		reactivity 60 degrees Celsius			relevant only for quicklime
		reactivity 50 degrees Celsius			relevant only for quicklime
		reactivity 40 degrees Celsius			relevant only for quicklime
		particle size distribution 10 mm			relevant only for quicklime
		particle size distribution 5 mm			relevant only for quicklime
		particle size distribution 2 mm			relevant only for quicklime
		particle size distribution 0.2 mm			relevant only for quicklime and hydrated lime
		particle size distribution 0.09 mm			relevant only for quicklime and hydrated lime
		particle size - residue on 0.09 mm	≤ 7.0%		mandatory declaration
		particle size - residue on 0.2 mm	≤ 2.0%		mandatory declaration
		free water content			relevant only for hydrated lime, lime putty and milk of lime
		penetration mortar test			relevant only for hydrated lime
		air content mortar test			relevant only for hydrated lime
release of dangerous	7	all included in Part D - Essential characteristics related to the release of			

substances to soil and ground water		dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3 and module A5 scenario "application to the soil including carbonation process"

2.6.3. Performance declaration dolomitic air lime

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 12.

Table 12: Dolomitic air lime

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration if included in the composition
		portland cement clinker - calcium oxide content			relevant only if included in the composition
		portland cement clinker - silicon dioxide content			relevant only if included in the composition
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration if included in the composition
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration if included in the composition
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition

		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	LL ≤ 0.20% L ≤ 0.50%		mandatory declaration if included in the composition
constituents - unslaked calcareous fly ash	1	unslaked calcareous fly ash - reactive calcium oxide content	≥ 15%		relevant only if included in the composition
		unslaked calcareous fly ash - loss on ignition 1 h ignition time	≤ 9%		relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash of circulating fluidised bed - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 70%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - free calcium oxide content	≤ 2%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - reactive silicon dioxide content	≥ 20%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - sulphur trioxide content	≤ 6%		relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - loss on ignition 1 h ignition time			relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - total alkaline content			relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - fineness 315 micrometres sieve	100%		relevant only if included in the composition
constituents - paper sludge ash	1	paper sludge ash - calcium oxide content	≥ 35%		relevant only if included in the composition
		paper sludge ash - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 15%		relevant only if included in the composition
		paper sludge ash - magnesium oxide content	≤ 5%		relevant only if included in the composition
		paper sludge ash - free calcium oxide content	≥ 7%		relevant only if included in the composition
		paper sludge ash - sulphur trioxide	≤ 2.0%		relevant only if included

		content			in the composition
		paper sludge ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
constituents - crystallised basic oxygen furnace slag	1	crystallised basic oxygen furnace slag - calcium oxide content	≥ 35%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 35%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - magnesium oxide content	≤ 9%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - free calcium oxide content	≥ 7% ≤ 15%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - sulphur trioxide content	≤ 0.5%		relevant only if included in the composition
		crystallised basic oxygen furnace slag - soundness	≤ 30 mm		relevant only if included in the composition
constituents - clay powder	1	clay powder - aluminum oxide content	≥ 35%		relevant only if included in the composition
		clay powder - silicon dioxide content	≥ 35%		relevant only if included in the composition
		clay powder - soundness			relevant only if included in the composition
dolomitic air lime	1	combined calcium oxide and magnesium oxide content	≥ 80.0%		mandatory declaration
		magnesium oxide content	> 5.0%		mandatory declaration
		carbon dioxide content	≤ 9.0%		mandatory declaration
		sulphur trioxide content	≤ 2.0%		mandatory declaration
		loss on ignition - non hydraulic lime			
		soundness - quicklime and hydrated lime			
		reactivity 60 degrees Celsius			relevant only for quicklime
		reactivity 40 degrees Celsius			relevant only for quicklime
		reactivity 35 degrees Celsius			relevant only for quicklime
		particle size distribution 10 mm			relevant only for quicklime
		particle size distribution 5 mm			relevant only for quicklime
		particle size distribution 2 mm			relevant only for quicklime
		particle size distribution 0.2 mm			relevant only for quicklime and hydrated lime
		particle size distribution 0.09 mm			relevant only for quicklime and hydrated lime
		particle size - residue on 0.09 mm			
		particle size - residue on 0.2 mm			
		free water content			relevant only for hydrated lime
		penetration mortar test			relevant only for hydrated lime
		air content mortar test			relevant only for hydrated lime
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3 and module A5 scenario “application to the soil including carbonation process”

2.6.4. Performance declaration lime with hydraulic properties

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 13.

Table 13: Lime with hydraulic properties

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration if included in the composition
		portland cement clinker - calcium oxide content			relevant only if included in the composition
		portland cement clinker - silicon dioxide content			relevant only if included in the composition
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration if included in the composition
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration if included in the composition
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	LL ≤ 0.20% L ≤ 0.50%		mandatory declaration if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the

					composition
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0		relevant only if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - silica fume	1	silica fume - amorphous silicon dioxide content	≥ 85%		mandatory declaration if included in the composition
		silica fume - elemental silicon dioxide content	≤ 0.4%		mandatory declaration if included in the composition
		silica fume - loss on ignition 1 h ignition time	≤ 4.0%		mandatory declaration if included in the composition
		silica fume - specific surface	≥ 15.0 m²/g		mandatory declaration if included in the composition
constituents - recycled fines	1	recycled fines - total organic carbon content	≤ 0.8%		mandatory declaration if included in the composition
		recycled fines - sulphate content	≤ 2.0%		mandatory declaration if included in the composition
		recycled fines - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
constituents - coal bottom ash	1	coal bottom ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		coal bottom ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		coal bottom ash - free calcium oxide content	≤ 2.5 %		mandatory declaration if included in the composition
		coal bottom ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		coal bottom ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - pure calcium	1	combined calcium oxide and magnesium oxide content	≥ 70.0%		mandatory declaration

air lime		magnesium oxide content	≤ 5.0%		mandatory declaration
		carbon dioxide content	≤ 12.0%		mandatory declaration
		sulphur trioxide content	≤ 2.0%		mandatory declaration
		available lime content	≥ 50.0%		mandatory declaration
		loss on ignition - non hydraulic lime			
		soundness - lime for rendering and plastering	≤ 2 mm		mandatory declaration for hydrated lime and lime with hydraulic properties
		stability - lime for masonry mortars			relevant only for hydrated lime and lime with hydraulic properties
		soundness - quicklime and lime putty			relevant only for quicklime and lime putty
		reactivity 60 degrees Celsius			relevant only for quicklime
		reactivity 50 degrees Celsius			relevant only for quicklime
		reactivity 40 degrees Celsius			relevant only for quicklime
		particle size distribution 10 mm			relevant only for quicklime
		particle size distribution 5 mm			relevant only for quicklime
		particle size distribution 2 mm			relevant only for quicklime
		particle size distribution 0.2 mm			relevant only for quicklime and hydrated lime
		particle size distribution 0.09 mm			relevant only for quicklime and hydrated lime
		particle size - residue on 0.09 mm	≤ 7.0%		mandatory declaration
		particle size - residue on 0.2 mm	≤ 2.0%		mandatory declaration
		free water content			relevant only for hydrated lime, lime putty and milk of lime
		penetration mortar test			relevant only for hydrated lime
		air content mortar test			relevant only for hydrated lime
constituents - pure dolomitic air lime	1	combined calcium oxide and magnesium oxide content	≥ 80.0%		mandatory declaration
		magnesium oxide content	> 5.0%		mandatory declaration
		carbon dioxide content	≤ 9.0%		mandatory declaration
		sulphur trioxide content	≤ 2.0%		mandatory declaration
		loss on ignition - non hydraulic lime			
		soundness - quicklime and hydrated lime			
		reactivity 60 degrees Celsius			relevant only for quicklime
		reactivity 40 degrees Celsius			relevant only for quicklime
		reactivity 35 degrees Celsius			relevant only for quicklime
		particle size distribution 10 mm			relevant only for quicklime
		particle size distribution 5 mm			relevant only for quicklime
		particle size distribution 2 mm			relevant only for quicklime
		particle size distribution 0.2 mm			relevant only for quicklime and hydrated lime
		particle size distribution 0.09 mm			relevant only for quicklime and hydrated

					lime
		particle size - residue on 0.09 mm			
		particle size - residue on 0.2 mm			
		free water content			relevant only for hydrated lime
		penetration mortar test			relevant only for hydrated lime
		air content mortar test			relevant only for hydrated lime
lime with hydraulic properties (natural hydraulic lime, formulated lime and hydraulic lime)	1	minimum early compressive strength - 7 days - hydraulic lime			
		minimum standard compressive strength - 28 days - lime with hydraulic properties	≥ 2.0 MPa	Table 28	
		maximum standard compressive strength - 28 days - lime with hydraulic properties		Table 29	
		initial setting time - lime with hydraulic properties			
		final setting time - lime with hydraulic properties			mandatory declaration
		sulphur trioxide content	≤ 3.0%		
		available lime content			
		soundness - lime with hydraulic properties	≤ 2 mm		
		stability	≤ 20 mm		mandatory declaration
		particle size distribution 0.2 mm			
		particle size distribution 0.09 mm	≤ 15%		mandatory declaration
		free water content			mandatory declaration
		penetration mortar test			
		air content mortar test			mandatory declaration
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3 and module A5 scenario “application to the soil including carbonation process”

2.6.5. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.6.5.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.6.5.2. Water needs

Control of the water needs of the product according to the applicable procedure and testing.

2.6.5.3. Water retention

Control of the water retention of the product according to the applicable procedure and testing.

2.6.5.4. Density

Control of the density of the product according to the applicable procedure and testing.

2.6.5.5. Yield

Control of the yield of the product according to the applicable procedure and testing.

2.6.5.6. Whiteness

Control of the whiteness of the product according to the applicable procedure and testing.

2.6.5.7. Flowability

Control of the flowability of the product according to the applicable procedure and testing.

2.6.6. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures related to the lime and the expertise required to use this product.

Essential characteristics for which the performance is the same for all types of lime in the same group are not included in the designation codes because they are already established as threshold values in Clauses 2.6.2, 2.6.3 and 2.6.4.

2.6.6.1. Calcium air lime

The product description included in the general product information shall include a designation code obtained from Table 14 and Table 15 for each type of lime as indicated in the title of the tables. The harmonised standard may improve the designation codes without changing the approach. The designation codes shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 14: Calcium quicklime designation code

designation[1]	combined calcium oxide and magnesium oxide content	carbon dioxide content	available lime content	reactivity			particle size distribution				
				60 °C	50 °C	40 °C	10 mm	5 mm	2 mm	0.2 mm	0.09 mm
CL 90-Q (R7,P4)	≥ 90%	≤ 4%	≥ 80%	≤ 3 min	-	-	100%	≥ 95%	-	-	-
CL 90-Q (R7,P3)	≥ 90%	≤ 4%	≥ 80%	≤ 3 min	-	-	-	100	≥ 95%	-	≥ 30%
CL 90-Q (R7,P2)	≥ 90%	≤ 4%	≥ 80%	≤ 3 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 90-Q (R7,P1)	≥ 90%	≤ 4%	≥ 80%	≤ 3 min	-	-	-	-	100	≥ 95%	≥ 85%
CL 90-Q (R6,P4)	≥ 90%	≤ 4%	≥ 80%	≤ 4 min	-	-	100%	≥ 95%	-	-	-
CL 90-Q (R6,P3)	≥ 90%	≤ 4%	≥ 80%	≤ 4 min	-	-	-	100	≥ 95%	-	≥ 30%
CL 90-Q (R6,P2)	≥ 90%	≤ 4%	≥ 80%	≤ 4 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 90-Q (R6,P1)	≥ 90%	≤ 4%	≥ 80%	≤ 4 min	-	-	-	-	100	≥ 95%	≥ 85%
CL 90-Q (R5,P4)	≥ 90%	≤ 4%	≥ 80%	≤ 10 min	-	-	100%	≥ 95%	-	-	-
CL 90-Q (R5,P3)	≥ 90%	≤ 4%	≥ 80%	≤ 10 min	-	-	-	100	≥ 95%	-	≥ 30%
CL 90-Q (R5,P2)	≥ 90%	≤ 4%	≥ 80%	≤ 10 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 90-Q (R5,P1)	≥ 90%	≤ 4%	≥ 80%	≤ 10 min	-	-	-	-	100	≥ 95%	≥ 85%
CL 90-Q (R4,P4)	≥ 90%	≤ 4%	≥ 80%	≤ 25 min	-	-	100%	≥ 95%	-	-	-
CL 90-Q (R4,P3)	≥ 90%	≤ 4%	≥ 80%	≤ 25 min	-	-	-	100	≥ 95%	-	≥ 30%
CL 90-Q (R4,P2)	≥ 90%	≤ 4%	≥ 80%	≤ 25 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 90-Q (R4,P1)	≥ 90%	≤ 4%	≥ 80%	≤ 25 min	-	-	-	-	100	≥ 95%	≥ 85%
CL 80-Q(R5,P4)	≥ 80%	≤ 7%	≥ 65%	≤ 10 min	-	-	100%	≥ 95%	-	-	-
CL 80-Q(R5,P3)	≥ 80%	≤ 7%	≥ 65%	≤ 10 min	-	-	-	100	≥ 95%	-	≥ 30%
CL 80-Q(R5,P2)	≥ 80%	≤ 7%	≥ 65%	≤ 10 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 80-Q(R5,P1)	≥ 80%	≤ 7%	≥ 65%	≤ 10 min	-	-	-	-	100	≥ 95%	≥ 85%
CL 80-Q(R4,P4)	≥ 80%	≤ 7%	≥ 65%	≤ 25 min	-	-	100%	≥ 95%	-	-	-

CL 80-Q(R4,P3)	≥ 80%	≤ 7%	≥ 65%	≤ 25 min	-	-	-	100	≥ 95%	-	≥ 30%
CL 80-Q(R4,P2)	≥ 80%	≤ 7%	≥ 65%	≤ 25 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 80-Q(R4,P1)	≥ 80%	≤ 7%	≥ 65%	≤ 25 min	-	-	-	-	100	≥ 95%	≥ 85%
CL 80-Q(R3,P4)	≥ 80%	≤ 7%	≥ 65%	-	≤ 25 min	-	100%	≥ 95%	-	-	-
CL 80-Q(R3,P3)	≥ 80%	≤ 7%	≥ 65%	-	≤ 25 min	-	-	100	≥ 95%	-	≥ 30%
CL 80-Q(R3,P2)	≥ 80%	≤ 7%	≥ 65%	-	≤ 25 min	-	-	100	≥ 95%	≥ 70%	≥ 50%
CL 80-Q(R3,P1)	≥ 80%	≤ 7%	≥ 65%	-	≤ 25 min	-	-	-	100	≥ 95%	≥ 85%
CL 70-Q(R2,P4)	≥ 70%	≤ 12%	≥ 50%	-	-	≤ 25 min	100%	≥ 95%	-	-	-
CL 70-Q(R2,P3)	≥ 70%	≤ 12%	≥ 50%	-	-	≤ 25 min	-	100	≥ 95%	-	≥ 30%
CL 70-Q(R2,P2)	≥ 70%	≤ 12%	≥ 50%	-	-	≤ 25 min	-	100	≥ 95%	≥ 70%	≥ 50%
CL 70-Q(R2,P1)	≥ 70%	≤ 12%	≥ 50%	-	-	≤ 25 min	-	-	100	≥ 95%	≥ 85%
[1] in addition to the values included in the table, products shall fulfil the applicable thresholds: magnesium oxide content ≤ 5.0% and sulphur trioxide content ≤ 2.0%.											

Table 15 : Hydrated lime, lime putty and milk of lime designation code

designation[1]	**combined calcium oxide and magnesium oxide content**	**carbon dioxide content**	**available lime content**	**form**	**free water content**	**particle size residue by mass**		**soundness**	**stability**	**penetration**	**air content**
						0.09 mm	**0.2 mm**				
CL 90-S	≥ 90%	≤ 4%	≥ 80%	hydrated lime	≤ 2%	≤ 7%	≤ 2%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≤ 12%
CL 90-S-ML	≥ 90%	≤ 4%	≥ 80%	milk of lime	-	≤ 7%	≤ 2%	-	-	≥ 10 mm ≤ 50 mm	≤ 12%
CL 90-S-PL	≥ 90%	≤ 4%	≥ 80%	lime putty	-	≤ 7%	≤ 2%	-	-	≥ 10 mm ≤ 50 mm	≤ 12%
CL 80-S	≥ 80%	≤ 7%	≥ 65%	hydrated lime	≤ 2%	≤ 7%	≤ 2%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≤ 12%
CL 70-S	≥ 70%	≤ 12%	≥ 50%	hydrated lime	≤ 2%	≤ 7%	≤ 2%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≤ 12%
[1] in addition to the values included in the table, products shall fulfil the applicable thresholds: magnesium oxide content ≤ 5.0% and sulphur trioxide content ≤ 2.0%.											

2.6.6.2. Dolomitic air lime

The product description included in the general product information shall include a designation code obtained from Table 16 and Table 17 for each type of lime as indicated in the title of the tables. The harmonised standard may improve the designation codes without changing the approach. The designation codes shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 16: Dolomitic quick lime designation code

designation	**combined calcium oxide and magnesium oxide content**	**magnesium oxide content**	**carbon dioxide content**	**reactivity**			**particle size distribution**				
				60 °C	**40 °C**	**35 °C**	**10 mm**	**5 mm**	**2 mm**	**0.2 mm**	**0.09 mm**
DL 90-30-Q(R2, P4)	≥ 90%	≥ 30%	≤ 6%	-	≤ 25 min	-	100%	≥ 95%	-	-	-
DL 90-30-Q(R2, P3)	≥ 90%	≥ 30%	≤ 6%	-	≤ 25 min	-	-	100	≥ 95%	-	≥ 30%
DL 90-30-Q(R2, P2)	≥ 90%	≥ 30%	≤ 6%	-	≤ 25 min	-	-	100	≥ 95%	≥ 70%	≥ 50%
DL 90-30-Q(R2, P1)	≥ 90%	≥ 30%	≤ 6%	-	≤ 25 min	-	-	-	100	≥ 95%	≥ 85%
DL 90-5-Q(R5,P4)	≥ 90%	> 5%	≤ 6%	≤ 10 min	-	-	100%	≥ 95%	-	-	-
DL 90-5-Q(R5, P3)	≥ 90%	> 5%	≤ 6%	≤ 10 min	-	-	-	100	≥ 95%	-	≥ 30%
DL 90-5-Q(R5,P2)	≥ 90%	> 5%	≤ 6%	≤ 10 min	-	-	-	100	≥ 95%	≥ 70%	≥ 50%
DL 90-5-Q(R5,P1)	≥ 90%	> 5%	≤ 6%	≤ 10 min	-	-	-	-	100	≥ 95%	≥ 85%
DL 90-5-Q(R2, P4)	≥ 90%	> 5%	≤ 6%	-	≤ 25 min	-	100%	≥ 95%	-	-	-
DL 90-5-Q(R2, P3)	≥ 90%	> 5%	≤ 6%	-	≤ 25 min	-	-	100	≥ 95%	-	≥ 30%
DL 90-5-Q(R2, P2)	≥ 90%	> 5%	≤ 6%	-	≤ 25 min	-	-	100	≥ 95%	≥ 70%	≥ 50%
DL 90-5-Q(R2, P2)	≥ 90%	> 5%	≤ 6%	-	≤ 25 min	-	-	-	100	≥ 95%	≥ 85%
DL 85-30-Q(R2, P4)	≥ 85%	≥ 30%	≤ 9%	-	≤ 25 min	-	100%	≥ 95%	-	-	-
DL 85-30-Q(R2, P3)	≥ 85%	≥ 30%	≤ 9%	-	≤ 25 min	-	-	100	≥ 95%	-	≥ 30%

DL 85-30-Q(R2, P2)	≥ 85%	≥ 30%	≤ 9%	-	≤ 25 min	-	-	100	≥ 95%	≥ 70%	≥ 50%
DL 85-30-Q(R2, P1)	≥ 85%	≥ 30%	≤ 9%	-	≤ 25 min	-	-	-	100	≥ 95%	≥ 85%
DL 80-5-Q(R1, P4)	≥ 80%	> 5%	≤ 9%	-	-	≤ 25 min	100%	≥ 95%	-	-	-
DL 80-5-Q(R1, P3)	≥ 80%	> 5%	≤ 9%	-	-	≤ 25 min	-	100	≥ 95%	-	≥ 30%
DL 80-5-Q(R1, P2)	≥ 80%	> 5%	≤ 9%	-	-	≤ 25 min	-	100	≥ 95%	≥ 70%	≥ 50%
DL 80-5-Q(R1, P1)	≥ 80%	> 5%	≤ 9%	-	-	≤ 25 min	-	-	100	≥ 95%	≥ 85%
[1] in addition to the values included in the table, products shall fulfil the applicable threshold: sulphur trioxide content ≤ 2.0%.											

Table 17: Dolomitic hydrated lime designation code

designation[1]	**combined calcium oxide and magnesium oxide content**	**magnesium oxide content**	**carbon dioxide content**	**form**	**particle size**		**penetration**	**air content**
					0.09 mm	**0.2 mm**		
DL 90-30-S1	≥ 90%	≥ 30%	≤ 6%	semihydrated lime	≤ 7%	≤ 2%	≥ 10 mm ≤ 50 mm	≤ 12%
DL 90-5-S1	≥ 90%	> 5%	≤ 6%	semihydrated lime	≤ 7%	≤ 2%	≥ 10 mm ≤ 50 mm	≤ 12%
DL 85-30-S1	≥ 85%	≥ 30%	≤ 9%	semihydrated lime	≤ 7%	≤ 2%	≥ 10 mm ≤ 50 mm	≤ 12%
DL 80-5-S1	≥ 80%	> 5%	≤ 9%	semihydrated lime	≤ 7%	≤ 2%	≥ 10 mm ≤ 50 mm	≤ 12%
[1] in addition to the values included in the table, products shall fulfil the applicable threshold: sulphur trioxide content ≤ 2.0%.								

2.6.6.3. Lime with hydraulic properties

The product description included in the general product information shall include a designation code obtained from Table 18 for each type of lime as indicated in the title of the tables. The harmonised standard may improve the designation codes without changing the approach. The designation codes shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 18: Lime with hydraulic properties designation code

desig-nation	**minimum early compressive strength - 7 days - hydraulic lime**	**minimum standard compressive strength - 28 days - lime with hydraulic properties**	**maximum standard compressive strength - 28 days - lime with hydraulic properties**	**sulphur trioxide content**	**available lime content**	**particle size**		**soundness**	**stability**	**penetration**	**setting time**		**air content**
						0.09 mm	**0.2 mm**				**initial**	**final**	
NHL 2	-	2.0 MPa	7.0 MPa	≤ 2%	≥ 35%	≤ 15%	≤ 2%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 40 h	≤ 5%
NHL 3.5	-	3.5 MPa	10.0 MPa	≤ 2%	≥ 25%	≤ 15%	≤ 2%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 30 h	≤ 5%
NHL 5	2.0 MPa	5.0 MPa	15.0 MPa	≤ 2%	≥ 15%	≤ 15%	≤ 2%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 5%
FL A 2	-	2.0 MPa	7.0 MPa	≤ 2%	≥ 40% ≤ 80%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 40 h	≤ 25%
FL A 3.5	-	3.5 MPa	10.0 MPa	≤ 2%	≥ 40% ≤ 80%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 30 h	≤ 25%
FL A 5	2.0 MPa	5.0 MPa	15.0 MPa	≤ 2%	≥ 40% ≤ 80%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 25%
FL B 2	-	2.0 MPa	7.0 MPa	≤ 2%	≥ 25% ≤ 50%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 40 h	≤ 25%
FL B 3.5	-	3.5 MPa	10.0 MPa	≤ 2%	≥ 25% ≤ 50%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 30 h	≤ 25%
FL B 5	2.0 MPa	5.0 MPa	15.0 MPa	≤ 2%	≥ 25% ≤ 50%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 25%
FL C 2	-	2.0 MPa	7.0 MPa	≤ 2%	≥ 15% ≤ 40%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 40 h	≤ 25%
FL C 3.5	-	3.5 MPa	10.0 MPa	≤ 2%	≥ 15% ≤ 40%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 30 h	≤ 25%

desig-nation	minimum early compressive strength - 7 days - hydraulic lime	minimum standard compressive strength - 28 days - lime with hydraulic properties	maximum standard compressive strength - 28 days - lime with hydraulic properties	sulphur trioxide content	available lime content	particle size		soundness	stability	penetration	setting time		air content
						0.09 mm	0.2 mm				initial	final	
FL C 5	2.0 MPa	5.0 MPa	15.0 MPa	≤ 2%	≥ 15% ≤ 40%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 25%
HL 2	-	2.0 MPa	7.0 MPa	≤ 3%	≥ 10%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 25%
HL 3.5	-	3.5 MPa	10.0 MPa	≤ 3%	≥ 8%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 25%
HL 5	2.0 MPa	5.0 MPa	15.0 MPa[1]	≤ 3%	≥ 4%	≤ 15%	≤ 5%	≤ 2 mm	≤ 20 mm	≥ 10 mm ≤ 50 mm	≥ 1 h	≤ 15 h	≤ 25%
[1] if bulk density is less than 0,90 kg/dm^3 it is permitted to have a strength up to 20 MPa													

2.7. Standard on normal and rapid hydraulic road binders requested in Table 2, point 7, of Annex I

2.7.1. Scope

Hydraulic road binders intended to be used for soil stabilisation or improvement, road bases and sub-bases and capping layers.

The product definition of rapid hardening hydraulic road binders covers any combination of a minimum of 20% by mass of clinker and any combination of the following main constituents: granulated blast furnace slag, natural pozzolana, natural activated pozzolana, siliceous fly ash, calcareous fly ash, coal bottom ash, burnt shale, limestone, recycled fines, hydrated pure calcium lime, natural hydraulic lime.

The product definition of normal hardening hydraulic road binders covers any combination of the following main constituents: clinker, granulated blast furnace slag, natural pozzolana, natural activated pozzolana, siliceous fly ash, calcareous fly ash, coal bottom ash, burnt shale, limestone, recycled fines, siliceous fly ash of circulating fluidised bed, unslaked calcareous fly ash, paper sludge ash, crystallised basic oxygen furnace slag, pure calcium lime and natural hydraulic lime with the following limitations:

(a) less than 40% of paper sludge ash.

(b) less than 40% of crystallised basic oxygen furnace slag.

All the combinations of rapid or normal hardening road binders can contain a maximum of 10% of a minor additional constituent as long as the same constituent is not used as a main constituent.

All the combinations of rapid or normal hardening road binders can contain calcium sulphate.

All the combinations of rapid or normal hardening road binders can contain additives up to 1,0% to improve the manufacture or the properties of the cement. A total content of additives greater than 1,0 % by mass is permitted provided that quantity and function of each of them are stated on the packaging and/or on the delivery note.

2.7.2. Performance declaration hydraulic road binders

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 19.

Table 19: Hydraulic road binders

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration if included in the

cement clinker					composition
		portland cement clinker - calcium oxide content			relevant only if included in the composition
		portland cement clinker - silicon dioxide content			relevant only if included in the composition
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration if included in the composition
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration if included in the composition
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the

					composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	LL ≤ 0.20% L ≤ 0.50%		mandatory declaration if included in the composition
constituents - recycled fines	1	recycled fines - total organic carbon content	≤ 0.8%		mandatory declaration if included in the composition
		recycled fines - sulphate content	≤ 2.0%		mandatory declaration if included in the composition
		recycled fines - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
constituents - coal bottom ash	1	coal bottom ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		coal bottom ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		coal bottom ash - free calcium oxide content	≤ 2.5 %		mandatory declaration if included in the composition
		coal bottom ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		coal bottom ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - siliceous fly ash of circulating fluidised bed	1	siliceous fly ash of circulating fluidised bed - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 70%		mandatory declaration if included in the composition
		siliceous fly ash of circulating fluidised bed - free calcium oxide content	≤ 2%		mandatory declaration if included in the composition
		siliceous fly ash of circulating fluidised bed - reactive silicon dioxide content	≥ 20%		mandatory declaration if included in the composition
		siliceous fly ash of circulating fluidised bed - sulphur trioxide content	≤ 6%		mandatory declaration if included in the composition
		siliceous fly ash of circulating fluidised bed - loss on ignition 1 h ignition time			relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - total alkaline content			relevant only if included in the composition
		siliceous fly ash of circulating fluidised bed - fineness 315 micrometres sieve	100%		mandatory declaration if included in the composition
constituents - unslaked calcareous fly ash	1	unslaked calcareous fly ash - reactive calcium oxide content	≥ 15%		relevant only if included in the composition
		unslaked calcareous fly ash - loss on ignition 1 h ignition time	≤ 9%		mandatory declaration if included in the

					composition
constituents - paper sludge ash	1	paper sludge ash - calcium oxide content	≥ 35%		mandatory declaration if included in the composition
		paper sludge ash - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 15%		mandatory declaration if included in the composition
		paper sludge ash - magnesium oxide content	≤ 5%		mandatory declaration if included in the composition
		paper sludge ash - free calcium oxide content	≥ 7%		mandatory declaration if included in the composition
		paper sludge ash - sulphur trioxide content	≤ 2.0%		mandatory declaration if included in the composition
		paper sludge ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
constituents - crystallised basic oxygen furnace slag	1	crystallised basic oxygen furnace slag - calcium oxide content	≥ 35%		mandatory declaration if included in the composition
		crystallised basic oxygen furnace slag - aggregated silicon dioxide, aluminium oxide, and iron (iii) oxide content	≥ 35%		mandatory declaration if included in the composition
		crystallised basic oxygen furnace slag - magnesium oxide content	≤ 9%		mandatory declaration if included in the composition
		crystallised basic oxygen furnace slag - free calcium oxide content	≥ 7% ≤ 15%		mandatory declaration if included in the composition
		crystallised basic oxygen furnace slag - sulphur trioxide content	≤ 0.5%		mandatory declaration if included in the composition
		crystallised basic oxygen furnace slag - soundness	≤ 30 mm		mandatory declaration if included in the composition
constituents - pure calcium air lime	1	calcium air lime - combined calcium oxide and magnesium oxide content	≥ 70%		mandatory declaration if included in the composition
		calcium air lime - magnesium oxide content	≤ 5%		mandatory declaration if included in the composition
		calcium air lime - carbon dioxide content	≤ 12%		mandatory declaration if included in the composition
		calcium air lime - sulphate content	≤ 2%		mandatory declaration if included in the composition
		calcium air lime - available lime content	≥ 55%		mandatory declaration if included in the composition
		calcium air lime - loss on ignition - non hydraulic lime			relevant only if included in the composition
		calcium air lime - soundness			relevant only if included in the composition
		calcium air lime - reactivity 60 degrees Celsius			
		calcium air lime - particle size distribution 10 mm			
		calcium air lime - particle size distribution 5 mm			
		calcium air lime - particle size distribution 2 mm			
		calcium air lime - particle size distribution 0.2 mm			

		calcium air lime - particle size distribution 0.09 mm			
		calcium air lime - free water content			
		calcium air lime - penetration mortar test			
		calcium air lime - air content mortar test			
		calcium air lime - particle size - residue on 0.09 mm	≤ 7%		mandatory declaration if included in the composition
		calcium air lime - particle size - residue on 0.2 mm	≤ 2%		mandatory declaration if included in the composition
constituents - natural hydraulic lime	1	minimum early compressive strength - 7 days - hydraulic lime			
		minimum standard compressive strength - 28 days - lime with hydraulic properties	≥ 2.0 MPa	Table 28	mandatory declaration if included in the composition
		maximum standard compressive strength - 28 days - lime with hydraulic properties		Table 29	
		initial setting time - lime with hydraulic properties			
		final setting time - lime with hydraulic properties			
		sulphate content			
		available lime content			
		soundness - lime with hydraulic properties	≤ 2%		mandatory declaration if included in the composition
		stability - lime with hydraulic properties	≤ 20 mm		mandatory declaration if included in the composition
		particle size distribution 0.2 mm			
		particle size distribution 0.09 mm	≤ 15%		mandatory declaration if included in the composition
		free water content			
		penetration mortar test			
		air content mortar test			
hydraulic road binder	1	minimum standard compressive strength - 56 days - hydraulic road binders	≥ 2.5 MPa	Table 35	mandatory declaration and threshold for normal hardening products
		maximum standard compressive strength - 56 days - hydraulic road binders		Table 36	relevant only for normal hardening products
		minimum standard compressive strength - 28 days	≥ 12.5 MPa	Table 24	mandatory declaration and threshold for rapid hardening products
		maximum standard compressive strength - 28 days		Table 25	relevant only for rapid hardening products
		minimum early compressive strength - 7 days	≥ 5.0 MPa	Table 33	mandatory declaration and threshold for rapid hardening products
		initial setting time			mandatory declaration
		soundness			mandatory declaration
		sulphate content			mandatory declaration
		fineness 90 micrometres sieve	≤ 15%		mandatory declaration
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.7.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.7.3.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.7.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part and additional information as regards the expertise required to use this product.

The product description included in the general product information shall include a designation code obtained from Table 20 for normal hardening products or Table 21 for rapid hardening products. The harmonised standard may improve the designation code without changing the approach. The designation code shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 20: Normal hydraulic road binders designation code

designation	**minimum standard compressive strength - 56 days**	**maximum standard compressive strength - 56 days**	**sulphate content**	**fineness 90 micrometres sieve**	**initial setting time**	**soundness**
HRB N 1	2.5 MPa	22.5 MPa	≤ 4.0%[1]	≤ 15 %	≥ 150 min	≤ 30 mm
HRB N 2	12.5 MPa	32.5 MPa	≤ 4.0%[1]	≤ 15 %	≥ 150 min	≤ 30 mm
HRB N 3	22.5 MPa	42.5 MPa	≤ 4.0%[1]	≤ 15 %	≥ 150 min	≤ 30 mm
HRB N 4	32.5 MPa	52.5 MPa	≤ 4.0%[1]	≤ 15 %	≥ 150 min	≤ 30 mm
HRB N 4-LS	32.5 MPa	-	≤ 4.0%[1]	≤ 15 %	≥ 150 min	≤ 30 mm

[1] ≤ 9.0% if the composition includes a minimum of 65% of granulated blast furnace slag and withstands the cold water test.

≤ 11.5% if the composition includes burnt shale or calcareous fly ash, only if the majority of the sulphate content comes from the burnt shale or the calcareous fly ash.

Table 21: Rapid hydraulic road binders designation code

designation	**minimum early compressive strength - 7 days**	**minimum standard compressive strength - 28 days**	**maximum standard compressive strength - 28 days**	**sulphate content**	**fineness 90 micrometres sieve**	**initial setting time**	**soundness**
HRB E 2	5.0 MPa	12.5 MPa	32.5 MPa	≤ 4.0%[1]	≤ 15 %	≥ 90 min	≤ 10 mm
HRB E 3	10.0 MPa	22.5 MPa	42.5 MPa	≤ 4.0%[1]	≤ 15 %	≥ 90 min	≤ 10 mm
HRB E 4	16.0 MPa	32.5 MPa	52.5 MPa	≤ 4.0%[2]	≤ 15 %	≥ 90 min	≤ 10 mm
HRB E 4-RS	16.0 MPa	32.5 MPa	-	≤ 4.0%[2]	≤ 15 %	≤ 90 min	≤ 10 mm

[1] ≤ 9.0% if the composition:

- includes burnt shale or calcareous fly ash and the sulphate comes from the main constituents; or
- includes a minimum of 65% of granulated blast furnace slag.

≤ 11.5% if the composition includes burnt shale or calcareous fly ash, only if the majority of the sulphate content comes from the burnt shale or the calcareous fly ash.

[2] ≤ 7.0% if the composition:

- includes burnt shale or calcareous fly ash and the sulphate comes from the main constituents; or
- includes a minimum of 65% of granulated blast furnace slag.

≤ 9.0% if the composition includes burnt shale or calcareous fly ash, only if the majority of the sulphate content comes from the burnt shale or the calcareous fly ash.

2.8. Standard on hydraulic binders for masonry mortars and concrete for non-structural applications requested in Table 2, point 8, of Annex I

2.8.1. Scope

Hydraulic binder intended for use in the preparation of mortar for bricklaying, rendering and plastering.

Hydraulic binder intended for use in the preparation of concrete for non-structural applications.

Hydraulic binders including less than 20% of clinker by mass are excluded from this product definition.

2.8.2. Performance declaration hydraulic binders for masonry mortars and concrete for non-structural applications

The list of essential characteristics and the request to propose threshold levels, and classes and whether their declaration is mandatory, are provided in Table 22.

Table 22: Hydraulic binders for masonry mortars and concrete for non-structural applications

Group	BRCW	Essential characteristic	EU threshold	Class	Comments
constituents - portland cement clinker	1	portland cement clinker - combined calcium silicates content	≥ 66.6%		mandatory declaration
		portland cement clinker - calcium oxide content			
		portland cement clinker - silicon dioxide content			
		portland cement clinker - magnesium oxide content	≤ 5.0%		mandatory declaration
		portland cement clinker - ratio calcium oxide in respect to silicon dioxide	≥ 2.0		mandatory declaration
constituents - granulated blast furnace slag	1	granulated blast furnace slag - ratio calcium oxide plus magnesium oxide in respect to silicon dioxide content	≥ 1.0		mandatory declaration if included in the composition
		granulated blast furnace slag - combined calcium oxide, magnesium oxide and silicon dioxide content	≥ 66.6%		mandatory declaration if included in the composition
		granulated blast furnace slag - glass content	≥ 66.6%		mandatory declaration if included in the composition
constituents - pozzolanic materials	1	pozzolanic materials - natural pozzolana - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		pozzolanic materials - natural activated pozzolana - heat of hydration	≥ 90 J/g		relevant only if included in the composition
		pozzolanic materials - natural activated pozzolana - bound water			relevant only if included in the composition
constituents - siliceous fly ash	1	siliceous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		mandatory declaration if included in the composition
		siliceous fly ash - reactive calcium oxide content	≤ 10.0%		mandatory declaration if included in the composition
		siliceous fly ash - free calcium oxide content	≤ 2.5%		mandatory declaration if included in the composition
		siliceous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition
		siliceous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition

constituents - calcareous fly ash	1	calcareous fly ash - loss on ignition 1 h ignition time	≤ 9.0%		relevant only if included in the composition
		calcareous fly ash - reactive calcium oxide content	≥ 10.0%		mandatory declaration if included in the composition
		calcareous fly ash - reactive silicon dioxide content	≥ 25.0%		mandatory declaration if included in the composition and threshold only applicable if reactive calcium oxide content is between 10.0 and 15.0%
		calcareous fly ash - soundness	≤ 10 mm		mandatory declaration if included in the composition
		calcareous fly ash - activity index 28 days	≥ 75%		mandatory declaration if included in the composition
		calcareous fly ash - activity index 90 days	≥ 85%		mandatory declaration if included in the composition
constituents - burnt shale	1	burnt shale - compressive strength - 28 days	≥ 25.0 MPa		mandatory declaration if included in the composition
		burnt shale - soundness	≤ 10 mm		mandatory declaration if included in the composition
constituents - limestone	1	limestone - calcium carbonate content	≥ 40%		mandatory declaration if included in the composition
		limestone - magnesium carbonate content			relevant only if included in the composition
		limestone - sum of calcium carbonate and magnesium carbonate content	≥ 75%		mandatory declaration if included in the composition
		limestone - clay content	≤ 1.20 g/ 100 g		mandatory declaration if included in the composition
		limestone - total organic carbon content	LL ≤ 0.20% L ≤ 0.50%		mandatory declaration if included in the composition
constituents - hydrated pure calcium air lime	1	calcium air lime - combined calcium oxide and magnesium oxide content	≥ 70%		mandatory declaration if included in the composition
		calcium air lime - magnesium oxide content	≤ 5%		mandatory declaration if included in the composition
		calcium air lime - carbon dioxide content	≤ 12%		mandatory declaration if included in the composition
		calcium air lime - sulphate content	≤ 2%		mandatory declaration if included in the composition
		calcium air lime - available lime content	≥ 50%		mandatory declaration if included in the composition
		calcium air lime - loss on ignition - non hydraulic lime			relevant only if included in the composition
		calcium air lime - soundness			relevant only if included in the composition
		calcium air lime - reactivity 60 degrees Celsius			
		calcium air lime - particle size distribution 10 mm			
		calcium air lime - particle size distribution 5 mm			

		calcium air lime - particle size distribution 2 mm			
		calcium air lime - particle size distribution 0.2 mm			
		calcium air lime - particle size distribution 0.09 mm			
		calcium air lime - free water content			
		calcium air lime - penetration mortar test			
		calcium air lime - air content mortar test			
		calcium air lime - particle size - residue on 0.09 mm	≤ 7.0%		mandatory declaration if included in the composition
		calcium air lime - particle size - residue on 0.2 mm	≤ 2.0%		mandatory declaration if included in the composition
constituents - hydrated pure dolomitic air lime	1	dolomitic air lime - combined calcium oxide and magnesium oxide content	≥ 80.0%		mandatory declaration
		dolomitic air lime - magnesium oxide content	> 5.0%		mandatory declaration
		dolomitic air lime - carbon dioxide content	≤ 9.0%		mandatory declaration
		dolomitic air lime - sulphur trioxide content	≤ 2.0%		mandatory declaration
		dolomitic air lime - loss on ignition - non hydraulic lime			
		dolomitic air lime - soundness - quicklime and hydrated lime			
		dolomitic air lime - reactivity 60 degrees Celsius			relevant only for quicklime
		dolomitic air lime - reactivity 40 degrees Celsius			relevant only for quicklime
		dolomitic air lime - reactivity 35 degrees Celsius			relevant only for quicklime
		dolomitic air lime - particle size distribution 10 mm			relevant only for quicklime
		dolomitic air lime - particle size distribution 5 mm			relevant only for quicklime
		dolomitic air lime - particle size distribution 2 mm			relevant only for quicklime
		dolomitic air lime - particle size distribution 0.2 mm			relevant only for quicklime and hydrated lime
		dolomitic air lime - particle size distribution 0.09 mm			relevant only for quicklime and hydrated lime
		dolomitic air lime - particle size - residue on 0.09 mm			
		dolomitic air lime - particle size - residue on 0.2 mm			
		dolomitic air lime - free water content			relevant only for hydrated lime
		dolomitic air lime - penetration mortar test			relevant only for hydrated lime
		dolomitic air lime - air content mortar test			relevant only for hydrated lime
constituent - natural hydraulic lime	1	minimum early compressive strength - 7 days - hydraulic lime			
		minimum standard compressive strength - 28 days - lime with hydraulic properties	≥ 2.0 MPa	Table 28	mandatory declaration
		maximum standard compressive strength - 28 days - lime with hydraulic properties		Table 29	
		initial setting time - lime with			

		hydraulic properties			
		final setting time - lime with hydraulic properties			
		sulphur trioxide content	≤ 2.0%		mandatory declaration
		available lime content			
		soundness - lime with hydraulic properties	≤ 2 mm		mandatory declaration
		stability	≤ 20 mm		mandatory declaration
		particle size distribution 0.2 mm			
		particle size distribution 0.09 mm	≤ 15%		mandatory declaration
		free water content			
		penetration mortar test			
		air content mortar test			
hydraulic binders for masonry mortars and concrete for non-structural applications	1	minimum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications	≥ 1.5 MPa	Table 30	mandatory declaration
		maximum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications		Table 31	mandatory declaration
		minimum standard compressive strength - 90 days - hydraulic binders for masonry mortars and concrete for non-structural applications		Table 37	
		initial setting time	≥ 60 min		mandatory declaration
		loss on ignition			
		soundness	≤ 10 mm		mandatory declaration
		fineness 90 micrometres sieve	≤ 15 %		mandatory declaration
		air content fresh mortar test	≥ 6% ≤ 20%		mandatory declaration
		water retention fresh mortar test	≥ 80 %		mandatory declaration
		sulphate content	≤ 3 %		mandatory declaration, threshold not applicable for special applications
		chloride content			
release of dangerous substances to soil and ground water	7	all included in Part D - Essential characteristics related to the release of dangerous substances to soil and ground water			
environmental sustainability	7, 8	all included in Part E - Essential characteristics related to environmental sustainability			modules A1-A3

2.8.3. Assessment and verification

All general requirements included in Part H.

Harmonised standards shall define specific factory production control checks for the following:

2.8.3.1. Release of dangerous substances of constituents

Control of the release and content of dangerous substances of the constituents as proxy characteristics for the release of dangerous substances of the final product, including when necessary testing of the constituents separately.

2.8.3.2. Water needs

Control of the water needs of the product according to the applicable procedure and testing.

2.8.3.3. Apparent density

Control of the apparent density of the product according to the applicable procedure and testing.

2.8.3.4. Chloride content

Control of the chloride content of the product according to the applicable procedure and testing.

2.8.4. Guidelines for the drawing up of general product information, instructions for use and safety information

All general requirements included in point 1 of Part I and additional information as regards the procedures to manufacture concrete/mortar and the expertise required to use this product.

The product description included in the general product information shall include a designation code obtained from Table 23. The harmonised standard may improve the designation code without changing the approach. The designation code shall be consistent with the declared performance in the DoPC for the relevant essential characteristics.

Table 23: Hydraulic binders for masonry mortars and concrete for non-structural applications designation code

designation	minimum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications	maximum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications	minimum standard compressive strength - 90 days - hydraulic binders for masonry mortars and concrete for non-structural applications
HB 1,5	1.5 MPa	10.0 MPa	-
HB 3,0	3.0 MPa	15.0 MPa	-
HB 22,5[1]	12.5 MPa	22.5 MPa	22.5 MPa
HB 32,5[1]	22.5 MPa	32.5 MPa	32.5 MPa
HB 42,5[1]	32.5 MPa	42.5 MPa	42.5 MPa
[1] Constituents limited to portland cement clinker, granulated blast furnace slag, siliceous fly ash, granulated and natural pozzolana.			

2.9. Standard on product category rules for cement, building lime for construction and other hydraulic binders requested in Table 2, point 9, of Annex I

The technical content shall establish complementary product category rules (c-PCR) applicable to products covered by standards included in points 2.1 to 2.8 of Part C.

The c-PCR standard shall enable the life cycle analysis of the products concerned for modules A1 to A3 and the declaration of their performance in relation to the essential characteristic environmental sustainability as defined in Part E.

The c-PCR standard shall also provide information for the declaration of Module A5 scenario "application to the soil including carbonation process" this declaration is required for the harmonised standard included in point 2.6 of Part C (building lime for construction).

This standardisation work shall be based on the standards developed in the framework of the standardisation mandate M/350 and its revisions "development of horizontal standardised methods for the assessment of the integrated environmental performance of buildings" of 29 March 2004 as amended.

The c-PCR standards shall focus on the environmental assessment of the products concerned and the use of reliable data provided by the suppliers and service providers involved in the manufacturing process.

The product category rules shall cover:

(a) 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.

(b) 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 and its revisions. In case issues related to the end-of-life are identified as resulting in assessment divergences, they must be addressed in a coherent way.

(c) 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.

(d) general information about the environmental sustainability scenario “application to the soil including carbonation process” and where possible product specific rules.

(e) only in exceptional circumstances product specific rules can be further refined in product standard.

The product category rules shall also set out the boundaries for each module of A1-A3 i.e. which processes and emissions are in the scope, the allocation of energy consumption, including the use of waste as energy source. and the way to deal with measured emissions, if any.

Allocation rules shall be consistent with other product families.

PART D. ESSENTIAL CHARACTERISTICS RELATED TO THE RELEASE OF DANGEROUS SUBSTANCES TO SOIL AND GROUND WATER

The list of essential characteristics related to the release of dangerous substances to soil and ground water is the following:

(1) dangerous substances - leaching - antimony

(2) dangerous substances - leaching - arsenic

(3) dangerous substances - leaching - asbestos

(4) dangerous substances - leaching - barium

(5) dangerous substances - leaching - bromide

(6) dangerous substances - leaching - cadmium

(7) dangerous substances - leaching - chloride

(8) dangerous substances - leaching - chromium, total

(9) dangerous substances - leaching - cobalt

(10) dangerous substances - leaching - copper

(11) dangerous substances - leaching - cyanide

(12) dangerous substances - leaching - fluoride

(13) dangerous substances - leaching - lead

(14) dangerous substances - leaching - mercury

(15) dangerous substances - leaching - molybdenum

(16) dangerous substances - leaching - nickel

(17) dangerous substances - leaching - phenols

(18) dangerous substances - leaching - selenium

(19) dangerous substances - leaching - sulphate

(20) dangerous substances - leaching - tin

(21) dangerous substances - leaching - vanadium

(22) dangerous substances - leaching - zinc

PART E. ESSENTIAL CHARACTERISTICS RELATED TO ENVIRONMENTAL SUSTAINABILITY

The list of predetermined environmental essential characteristics included in points (a) to (s) of Annex II to Regulation (EU) 2024/3110 and the following:

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

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

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

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

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

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

(7) use of secondary material

(8) use of renewable secondary fuels

(9) use of non-renewable secondary fuels

(10) net use of fresh water

(11) hazardous waste disposed

(12) non-hazardous waste disposed

(13) radioactive waste disposed

(14) components for re-use

(15) materials for recycling

(16) materials for energy recovery

(17) exported energy

(18) biogenic carbon content in product

(19) biogenic carbon content in accompanying packaging

PART F ESSENTIAL CHARACTERISTICS BASIC PRINCIPLES AND REFERENCE POINTS

1. GENERAL

Essential characteristics shall provide continuity with the system already in place. However, the performance assessed, and the assessment methods shall reflect the state of the art on performance assessment and declaration.

In particular, assessment methods and information about the following essential characteristics shall be developed.

2. SULPHATE RESISTANCE - FLAT PRISM TEST

Test used as proxy characteristic to the sulphate resistant property of cement. It requires complementary information to provide enough information about the performance of the concrete.

3. SULPHATE RESISTANCE - SQUARE PRISM TEST

Test used as proxy characteristic to the sulphate resistant property of cement. It requires complementary information to provide enough information about the performance of the concrete.

4. TOTAL ALKALI CONTENT

Together with the essential characteristic *effective alkali content*, it shall provide information to identify problems derived from the alkali silica reaction processes in concrete.

5. EFFECTIVE ALKALI CONTENT

Together with the essential characteristic *total alkali content*, it shall provide information to identify problems derived from the alkali silica reaction processes in concrete.

PART G CLASSES OF PERFORMANCE BASIC PRINCIPLES AND REFERENCE POINTS

1. GENERAL

Classification systems are expected to cover the full range of possible performances but some performances may be limited by threshold levels.

The declaration 'NULL' is possible for essential characteristics covered by applicable classes of performance in accordance with point (9)(b) of Annex V to Regulation (EU) 2024/3110 with the exception of essential characteristics subject to mandatory declaration requirement or to a mandatory threshold level.

2. MINIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS

The classes of performance applicable to the essential characteristic *minimum standard compressive strength - 28 days* shall follow the indications provided in Table 24.

Table 24: Classes of performance minimum standard compressive strength - 28 days

essential characteristic	declaration	minimum compressive strength
minimum standard compressive strength - 28 days	12,5	12.5 MPa
	22,5	22.5 MPa
	32,5	32.5 MPa
	42,5	42.5 MPa
	52,5	52.5 MPa

3. MAXIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS

The classes of performance applicable to the essential characteristic *maximum standard compressive strength - 28 days* shall follow the indications provided in Table 25.

Table 25: Classes of performance maximum standard compressive strength - 28 days

essential characteristic	declaration	maximum compressive strength
maximum standard compressive strength - 28 days	32,5	32.5 MPa
	42,5	42.5 MPa
	52,5	52.5 MPa
	62,5	62.5 MPa

4. MINIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS - MASONRY CEMENT

The classes of performance applicable to the essential characteristic *minimum standard compressive strength - 28 days - masonry cement* shall follow the indications provided in Table 26.

Table 26: Classes of performance minimum standard compressive strength - 28 days - masonry cement

essential characteristic	declaration	minimum compressive strength
minimum standard compressive strength - 28 days - masonry cement	5,0	5.0 MPa
	12,5	12.5 MPa
	22,5	22.5 MPa

5. MAXIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS - MASONRY CEMENT

The classes of performance applicable to the essential characteristic *maximum standard compressive strength - 28 days - masonry cement* shall follow the indications provided in Table 27.

Table 27: Classes of performance maximum standard compressive strength - 28 days - masonry cement

essential characteristic	declaration	maximum compressive strength
maximum standard compressive strength - 28 days - masonry cement	15,0	15.0 MPa
	32,5	32.5 MPa
	42,5	42.5 MPa

6. MINIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS - LIME WITH HYDRAULIC PROPERTIES

The classes of performance applicable to the essential characteristic *minimum standard compressive strength - 28 days - lime with hydraulic properties* shall follow the indications provided in Table 28.

Table 28: Classes of performance minimum standard compressive strength - 28 days - lime with hydraulic properties

essential characteristic	declaration	minimum compressive strength
minimum standard compressive strength - 28 days - lime with hydraulic properties	2,0	2.0 MPa
	3,5	3.5 MPa
	5,0	5.0 MPa

7. MAXIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS - LIME WITH HYDRAULIC PROPERTIES

The classes of performance applicable to the essential characteristic *maximum standard compressive strength - 28 days - lime with hydraulic properties* shall follow the indications provided in Table 29.

Table 29: Classes of performance maximum standard compressive strength - 28 days - lime with hydraulic properties

essential characteristic	declaration	maximum compressive strength
maximum standard compressive strength - 28 days - lime with hydraulic properties	7,0	7.0 MPa
	10,0	10.0 MPa
	15,0	15.0 MPa
	20,0	20.0 MPa

8. MINIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS - HYDRAULIC BINDERS FOR MASONRY MORTARS AND CONCRETE FOR NON-STRUCTURAL APPLICATIONS

The classes of performance applicable to the essential characteristic *minimum standard compressive strength - 28* days - *hydraulic binders for masonry mortars and concrete for non-structural applications* shall follow the indications provided in Table 30.

Table 30: Classes of performance minimum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications

essential characteristic	declaration	minimum compressive strength
minimum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications	1,5	1.5 MPa
	3,0	3.0 MPa
	12,5	12.5 MPa
	22,5	22.5 MPa
	32,5	32.5 MPa

9. MAXIMUM STANDARD COMPRESSIVE STRENGTH - 28 DAYS - HYDRAULIC BINDERS FOR MASONRY MORTARS AND CONCRETE FOR NON-STRUCTURAL APPLICATIONS

The classes of performance applicable to the essential characteristic *maximum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications* shall follow the indications provided in Table 31.

Table 31: Classes of performance maximum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications

essential characteristic	declaration	maximum compressive strength
maximum standard compressive strength - 28 days - hydraulic binders for masonry mortars and concrete for non-structural applications	3,0	3.0 MPa
	10,0	10.0 MPa
	15,0	15.0 MPa
	22,5	22.5 MPa
	32,5	32.5 MPa
	42,5	42.5 MPa
	52,5	52.5 MPa

10. MINIMUM EARLY COMPRESSIVE STRENGTH - 2 DAYS

The classes of performance applicable to the essential characteristic *minimum early compressive strength - 2 days* shall follow the indications provided in Table 33.

Table 32: Classes of performance minimum early compressive strength - 2 days

essential characteristic	declaration	minimum compressive strength
minimum early compressive strength - 2 days	10,0	10.0 MPa
	20,0	20.0 MPa
	30,0	30.0 MPa

11. MINIMUM EARLY COMPRESSIVE STRENGTH - 7 DAYS

The classes of performance applicable to the essential characteristic *minimum early compressive strength - 7 days* shall follow the indications provided in Table 33.

Table 33: Classes of performance minimum early compressive strength - 7 days

essential characteristic	declaration	minimum compressive strength
minimum early compressive strength - 7 days	5,0	5.0 MPa
	10,0	10.0 MPa
	12,0	12.0 MPa
	16,0	16.0 MPa

12. MINIMUM EARLY COMPRESSIVE STRENGTH - 7 DAYS - MASONRY CEMENT

The classes of performance applicable to the essential characteristic *minimum early compressive strength - 7 days - masonry cement* shall follow the indications provided in Table 34.

Table 34: Classes of performance minimum early compressive strength - 7 days - masonry cement

essential characteristic	declaration	minimum compressive strength
minimum early compressive strength - 7 days - masonry cement	7,0	7.0 MPa
	10,0	10.0 MPa

13. MINIMUM STANDARD COMPRESSIVE STRENGTH - 56 DAYS - HYDRAULIC ROAD BINDERS

The classes of performance applicable to the essential characteristic *minimum standard compressive strength - 56 days - hydraulic road binders* shall follow the indications provided in Table 35.

Table 35: Classes of performance minimum standard compressive strength - 56 days - hydraulic road binders

essential characteristic	declaration	minimum compressive strength
minimum standard compressive strength - 56 days - hydraulic road binders	2,5	2.5 MPa
	12,5	12.5 MPa
	22,5	22.5 MPa
	32,5	32.5 MPa

14. MAXIMUM STANDARD COMPRESSIVE STRENGTH - 56 DAYS - HYDRAULIC ROAD BINDERS

The classes of performance applicable to the essential characteristic *maximum standard compressive strength - 56 days - hydraulic road binders* shall follow the indications provided in Table 36.

Table 36: Classes of performance maximum standard compressive strength - 56 days - hydraulic road binders

essential characteristic	declaration	maximum compressive strength
maximum standard compressive strength - 56 days - hydraulic road binders	22,5	22.5 MPa
	32,5	32.5 MPa
	42,5	42.5 MPa
	52,5	52.5 MPa

15. MINIMUM STANDARD COMPRESSIVE STRENGTH - 90 DAYS - HYDRAULIC BINDERS FOR MASONRY MORTARS AND CONCRETE FOR NON-STRUCTURAL APPLICATIONS

The classes of performance applicable to the essential characteristic *minimum standard compressive strength - 90 days - hydraulic binders for masonry mortars and concrete for non-structural applications* shall follow the indications provided in Table 37.

Table 37: Classes of performance minimum standard compressive strength - 90 days - hydraulic binders for masonry mortars and concrete for non-structural applications

essential characteristic	declaration	maximum compressive strength
minimum standard compressive strength - 90 days - hydraulic binders for masonry mortars and concrete for non-structural applications	22,5	22.5 MPa
	32,5	32.5 MPa
	42,5	42.5 MPa

PART H ASSESSMENT AND VERIFICATION

Harmonised standards shall define specific factory production control checks for the following:

1. CONSTITUENTS' CONTROL

Amount and quality control of constituents, and if relevant, other additional constituents' potential interactions.

2. FINENESS' CONTROL

Control of the fineness of the constituents and the final product during the relevant stages of the production and storage.

PART I GUIDELINES FOR THE DRAWING UP OF GENERAL PRODUCT INFORMATION, INSTRUCTIONS FOR USE AND SAFETY INFORMATION

1. GENERAL PRODUCT INFORMATION

The following points included in point 1 of Annex IV to Regulation (EU) 2024/3110 are relevant to the harmonised standards requested (references to Annex IV to that regulation included in brackets):

– **Product identification: unique identification code of the product type** (point 1.1);

– **Product description** (point 1.2). Guidelines shall include for all products the product designation code applicable to them together with the list of constituents of the product in percentage by mass. In case the cement is labelled as white cement, the information related to whiteness of the cement shall be provided. Estimated average and minimum service life span is not applicable due to the influence of the other constituents in the concrete/mortar mix;

– **Contact details of the manufacturer or the authorised representative** (point 1.3);

– **Contact details of the manufacturer or the authorised representative when different from the previous point** (point 1.4); and

– **Contact details of the product contact point for construction in the Member State in which the product is made available** (point 1.5).

2. INSTRUCTIONS FOR USE AND SAFETY INFORMATION

The following points included in point 2 of Annex IV to Regulation (EU) 2024/3110 are relevant to the harmonised standards requested. Information already provided in accordance with Article 15(6) of Regulation (EU) 2024/3110 is not required to be included (references to Annex IV to Regulation (EU) 2024/3110):

– **Safety during transport, installation, deinstallation, maintenance, deconstruction and demolition** (point 2.1). In case the product is delivered in a container (bag, bucket, etc.), the total weight of the package shall be visible to facilitate the enforcement of relevant workers protection rules.

– **Compatibility and integration in systems or kits** (point 2.2). Description of potential incompatibilities in the concrete/mortar mix such as the use of certain aggregates or other materials. In case the product requires the use of a non-conventional water/cement ratio, specific instructions about the optimal value and any additional considerations related to it.

– **Recommendations for a product's repair, deinstallation, reuse, remanufacturing, recycling and safe deposit** (point 2.7). Description of the limitations for recycling and other end of life processes, if any.

– **Climate change effects - total** (point 2.8). All products must include information as regards the performance of the essential characteristic climate change effects - total for modules A1-A3 as an aggregated value. This information shall be displayed in a specific place according to the recommendation provided in the guidelines included in every harmonised standard. That location shall be one where the information is least likely to be overlooked.

– **Human toxicity, cancer** (point 2.8). When the essential characteristic human toxicity, cancer is declared, the aggregated value for modules A1-A3 shall also be displayed following the same guidelines included in the previous point.