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Specification for mortar for masonry - Part 1: Rendering and plastering mortar

Définitions et spécifications des mortiers pour maçonnerie - Partie 1: Mortiers d'enduits minéraux extérieurs et intérieurs

Festlegungen für Mörtel im Mauerwerksbau - Teil 1: Putzmörtel

This European Standard was approved by CEN on 12 August 2010.

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Foreword

This document (EN 998-1:2010) has been prepared by Technical Committee CEN/TC 125 “Masonry”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

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

This European Standard supersedes EN 998-1:2003.

The main technical changes compared to the previous edition are in relation to thermal conductivity, where the basis for the declared value has been specified, and in relation to evaluation of conformity, where more details have been given.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of the EU Construction Products Directive (89/106/EEC).

For relationship with EU Directive(s), see informative Annex ZA which is an integral part of this document.

EN 998 *Specification for mortar for masonry* consists of:

Part 1: Rendering and plastering mortar.

Part 2: Masonry mortar.

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

Introduction

The properties of rendering and plastering mortars depend essentially on the type or types of binders used and their respective proportions. Special properties can be achieved by the type of aggregates, admixtures and/or additions used.

Rendering/plastering mortars are defined

a) according to the concept as either:

- designed mortars; or
- prescribed mortars.

b) according to the mode of manufacture as either:

- factory-made mortars;
- semi-finished factory mortars; or
- site-made mortars.

c) according to the properties and/or use, as either:

- general purpose rendering/plastering mortar;
- lightweight rendering/plastering mortar;
- coloured rendering mortar;
- one-coat rendering mortar;
- renovation rendering/plastering mortar;
- thermal rendering/plastering insulating mortar.

Rendering/plastering mortars do not attain their final characteristics until properly hardened after application. The functions performed by a rendering/plastering mortar depend on the properties of the type of materials used, on the thickness of the coats and the type of application. In addition, rendering/plastering mortars determine the surface of the construction.

Regional differences in construction practices and climate, and different constituents for rendering/plastering mortars do not allow for the establishment of standard mix proportions for prescribed mortar that would be applicable in all of Europe. Therefore, the specification of such mix proportions (recipes) and fields of application should be based on practice and experience available in the place of use.

1 Scope

This European Standard is applicable to factory made rendering/plastering mortar based on inorganic binders for external (rendering) and internal (plastering) use on walls, ceilings, columns and partitions. It contains definitions and final performance requirements.

It does not cover mortars where calcium sulphate binder is the principle active binding agent.

Calcium sulphate binder can be used as an additional binder together with air lime. If air lime is the principle active binding component, the rendering/plastering mortar is covered by this European Standard. If the calcium sulphate binder is the principle active binding component, the mortar is covered by EN 13279. The classification is carried out by the producer of the mortar.

Special fire resistant- and acoustical mortars, mortars for structural repair and surface treatments of building elements such as materials for smoothing or trueing, paints, coatings, thin-layer organic renders/plasters and prefabricated units (e.g. plaster boards) are not dealt with in this European Standard.

This European Standard covers rendering/plastering mortars defined in Clause 3 with the exception of site made rendering/plastering mortars. However, this European Standard or part of this European Standard may be used in conjunction with codes of application and national specifications covering site made mortars.

2 Normative references

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

EN 1015-2, *Methods of test for mortar for masonry — Part 2: Bulk sampling of mortars and preparation of test mortars*

EN 1015-7, *Methods of test for mortar for masonry — Part 7: Determination of air content of fresh mortar*

EN 1015-9, *Methods of test for mortar for masonry — Part 9: Determination of workable life and correction time of fresh mortar*

EN 1015-10, *Methods of test for mortar for masonry — Part 10: Determination of dry bulk density of hardened mortar*

EN 1015-11, *Methods of test for mortar for masonry — Part 11: Determination of flexural and compressive strength of hardened mortar*

EN 1015-12, *Methods of test for mortar for masonry — Part 12: Determination of adhesive strength of hardened rendering and plastering mortar on substrates*

EN 1015-18, *Methods of test for mortar for masonry — Part 18: Determination of water absorption coefficient due to capillary action of hardened mortar*

EN 1015-19, *Methods of test for mortar for masonry — Part 19: Determination of water vapour permeability of hardened rendering and plastering mortar*

EN 1015-21, *Methods of test for mortar for masonry — Part 21: Determination of the compatibility of one-coat rendering mortars with substrates*

EN 1745:2002, *Masonry and masonry products — Methods for determining design thermal values*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

3 Terms, definitions and abbreviated terms

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

3.1
rendering/plastering mortar
mix of one or more inorganic binders, aggregates, water and sometimes admixtures and/or additions, used as external renders or internal plasters

3.2
fresh rendering/plastering mortar
mortar completely mixed and ready for use

3.3 Types of rendering/plastering mortar defined according to concept

3.3.1
designed rendering/plastering mortar
mortar whose composition and manufacturing method is chosen by the producer in order to achieve specified properties (performance concept)

3.3.2
prescribed rendering/plastering mortar
mortar made in pre-determined proportions, the properties of which are assumed from the stated proportion of the constituents (recipe concept)

3.4 Types of rendering/plastering mortar according to the mode of manufacture

3.4.1
factory-made rendering/plastering mortar
mortar batched and mixed in a factory. It can be 'dry mortar' which is ready mixed only requiring the addition of water, or ' wet mortar' which is supplied ready for use

3.4.2 Semi-finished rendering/plastering factory mortar

3.4.2.1
prebatched rendering/plastering mortar
mortar whose constituents are wholly batched in a factory, supplied to the building site and mixed there according to the manufacturer's specification and conditions

3.4.2.2
premixed lime-sand rendering/plastering mortar
mortar whose constituents are wholly batched and mixed in a plant, supplied to the building site where further constituents specified or provided by the factory are added (e.g. cement)

3.4.3
site-made rendering/plastering mortar
mortar composed of individual constituents batched and mixed on the building site

3.5 Types of rendering/plastering mortar according to properties and/or use

3.5.1
general purpose rendering/plastering mortar
rendering/plastering mortar without special characteristics

NOTE It can be prescribed or designed.

3.5.2
lightweight rendering/plastering mortar
designed rendering/plastering mortar with a dry hardened density below a prescribed figure (see Table 2, L1)

3.5.3
coloured rendering/plastering mortar
designed rendering/plastering mortar specially coloured

NOTE The colour is achieved e.g. with pigments or coloured aggregates.

3.5.4
one coat rendering mortar for external use
designed rendering mortar applied in one coat which fulfils all the functions of a multicoat system used externally and which is usually specifically coloured

NOTE One coat mortars for external use can be manufactured using normal and/or lightweight aggregates.

3.5.5
renovation mortar
designed rendering/plastering mortar used on moist masonry walls containing water soluble salts

NOTE These mortars have a high porosity and vapour permeability and reduced capillary action.

3.5.6
thermal insulating mortar
designed mortar with specific insulating properties

3.6 Further definitions

3.6.1
declared value
value that a manufacturer is confident in achieving, bearing in mind the precision of test and variability of process

3.6.2
render/plaster
materials used externally are referred to as render/rendering and materials used internally as plaster/plastering

3.6.3
rendering/plastering system
sequence of coats to be applied to a background which can be used in conjunction with the possible use of a support and/or reinforcement and/or a pre-treatment

NOTE In some cases the pre-treatment can be regarded as a separate coat in addition to the specified system.

3.6.4
render/plaster coat
layer applied in one or more operations or passes with the same mix, with the previous pass not being allowed to set before the next one is made (i.e. fresh on fresh)

3.6.5
undercoat
lower coat or coats of a system

3.6.6
final coat
last coat, decorative or not, of a multicoat rendering or plastering system

3.7 Abbreviated terms

GP: General purpose rendering/plastering mortar

LW: Lightweight rendering/plastering mortar

CR: Coloured rendering mortar

OC: One coat rendering mortar for external use

R: Renovation mortar

T: Thermal insulating mortar

FP: Fracture pattern

4 Materials

Raw materials shall have characteristics permitting the finished product to conform with the requirements of this European Standard. The manufacturer shall keep records of how suitability of materials is established.

5 Requirements

5.1 General

The requirements and properties for hardened and fresh mortar specified in this European Standard shall be defined in terms of the test methods and procedures referred to in this European Standard. For these tests, the mortar shall be sampled in accordance with EN 1015-2.

The conformity criteria given in Table 2 for hardened mortar and 5.3 for fresh mortar relate to initial type tests (see 8.2) and consignment testing (see Annex A). For production evaluation purposes the conformity criteria shall be defined in the factory production control documentation (see 8.3).

NOTE The mortar properties obtained under laboratory conditions cannot always be directly comparable with the mortar properties obtained under site conditions.

5.2 Properties of hardened mortars

5.2.1 General

Different fields of use and exposure conditions require mortars with different properties and performance levels. For this purpose, compressive strength, water absorption and thermal conductivity shall be classified according to Table 1. The properties relevant to the intended use and/or type of product shall be declared according to Table 2. The declared values and/or classes shall meet the requirements specified in Table 2.

When relevant for the use for which the rendering/plastering mortar is placed on the market, additional properties to those specified in Table 2 may be declared for each type of mortar where a dash indicates 'no requirement'.

The declaration for reaction to fire and durability of mortars shall be made in accordance with the following provisions:

5.2.2 Reaction to fire

Rendering/plastering mortars containing a mass or volume fraction of ≤ 1,0 % (whichever is the most onerous) of homogeneously distributed organic materials are classified as reaction to fire Class A1 without the need to test.

Rendering/plastering mortars containing a mass or volume fraction of > 1,0 % (whichever is the most onerous) of homogeneously distributed organic materials shall be classified in accordance with EN 13501-1 and the appropriate reaction to fire class declared.

NOTE Attention is drawn to the Commission Decision 96/603/EC, as amended, in which non-combustible mortar containing not more than a mass or volume fraction of 1,0 % (whichever is the more onerous) of homogeneously distributed organic materials are classified as reaction to fire Class A1 without testing.

5.2.3 Durability

5.2.3.1 One-coat rendering mortar

The durability against freeze/thaw of one-coat rendering mortar shall be assessed by testing adhesion and water permeability after weathering cycles (see Table 2, L4 and L7).

5.2.3.2 All rendering mortars except one-coat

Until a European method of test is available, the freeze-thaw resistance shall be evaluated and declared to the provisions valid in the intended place of use of the mortar.

Table 1 — Classification for hardened mortar properties

Properties	Categories	Values
Range of compressive strength at 28 days	CS I	0,4 N/mm^2 to 2,5 N/mm^2
	CS II	1,5 N/mm^2 to 5,0 N/mm^2
	CS III	3,5 N/mm^2 to 7,5 N/mm^2
	CS IV	≥ 6 N/mm^2
Capillary water absorption	W 0	not specified
	W 1	C ≤ 0,40 kg/m²·min^{0,5}
	W 2	C ≤ 0,20 kg/m^2·min^{0,5}
Thermal conductivity	T 1	≤ 0,1 W/m·K
	T 2	≤ 0,2 W/m·K

Table 2 — Summary of requirements for hardened mortars

No.	Test parameter	Method of test	GP	LW	CR	OC	R	T
L1	Dry bulk density (kg/m^3)	EN 1015-10	Declared range of values	Declared range of values ≤ 1 300 kg/m^3	Declared range of values	Declared range of values	Declared range of values	Declared range of values
L2	Compressive strength (categories)	EN 1015-11 [a]	CS I to CS IV	CS I to CS III	CS I to CS IV	CS I to CS IV	CS II	CS I to CS II
L3	Adhesion (N/mm^2 and fracture pattern (FP) A, B or C)	EN 1015-12	≥ Declared value and fracture pattern (FP)	≥ Declared value and fracture pattern (FP)	≥ Declared value and fracture pattern (FP)	-	≥ Declared value and fracture pattern (FP)	≥ Declared value and fracture pattern (FP)
L4	Adhesion after weathering cycles (N/mm^2 and fracture pattern (FP) A, B or C)	EN 1015-21	-	-	-	Declared value and fracture pattern (FP)	-	-
L5	Capillary water absorption (categories) (for mortars intended to be used in external elements)	EN 1015-18	W 0 to W 2	W 0 to W 2	W 0 to W 2	W 1 to W 2	≥ 0,3 kg/m^2 after 24 h	W 1
L6	Water penetration after capillary water absorption test (in mm)	EN 1015-18	-	-	-	-	≤ 5 mm	-
L7	Water permeability on relevant substrates after weathering cycles (ml/cm^2 after 48 h)	EN 1015-21	-	-	-	≤ 1 ml/cm^2 after 48 h	-	-
L8	Water vapour permeability coefficient (μ) (for mortars intended to be used in external elements)	EN 1015-19 [a b]	≤ Declared value	≤ Declared value	≤ Declared value	≤ Declared value	≤ 15	≤ 15

Table 2 — Summary of requirements for hardened mortars *(concluded)*

No.	Test parameter	Method of test	GP	LW	CR	OC	R	T
L9	Thermal conductivity mean $\lambda_{10,dry,mat}$ -values (W/m·K) [c] (for mortars intended to be used in elements subject to thermal requirements)	EN 1745:2002, Table A.12	Tabulated mean value (P = 50 %)	Tabulated mean value (P = 50 %)	Tabulated mean value (P = 50 %)	Tabulated mean value (P = 50 %)	Tabulated mean value (P = 50 %)	-
L10		EN 1745:2002, 4.2.2	-	-	-	-	-	T 1: ≤ 0,10 T 2: ≤ 0,20
L11	Reaction to fire (class)	EN 13501-1	Declaration as per 5.2.2					
L12	Durability	-	Declaration as per 5.2.3					

[a] For determination of storage conditions, the air lime content shall be calculated as calcium hydroxide $Ca(OH)_2$.

[b] Test method EN 1015-19 determines water vapour permeance Λ in kg/ m^2·s·Pa whereas the value specified in this European Standard is the water vapour permeability coefficient μ.

The calculation of μ from Λ is given by the following equation: $\mu = \frac{1{,}94 \cdot 10^{-10}}{\Lambda}$.

$1{,}94 \cdot 10^{-10}$ corresponding to air equivalent water vapour permeability factor for a temperature of 20 °C and atmospheric air pressure of 101 325 Pa.

[c] In addition another fractile may be used. If so the used fractile shall be provided together with the additional provided $\lambda_{10,dry,mat}$ –value.

5.3 Properties of fresh mortars

5.3.1 Workable life: The workable life shall be declared by the manufacturer. When the rendering/plastering mortar is sampled from a consignment in accordance with EN 1015-2 and tested in accordance with EN 1015-9 the workable life shall not be less than the declared value.

The workable life shall be tested only in the case of rendering/plastering mortars which contain admixtures for controlling the setting, e.g. factory-made 'wet' mortar.

5.3.2 Air content: When relevant for the use for which the rendering/plastering mortar is placed on the market the range in which the air content will fall shall be declared by the manufacturer. When sampled from a consignment in accordance with EN 1015-2 and tested in accordance with EN 1015-7 the air content shall fall within the declared range.

For rendering/plastering mortar where porous aggregates are used the air content may alternatively be determined by testing the fresh mortar density according to EN 1015-6.

5.4 Mixing of mortar on site

If certain types of mortar need specific site mixing equipment procedures or times, these shall be specified by the manufacturer. Mixing time is measured from the time when all constituents have been added.

6 Designation of rendering and plastering mortars

The designation shall include the following, as relevant:

a) number and date of issue of this European Standard;

b) product name and/or type of mortar according to 3.5.1 to 3.5.6;

c) name of manufacturer;

d) a code for or the date of production.

The properties for mortar shall be designated as relevant by declaring specific values or categories for hardened mortar according to Table 2 and for fresh mortar according to 5.3.

7 Marking and labelling

The designation (see Clause 6) or abbreviation identifying the designation shall be marked on the packaging, delivery ticket or the manufacturer's data sheet or other information accompanying the product.

NOTE For CE marking and labelling ZA.3 applies. When ZA.3 requires the CE marking to be accompanied by the same information as required by this clause the requirements of this clause can be considered to have been met.

8 Evaluation of conformity

8.1 General

Conformity assessment is needed to demonstrate, by Initial Type Testing, ITT (8.2), that the product complies with the requirements of this European Standard and that the performance declarations represent the true behaviour of the product and, by Factory Production Control, FPC (8.3), that the performance declarations based on initial type testing results remain valid for subsequent products.

The manufacturer (or his agent) shall demonstrate the compliance for his product with the requirements of this European Standard by carrying out both ITT and FPC and is responsible for the product being in compliance with all the provisions.

8.2 Initial type testing, ITT

8.2.1 General

After completion of the development of a new product type and before the commencement of the manufacture and the offering for sale, appropriate initial type testing shall be carried out that the properties predicted during the development meet the requirements of this European Standard and the values to be declared for the product.

In the ITT-process a manufacturer may take in consideration already existing test results.

For the verification of product characteristics requiring testing which is needed to be performed only during ITT, an individual manufacturer may use the ITT results obtained by someone else (another manufacturer) or carried out by industry to justify his own declaration of conformity regarding a product that is manufactured according to the same design and with raw materials, costituents and manufacturing methods of the same kind, provided that permission is given, and the test is valid for both products.

Where a manufacturer produces the same product on more than one production line or unit, or in more than one factory, there may be no need to repeat ITT for these different production lines or units (the manufacturer takes responsibility for ensuring that the products are indeed the same).

8.2.2 Sampling

Sampling shall be carried out in accordance with Annex A.

8.2.3 Reference test

The tests to be conducted shall be reference tests as described in this European Standard for properly dried and hardened product properties according to paragraph 5, consistent with the product type’s intended use.

8.2.4 Repeating of initial type test

Initial type test shall also be carried out on existing products when a change in the basic materials or manufacturing procedures leads to the manufacturers consider to be a change in the product designation or the use of the product. In these cases the appropriate initial type tests carried out are those for the properties which are affected or need confirming and any new properties introduced by a change of use.

8.2.5 Recording

The results of the initial type tests shall be recorded.

8.2.6 Application of test methods

As defined in the relevant clauses defining the requirements, tests are not to be performed when the declaration of characteristics is based on tabulated values.

NOTE For CE marking, where some characteristics are not subject to regulations, it might be possible using the NPD option (see Annex ZA).

8.3 Factory Production Control, FPC

8.3.1 General

The manufacturer shall establish, document and maintain a FPC-system to enable continuing conformity with the standard and the declared values of the product placed on the market.

The FPC-system shall consist of procedures for process control (incoming raw material and production process), finished products (tests on finished products and test equipment), and traceability treatment of non-conforming products.

Any FPC system complying with EN ISO 9001, and made specific to the requirements of this European Standard, is deemed to satisfy the requirement of FPC.

8.3.2 Process control

8.3.2.1 Incoming raw materials

The manufacture shall define the acceptance criteria of raw materials, and the procedures operated to ensure that these are met.

8.3.2.2 Production process

The relevant features of the production processes shall be defined giving the frequency of the manufacturer's inspection checks, together with the required criteria and the required in-progress product characteristics. Actions to be taken when the criteria or the product characteristics are not achieved shall be specified by the manufacturer within the FPC documentation.

All production equipment that has an influence on the declared values shall be controlled and regularly inspected according to the documented procedures, frequencies and criteria.

8.3.3 Finished product conformity

8.3.3.1 Tests on the finished product

The FPC system shall incorporate a sampling plan containing the frequencies of testing of the products. The results of testing shall be recorded.

For production evaluation the manufacturer shall define the conformity criteria in the FPC documentation.

Alternative methods of test, to the reference methods specified in this European Standard may be adopted except for initial type tests and in case of dispute, provided that these alternative methods satisfy the following:

a) a correlation can be demonstrated between the results from the reference test and those from the alternative test and

b) the information is available on which the correlation is based on.

The sampling shall be representative for the production.

The results of testing shall meet the specified compliance criteria and shall be recorded.

8.3.3.2 Test equipment

All weighing, measuring and testing equipment which has an influence on the declared values shall be calibrated and regularly inspected in accordance with the documented procedures and frequencies, as stated in the FPC manual.

8.3.4 Statistical techniques

Where and when possible and applicable, the results of inspections and testing shall be interpreted by means of statistical techniques, by attributes or by variables, to verify the product characteristics and to determine if the production conforms to the compliance criteria and the product conforms to the declared values.

8.3.5 Traceability – marking and stock control of products

The marking and stock control shall be documented. Products shall be identifiable and traceable with regard to their production origin.

8.3.6 Non conforming products

The procedure for dealing with non conforming products shall be documented. Products that do not conform to the requirements shall be segregated and marked accordingly. However, these may be reclassified by the manufacturer and given different declared values. The manufacturer shall take action to avoid a recurrence of the non conformity.

Annex A
(normative)

Sampling for initial type testing and independent testing of consignments

A.1 General

This sampling procedure shall apply for initial type testing and in the event that there is a requirement for an assessment of product compliance. For independent testing where only those properties declared by the manufacturer shall be assessed, representatives of all parties shall have the opportunity to be present at the time of sampling.

The required amount of rendering/plastering mortar for one sample shall be sampled from a lot of mortar not more than 10 m^3.

A.2 Sampling procedure

The sampling procedure shall follow one of the procedures laid down in EN 1015-2.

NOTE The choice of the method of sampling will normally be dictated by the physical form of the lot in question.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/116 “Masonry and related products” given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the rendering/ plastering mortars covered by this annex for the intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING: Other requirements and other EU Directives, not affecting the fitness of intended use(s), can be applicable to the rendering/plastering mortars falling within the scope of this European Standard.

NOTE In addition to any specific clauses relating to dangerous substances contained in this Standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply. An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (CREATE, accessed through http://ec.europa.eu/enterprise/construction/internal/dangsub/dangmain_en.htm).

This annex establishes the conditions for the CE marking of the rendering/plastering mortars intended for the uses indicated in Table ZA.1 and shows the relevant clauses applicable.

The scope of this annex is defined by Table ZA.1.

Table ZA.1 — Scope and relevant clauses

Product: Factory-made rendering and plastering mortars as covered in Clause 1 of this standard, comprising the following types:

- General purpose mortar (GP);
- Lightweight mortar (LW);
- Coloured rendering mortar (CR);
- One coat mortar for external use (OC);
- Renovation mortar (R);
- Thermal insulating mortar (T).

Intended use: In walls, ceilings, columns and partitions as covered by the Scope of this standard

Essential Characteristics	**Requirement clauses in this European Standard**	**Levels and/or classes**	**Notes/ Type of declaration**
Reaction to fire *(for rendering/plastering mortars intended to be used in elements subject to fire requirements)*	5.2.2	Euroclasses A1 to F	Declared Euroclass
Water absorption *(for rendering/plastering mortars intended to be used in external elements)*	Table 2, L5	None	Categories (W 0 to W 2) except R for which declared values of water absorption (≥ 0,3 kg/m^2 after 24 h) are required
Water permeability after weathering cycles *(OC rendering mortar only)*	Table 2, L7	None	Water permeability (≤ 1 ml/cm^2 after 48 h)
Water vapour permeability *(for rendering/plastering mortars intended to be used in external elements)*	Table 2, L8	None	Declared coefficient μ (≤ 15 for R and T)
Adhesion *(all rendering/plastering mortars except OC)*	Table 2, L3	None	Declared value (N/mm²) and fracture pattern (FP)
Adhesion after weathering cycles *(OC rendering mortar only)*	Table 2, L4	None	Declared value (N/mm²) and fracture pattern (FP)
Thermal conductivity/Density *(for rendering/ plastering mortars intended to be used in elements subject to thermal requirements except T)*	Table 2, L9	None	Declared tabulated or measured mean value P = 50 %)
Thermal conductivity *(for T mortars only)*	Table 2, L10	None	Categories (T1 to T2)
Durability of OC mortar *(against freeze/thaw)*	5.2.3.1 and Table 2, L4 and L7	None	Declaration as per 5.2.3.1
Durability of all mortars except OC *(in external use)*	5.2.3.2 and Table 2, L3 and L5	None	Declaration as per 5.2.3.2
Dangerous substances	ZA.1 Note above	None	According to ZA.3 (penultimate paragraph)

The requirement on a certain essential characteristic is not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option “No performance determined” (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option shall not be used, however, where the characteristic is subject to a threshold level.

ZA.2 Procedure for the attestation of conformity of rendering/plastering mortars

ZA.2.1 System of attestation of conformity

The system of attestation of conformity of rendering/plastering mortars indicated in Table ZA.1, in accordance with the Decision of the Commission of 14 October 1997 as given in annex III of the mandate for “Masonry and related products M 116” is shown in Table ZA.2 for the indicated intended uses and relevant levels or classes.

Table ZA.2 — System of conformity

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Factory made rendering/ plastering mortars	In wall, column, partition and ceiling finishes	—	4 [a]
[a] See Directive 89/106/EEC (CPD) annex III.2 (ii), Third possibility.			

The attestation of conformity of the rendering/plastering mortars indicated in Table ZA.1 shall be based on the evaluation of conformity procedures indicated in Table ZA.3 resulting from the application of the clauses of this European Standard.

Table ZA.3 — Assignment of evaluation of conformity tasks for rendering/plastering mortar under system 4

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all relevant characteristics of Table ZA.1	8.3
	Initial type testing (ITT)	All relevant characteristics of Table ZA.1	8.2

ZA.2.2 EC Declaration of conformity

When compliance with the conditions of this annex is achieved, the manufacturer or his agent established in the EEA shall prepare and retain a declaration of conformity (EC Declaration of conformity), which authorises the affixing of the CE marking. This declaration shall include:

a) name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

b) description of the product (type, identification, use, etc.), and a copy of the information accompanying the CE marking;

c) provisions to which the product conforms (e.g. Annex ZA of this European Standard);

d) particular conditions applicable to the use of the product, (e.g. provisions for use under certain conditions, etc.);

e) name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

The above mentioned declaration shall be presented in the official language or languages of the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EC and shall be shown on the packaging or an accompanying label or on the accompanying commercial documents, e.g. the delivery note. The following information shall accompany the CE marking symbol:

a) name or identifying mark and registered address of the producer;

b) the last two digits of the year in which the marking is affixed;

c) reference to this European Standard;

d) description of the product: see type of product as per 3.5.1 to 3.5.6 of this standard and intended uses in Table ZA.1 of this annex;

e) information on the relevant essential characteristics in Table ZA.1 presented as declared values and, where relevant, level or class to declare for each essential characteristic as indicated in the column "Notes/Type of declaration" of Table ZA.1;

f) “No performance determined” for characteristics where this is relevant.

The “No performance determined” (NPD) option shall not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements.

Figure ZA.1 gives an example of the information to be given on the packaging, label and/or commercial documents.

CE -	*CE conformity marking, consisting of the* *"CE"-symbol given in Directive 93/68/EEC.*
AnyCo Ltd, PO Box 21, B-1050 **10**	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed*
EN 998–1:2010 **General purpose rendering mortar (GP)** **for external use** **Reaction to fire:** Class A1 **Adhesion:** 0,3 N/mm^2 - **FP:** B **Water absorption:** W 1 **Water vapour diffusion coeff.:** μ 25 **Thermal conductivity:** ($\lambda_{10,dry}$) 0,93 W/mK (tab. mean value; P = 50 %) **Durability:** (against freeze/thaw)**:** evaluation based on provisions valid in the intended place of use of the mortar	*No. of European Standard* *Description of product* *and* *information on regulated characteristics*

Figure ZA.1 — Example CE marking information

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE European legislation without national derogations need not be mentioned.

Bibliography

[1] EN 1015-1, *Methods of test for mortar for masonry — Part 1: Determination of particle size distribution (by sieve analysis)*

[2] EN 1015-6, Methods of test for mortar for masonry — Part 6: Determination of bulk density of fresh mortar

[3] EN 13279 (all parts), *Gypsum binders and gypsum plasters*

[4] EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2008)*

[5] 96/603/EC, Commission Decision of 4 October 1996 establishing the list of products belonging to Classes A 'No contribution to fire' provided for in Decision 94/611/EC implementing Article 20 of Council Directive 89/106/EEC on construction products (Text with EEA relevance)