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M 116

MANDATE TO CEN/CENELEC
CONCERNING THE EXECUTION OF STANDARDISATION WORK
FOR HARMONIZED STANDARDS ON

MASONRY AND RELATED PRODUCTS

RELATED TO THE FOLLOWING END USES

02/33: FOUNDATIONS AND RETAINING WALLS
04/33: EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS
11/33: EXTERNAL FINISHES OF WALLS
12/33: INTERNAL FINISHES OF WALL AND PARTITIONS
14/33: CEILING FINISHES
18/33: DRAINAGE (INC. HIGHWAYS) AND DISPOSAL OF OTHER LIQUIDS AND GASEOUS WASTE

FOREWORD

This mandate is issued by the Commission to CEN/CENELEC within the context of the Council Directive of 21 December, 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (89/106/EEC), hereafter referred to as "the Directive" or "the CPD".

One of the aims of the Directive being the removal of technical barriers to trade in the construction field, in so far as they cannot be removed by means of mutual recognition among Member States, it seems appropriate that standardisation mandates cover, at least during a first phase of the mandating programme, construction products likely to be subject to technical barriers to trade.

This mandate is intended to lay down provisions for the development and the quality of harmonised European standards in order, on the one hand, to make "approximation" of national laws, regulations and administrative provisions (hereafter referred to as "regulations") possible and, on the other hand, to allow products conforming to them to be presumed to be fit for their intended use, as defined in the Directive.

In this respect, this mandate takes account of the basic principles prevailing in the regulations of Member States, particularly those described in chapters 3 and 4.2 of the Interpretative documents, to which standardisers must refer. As stated by the Directive, the responsibility Member States have for construction works on their territory remains unchanged.

In order to fulfill the provisions of article 7.1 of the CPD the present mandate has been structured in the following way:

Chapter I Grounds. General conditions within the framework of the CPD.

Chapter II Execution of the mandate. Conditions regarding the programming, development and execution of the standardisation work.

Chapter III Harmonised standards. Conditions regarding the content and the presentation of the harmonised standards.

CHAPTER I. GROUNDS

1. This mandate falls within the framework of the general policy of the Commission with respect to technical harmonisation and standardisation, as well as within the scope of the Directive. It replaces any previous mandate on the same products formerly issued on a provisional base by the Commission.

2. This mandate is based on article 7 of the Directive and has taken into consideration the Interpretative Documents[(1)] that serve as reference for the establishment of the harmonised standards (see article 12 of the Directive). It serves to ensure the quality of the harmonised standards for products, always with reference to the state of the art, with particular reference to the fitness of the products listed in annex 1 intended to be used in: **FOUNDATIONS AND RETAINING WALLS**; **EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS; EXTERNAL FINISHES OF WALLS; INTERNAL FINISHES OF WALL AND PARTITIONS; CEILING FINISHES and DRAINAGE (INC. HIGHWAYS) AND DISPOSAL OF OTHER LIQUIDS AND GASEOUS WASTE,** enabling the works to satisfy the essential requirements set out in annex 1 of the Directive, provided that barriers to trade in these products exist and that the products fall within the scope of article 2.1 of the Directive;

3. Levels or classes of requirements for the works are under the responsibility of Member States and are not covered by the present mandate. As a consequence, they are not expected to be defined in the harmonised standard.

4. Levels or classes of requirements for the products may be determined either in the Interpretative Documents or according to the procedure provided for in article 20 (2) of the Directive. In either case, where levels or classes of requirements for products are determined, guidance is given in Annex 3 to this mandate. This is not the case for classes of convenience, which are classes of product performances developed as a means of convenience for specifiers, manufacturers and purchasers. Such classes of convenience are not covered by the present mandate and should not be defined within the harmonised standard. Nevertheless, the results of the determination of the product characteristics may be expressed using classes of convenience introduced by European standards. Articles 3.2 and 6.3 of CPD do not apply to such classes.

5. The harmonised standards resulting from this mandate must allow for products to comply with them even where performance does not need to be determined for a certain characteristic because at least one Member State has no legal requirement at all for such characteristic. Declaration of performance for such a characteristic, in this case, must not be imposed on the manufacturer if he does not wish to declare it.

6. Indications regarding the documents which should be taken into account to inform standardisers and manufacturers on national and harmonised legislation on substances classified as dangerous are given in Annex 4.

(1) O.J N°C 62, 28.02.1994

CHAPTER II. EXECUTION OF THE MANDATE

1. CEN/CENELEC will present the Commission with a detailed work programme, at the latest, by the end of **(three months after approval by the 83/189 Committee)**.

2. The work programme should identify clearly the list of harmonised standards to be developed. For each harmonised standard it should:

a) indicate the name(s) of the product(s) to be covered;

b) define the characteristics, durability aspects, intended uses and the forms and materials to be covered (in accordance with Annexes 1, 2 and 3 of this mandate);

c) attach the list of supporting documents (e.g. work items on test methods, ...);

d) justify the timetable foreseen for its finalization; and

e) identify the Technical Committee(s) responsible for the work.

3. Clear differentiation should be made between the item to become the harmonised standard for the product and the items to be used as supporting documents.

4. When a supporting test standard for one characteristic does not exist or is not in the work programme of the TC, a clear statement should be presented indicating whether CEN is able to produce one or not.

5. Any proposals for the addition of products, intended uses and materials and forms not included in the mandate but considered relevant by the TC should be presented separately from the work programme for further analysis by the Commission services. Standards prepared for products outside this mandate will not achieve the status of harmonised standards. In addition to the provisions of article 4.1 of the CPD, it must be taken into account that all the products included in the mandate have a system of attestation of conformity in accordance with the relevant Decision of the Commission; those products not included have not.

6. Any proposal for the addition of characteristics and durability aspects not included in the mandate but considered relevant by the TC should be proposed in a special chapter of the work programme for further analysis by the Commission services.

7. Where a classification system of the product performances is envisaged in Annex 3 of the present mandate, CEN/CENELEC are requested to make an appropriate proposal for its implementation.

8. CEN/TCs must give a technical answer for the determination of the characteristics of the mandate taking into account the conditions stated below; test methods suggested must be directly related to the relevant required characteristic and must not make reference to determination methods for characteristics not required by the mandate. Durability requirements should be dealt with in the framework provided by the state of the art at present.

9. Reference to test/calculation methods methods must be in accordance with the harmonisation aimed at. In general, only one method should be referred to for the determination of each characteristic, for a given product or family of products.

If, however, for a product or family of products because of justifiable reasons, more than one method is to be referred to for the determination of the same characteristic, the situation must be justified. In this case all referenced methods should be linked by the conjunction "or" and an indication of application should be given.

In any other case, two or more test/calculation methods for the determination of one characteristic can be accepted only if a correlation between them exists or can be developed. The relevant harmonised product standard must then select one of them as the method of reference.

Testing and/or calculation methods shall have, whenever possible, a horizontal character covering the widest possible range of products

10. Within the work programme, CEN/CENELEC will also specify those cases where the performance-based approach will not be followed in the harmonised standard and will give the relevant justification.

11. After examination of the work programme and consultations with CEN/CENELEC, the Commission services will endorse the timetable and the list of standards or parts of standards which meet the terms of this mandate and which will be recognised as harmonised or supporting standards.

12. The terms of reference of this mandate may be subject to modification or addition, if necessary. Acceptance of the work programme by the Commission services does not imply acceptance of all the WIs listed as supporting standards. TCs will need to demonstrate the direct link between WIs and the needs for harmonisation of the products, intended uses and characteristics given in the mandate. Nor does acceptance exclude the possibility for further WIs to be added by CEN, in order to fully respond to the terms of the mandate

13. Representatives of the authorities responsible for national regulations have the right and shall be able to participate in the activities of CEN/CENELEC through their national delegations and to present their points of view at all stages of the drafting process of the harmonised standards.

14. The Commission may participate in standardisation activities as observer and has the right to receive all relevant documents.

15. CEN/CENELEC will immediately inform the Commission of any problem relating to the carrying out of the mandate and will present an annual progress report on work within the framework of the mandate.

16. The progress report will include a description of work carried out and information on any difficulties being met, whether political or technical, with particular reference to those that might lead the authorities of a Member State to raise objections or to resort to article 5.1 of the Directive.

17. The progress report will be accompanied by the latest drafts of each standard under the mandate and by updated reports on any subcontracted work.

18. Acceptance of this mandate by CEN/CENELEC will initiate the standstill procedure referred to in article 7 of Council Directive 83/189/EEC of 28 March 1983 modified by Council Directive 88/182/EEC of 22 March 1988 and the European Parliament and the Council Directive 94/10/EC of 23 March 1994.

19. Acceptance of this mandate by CEN/CENELEC can take place only after the work programme has been endorsed by the Commission services.

20. CEN/CENELEC will develop the draft harmonised European standards and of the relevant supporting standards on the basis of the work programme and will inform the Commission in good time that the draft is being circulated for public comment.

21. CEN/CENELEC will present the final drafts of the harmonised European standards and of the relevant supporting standards to the Commission services for confirmation of compliance with this mandate at the latest in accordance with the timetable agreed between CEN/CENELEC and the Commission and referred to in point II.2.d).

22. CEN/CENELEC members will publish the standards transposing the harmonised European standards at the latest 6 months after a positive vote in CEN/CENELEC. National standards covering the same scope will continue to be applicable until the date agreed between CEN/CENELEC and the Commission in accordance with point II.2.d)

CHAPTER III. HARMONISED STANDARDS

1. Harmonised standards shall be prepared to allow those products listed in Annexes 1 and 2 to be able to demonstrate the satisfaction of the essential requirements. One of the purposes of the Directive being to remove barriers to trade, the standards deriving from it will therefore be expressed, as far as practicable in product performance terms (art. 7.2 of the Directive), having regard to the Interpretative Documents.

2. The harmonised standard will contain:

- A detailed scope and field of application
- A detailed description of the product or family of products covered and the relevant intended uses of the different products;
- The definition of the characteristics of the products listed in Annex 2 of the mandate (expressed in performance terms, as far as practicable) that are relevant to the satisfaction of the essential requirements;
- The methods (calculation, test methods or others) or a reference to a standard containing the methods for the determination of such characteristics;
- Guidance on the characteristics that have to be stated within the labelling that will accompany the CE marking (depending on the intended use of the product) and on the way of expressing the determined values of these characteristics;
- The classification system and the levels for the above values of characteristics, if required by the mandate;
- The system for attestation of conformity as required in annex 3 of the mandate and the corresponding specific provisions for the evaluation of conformity.

3. A minimum or a maximum level of a given characteristic that has to be met by the family of products or a product may be identified by the harmonised standard only if required by agreement of Member States expressed by positive vote under the procedure of article 20 .

4. As far as possible, each standard will make reference to performances common to other standards developed under mandate and which constitutes a cohesive and compatible group of harmonised European standards developed in parallel. CEN/CENELEC shall ensure consistency within the whole package.

5. A producer not wishing to meet a non-mandated European standard will be able to use the CE marking on his product by referring only to the relevant harmonised standard. On the other hand, if a non-mandated standard includes the entire content of the harmonised standard, compliance with the former standard will also give a presumption of conformity to the harmonised standard and will enable the bearing of the CE marking.

In the latter case, an appropriate system should be established in the European standard in order to clearly distinguish the CPD-related content from the remaining part of the standard.

6. Harmonised standards must permit construction products which allow works to meet the essential requirements and which are produced and used lawfully in accordance with technical traditions warranted by local climatological and other conditions to continue to be placed on the market.

7. The essential requirements being expressed in terms of performance of the works, the characteristics of the products should be also expressed in terms of performance so that, in referring to the harmonised European standards, the regulations may "approximate" evolving in terms of "performance requirements". As far as practicable and depending on the intended use mentioned in the annexes of this mandate, the standard shall include a definition of the durability in term of performance of the declared values of the product characteristics as well as suitable methods for its evaluation against the actions listed in Annex 2. If the durability is expressed in terms of classes of periods, articles 3.2 and 6.3 of the CPD will not apply.

9. The relevant systems for attestation of conformity, according to Article 13.3 and Annex III of the Directive, are listed in annex 3. For the establishment of the corresponding specific provisions of evaluations of conformity, the harmonised standard will take into account:

- the different intended uses of the product mentioned in the annexes of this mandate and, if any, the different levels or classes of performance;
- cases of individual (non series) production according to Article 13.5 of the Directive;
- the recommendations of paragraph 3 of Annex 3

10. The label accompanying the CE marking will list all the characteristics to be declared according to the declared intended uses mentioned in the annexes of this mandate. In order to take into account existing regulations on products where performance for one or more characteristics may not be required, the label should allow the manufacturer the application of the "No performance determined" case for that or those characteristics.

ANNEX 1
FIELD OF APPLICATION

MASONRY AND RELATED PRODUCTS

LIST OF PRODUCTS INCLUDED IN THE MANDATE

TO BE USED IN:02/33: **FOUNDATIONS AND RETAINING WALLS**
04/33: **EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS**
18/33: **DRAINAGE (INC. HIGHWAYS) AND DISPOSAL OF OTHER LIQUIDS AND GASEOUS WASTE**

FORM	MATERIALS	PRODUCTS FOR CONSIDERATION
Bricks, blocks	natural stone aggregate concrete (dense and lightweight), autoclaved aerated concrete [AAC], manufactured stone, calcium silicate clay	**Masonry - bricks and blocks** **Insulation filled and insulation faced blocks** *(Include special shapes e.g. coping blocks.)-*
Large units	natural stone, manufactured stone, aggregate concrete (dense and lightweight), autoclaved aerated concrete [AAC], clay, calcium silicate	**Lintels** **- Single** **- Composite** **- Combined**
Sections, bars Wire, mesh	metal plastics	**Bed joint reinforcement.** **Wall ties, shear ties and slip ties** **Tension straps, joist hangers, brackets and support angles.**
Sections, bars	metal	**Lintels,**
Formless	mortar	**Factory made masonry mortar.**

11/33: EXTERNAL FINISHES OF WALLS

12/33: INTERNAL FINISHES OF WALLS AND PARTITIONS

14/33: CEILING FINISHES

FORM	MATERIALS	PRODUCTS FOR CONSIDERATION
Formless	mortar	**Factory made rendering/plastering mortar**

ANNEX 2
TECHNICAL TERMS OF REFERENCE

MASONRY AND RELATED PRODUCTS

TO BE USED IN: 02/33: **FOUNDATIONS AND RETAINING WALLS**
04/33: **EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS**
11/33: **EXTERNAL FINISHES OF WALLS**
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Family and subfamilies

1. MASONRY UNITS

Bricks and blocks intended for use in masonry constructions. They are to be jointed with masonry mortar to form loadbearing or non loadbearing elements. Units may be perforated (vertically or horizontally) or solid or contain a depression (frog) in one or both bedding faces. Units may incorporate thermal insulating materials either inserted in the perforations or attached to one of the faces for improving thermal performance. Excluded are paving units, chimney linings and storey height panels
They may be of either one of the two categories according to the level of confidence: Category I, or units placed on the market with a specified mean compressive strength with a probability of failure to reach it not exceeding 5%; Category II, units not intended to comply with such level of confidence

Characteristics of these MASONRY UNITS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTICS	Durability
1	**Compressive strength** *(for units intended to be used in elements subject to structural requirements)* **Dimensional stability** *(for relevant units only)(for units intended to be used in elements subject to structural requirements)* **Bond strength** *(unit/mortar in end use conditions)*/ **[water suction❁** *(for units intended to be used in elements subject to structural requirements)* **Active soluble salts content** *(for relevant units only)(for units intended to be used in elements subject to structural requirements)*	**Y** *(against freeze-thaw, frost, ...as relevant)*
2	**Reaction to fire** *(for units intended to be used in elements subject to fire requirements)* **Resistance to fire R, E and I** *(in end use conditions)* / **[Density and configuration]** *(for units intended to be used in elements subject to fire requirements)*	
3	**Emission of radioactivity** *(only for units made with materials coming from known radioactive sources intended for use in elements subject to radioactivity requirements)* **Water absorption** *(for units intended to be used in damp proof courses and in external elements)* **Water vapour permeability** *(for units intended to be used in external elements)*	
4		
5	**Direct airborne sound insulation** *(in end use conditions)* / **[Density and configuration]** *(for units intended to be used in elements subject to acoustic requirements)*	
6	**Thermal resistance / [Density and configuration]** *(for units intended to be used in elements subject to thermal insulation requirements)*	

Characteristic between [ ] is suggested as possible alternative characteristic to the relevant performance characteristic in cases where performance requirement refers to the masonry element rather than to the masonry units. Any alternative characteristic chosen must allow users to design and build masonry elements providing conformity with the relevant national performance requirement.

Bond strength is a requirement regulated by some member States for the masonry. Such characteristic can not be guaranted separately by the manufacturer of the masonry units unless the other element (the masonry mortar) and its behaviour are known, which is not possible at the time of placing the product on the market. Still the professional that needs to take into account and fullfil such requirement must have the tools to check its compliance and to specify accordingly. CEN must try to find the way (either via a direct test or via a proxy test) to enable the manufactures of masonry units to place their product on the market in those member States by including in the harmonised standard means to allow, either by testing or by calculation, compliance with regulations. (see comment in next pages for masonry mortar).

Family and subfamilies

2. FACTORY MADE MASONRY MORTAR

A mix of water with one or more inorganic (or organic -polymer) binders, aggregates and, sometimes, additives and/or admixtures, factory made and delivered to site as dry mix, premixed lime:sand or ready mix mortars, and intended for jointing material between masonry units. The following types of masonry mortars are considered: general purpose, thin layer and lightweight. They can be designed mortars (to suit stated mechanical characteristics) or prescribed mortar (to suit stated proportions of constituents).

Characteristics of MASONRY MORTAR either FRESH [f] or AFTER SET AND HARDENED [h] to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**Compressive strength** [h] *(for designed masonry mortars)* **Proportion of constituents** *(for prescribed masonry mortars)* **Bond strength** *(in end use conditions)*/ **Water retentivity** [h] *(for designed masonry mortars intended to be used in elements subject to structural requirements)* **Contents of chlorides** [h] *(for mortars intended for reinforced masonry)*	
2	**Reaction to fire** [h] *(for masonry mortars intended to be used in elements subject to fire requirements)* **Fire resistance R, E and I** (*in end use condition)* / **[Density]** [h] *(for masonry mortars intended to be used in elements subject to fire requirements)*	**Y** *(against freeze-thaw, active soluble salts,... as*
3	**Emission of radioactivity** *(only for mortars made with constituents coming from known radioactive sources intended for use in elements subject to radioactivity requirements)* **Water absorption** [h] *(for masonry mortars intended to be used in external elements)* **Water vapour permeability** [h] *(for masonry mortars intended to be used in external elements)*	
4		*relevant)*
5		
6	**Thermal conductivity / [Density]** [h] *(for masonry mortars intended to be used in elements subject to thermal insulation requirements)*	

Characteristic between [ ] is suggested as possible alternative characteristic to the relevant performance characteristic in cases where performance requirement refers to the masonry element rather than to the masonry mortars. Any alternative characteristic chosen must allow users to design and build masonry elements providing conformity with the relevant national performance requirement.

Bond strength is a requirement regulated by some member States for the rendering. Such characteristic can not be guaranted separately by the manufacturer of the masonry mortar unless the other element (the base) and its behaviour are known, which is not possible at the time of placing the product on the market. Still the professional that needs to take into account and fullfil such requirement must have the tools to check its compliance and to specify accordingly. CEN must try to find the way (either via a direct test or via a proxi test) to enable the manufactures of masonry mortars to place their product on the market in those member States by including in the harmonised standard means to allow, either by testing or by calculation, compliance with regulations.

Family and subfamilies

3. FACTORY MADE RENDERING/PLASTERING MORTAR

A mix of water with one or more inorganic (or organic - polymer) binders, aggregates and, sometimes, additives and/or admixtures, factory made and delivered to site as dry mix or ready mix mortars, and intended for covering externally (rendering) and internally (plastering) masonry walls or ceiling surfaces in form of one or several coats. The following types are considered: general purpose, lightweight, coloured, one coat, renovation, thermal insulating and fire resistant mortars.

Characteristics of **RENDERING/PLASTERING MORTAR** either FRESH [f] or AFTER SET AND HARDENED [h] to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1		
2	**Reaction to fire** [h] *(for rendering/plastering mortars intended to be used in elements subject to fire requirements)* **Fire resistance R, E and I** (*in end use condition)* / **[Density]** [h] *(for rendering/plastering intended to be used in elements subject to fire requirements)*	**Y** *(against*
3	**Emission of radioactivity** *(only for mortars made with constituents coming from known radioactive sources intended for use in elements subject to radioactivity requirements)* **Water absorption** [h] *(for rendering/plastering mortars intended to be used in external elements)* **Water vapour permeability** [h] *(for rendering/plastering mortars intended to be used in external elements)*	*freeze-thaw, ... as*
4	**Adhesion** *(in end use conditions)*	*relevant)*
5		
6	**Thermal conductivity / [Density]** [h] *(for rendering/plastering mortars intended to be used in elements subject to thermal requirements)*	

Characteristic between [ ] is suggested as possible alternative characteristic to the relevant performance characteristic in cases where performance requirement refers to the masonry element rather than to the plastering/rendering mortars. Any alternative characteristic chosen must allow users to design and build masonry elements providing conformity with the relevant national performance requirement.

Ahesion is a requirement regulated by some member States for the rendering. Such characteristic can not be guaranted separately by the manufacturer of the rendering/plastering mortar unless the other element (the base) and its behaviour are known, which is not possible at the time of placing the product on the market. Still the professional that needs to take into account and fullfil such requirement must have the tools to check its compliance and to specify accordingly. CEN must try to find the way (either via a direct test or via a proxi test) to enable the manufactures of rendering/plastering mortars to place their product on the market in those member States by including in the harmonised standard means to allow, either by testing or by calculation, compliance with regulations.

Family and subfamilies

ANCILLARY COMPONENTS (I)

Ancillary components included in this mandate are: ties (wall, shear or slip), tension straps, hangers, brackets and support angles.

4. WALL TIES: Device for connecting two masonry leaves in a cavity wall or one leaf to a frame structure. They are designed to resist both tension and compression forces while allowing limited differential lateral movement. They shall provide water break when used in external walls. They may be symmetrical, asymmetrical, horizontal or slope tolerant.

5. SHEAR TIES: A device for connecting two adjacent masonry leaves together, for connecting masonry walls which need to interact to produce composite action and for connecting masonry walls to frame structures. It is designed to resist shear, tension and compression forces.

6. SLIP TIES: A device for connecting two adjacent walls or for connecting masonry cladding to frame structures which allows in-plane movement. It resists shear but not tension and compression forces.

Characteristics of TIES to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**Compressive strength** *(for wall and shear ties)* **Tensile strength** *(for wall and shear ties)* **Buckling or bending stiffness** *(for wall and shear ties)* **Shear strength or stiffness** *(for shear and slip ties)*	**Y** *(against corrosion, cyclic actions,... where relevant,)*
2	*In end use conditions, incorporated in walls in fire compartmentation situations:* **Resistance to fire R**	
3	**Water shedding capability**	
4		
5		
6		

Family and subfamilies

ANCILLARY COMPONENTS (II)

7. TENSION STRAPS: Devices for connecting masonry walls to adjacent components such as floors and roofs. They are designed to resist tension forces.

Characteristics of TENSION STRAPS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**Tensile strength**	**Y** *(against corrosion, ... where) relevant*
2	*In end use conditions, incorporated in elements in fire compartmentation situations:* **Resistance to fire R**	
3		
4		
5		
6		

Family and subfamilies

ANCILLARY COMPONENTS (& III)

8. JOIST HANGERS: Devices for supporting joists, beams or rafters on a masonry wall

9. BRACKETS: Devices attached to a structural member for support of two adjacent masonry units

10. SUPPORT ANGLE: A length of metal angle for supporting masonry walls on other structural elements

Characteristics of JOIST HANGERS, BRACKETS AND SUPPORT ANGLES to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**Loadbearing capacity** **Deflection under load**	**Y** *(against corrosion, ... where relevant)*
2	*In end use conditions, incorporated in elements in fire compartmentation situations:* **Resistance to fire R**	
3		
4		
5		
6		

Family and subfamilies

11. LINTELS

Prefabricated elements for small spans arranged to support loads over openings in masonry walls with a semi-structural role in the works. They can be single, combined and composite

(Overlapping with precast concrete and steel horizontal elements included in other mandates has to be dealt with properly).

Characteristics of LINTELS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**Loadbearing capacity** **Deflection under load**	**Y** *(against corrosion or freeze-thaw, ... where relevant)*
2	*In end use conditions, in fire compartmentation walls:* **Resistance to fire R, E and I**	
3	**Emission of radioactivity** *(only for lintels made with materials coming from known radioactive sources intended for use in elements subject to radioactivity requirements)* **Water absorption** *(for lintels intended to be used in external elements)* **Water vapour permeability** *(for lintels intended to be used in external elements)*	
4		
5	**Direct airborne sound insulation** *(in end use condition)* / **[Mass per unit area]** *(for lintels intended to be used in elements subject to acoustic requirements)*	
6	**Thermal resistance** *(for lintels intended to be used in elements subject to thermal requirement)*	

Family and subfamilies

12. BED JOINT REINFORCEMENT

Factory made welded wire meshwork intended for structural use as reinforcement in mortar bed joints.

Characteristics of BED JOINT REINFORCEMENTS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1	**Tensile strength** *(of the reinforcement)* **Bond strength** *(mortar/reinforcement)*	**Y** *(against corrosion, ..., where relevant)*
2		
3		
4		
5		
6		

COMPREHENSIVE TABLE OF CHARACTERISTICS

MASONRY AND RELATED PRODUCTS

E R	Performance characteristics	1	2	3	4-6	7	8-10	11	12	Durability
1	**- Compressive strength**	**Y**	**Y**	--	**Y** (1)	--	--	--	--	
	- Proportion of constituents	--	**Y**	--	--	--	--	--	--	
	- Dimensional stability *of units*	**Y**	--	--	--	--	--	--	--	
	- Bond strength *(units/mortar)*/ **[Water suction] (***of units)*	**Y**	--	--	--	--	--	--	--	
	- Bond strength *(mortar/units)* **/ [Water retentivity]** *(of fresh mortar)*	--	**Y**	--	--	--	--	--	--	
	- Tensile strength	--	--	--	**Y** (1)	**Y**	--	--	**Y**	
	- Loadbearing capacity	--	--	--	--	--	**Y**	**Y**	--	
	- Deflection under load	--	--	--	--	--	**Y**	**Y**	--	
	- Shear strength or stiffness	--	--	--	**Y** (2)	--	--	--	--	
	- Bond strength *(mortar/reinforcement)*	--	--	--	--	--	--	--	**Y**	
	- Buckling or bending stiffness	--	--	--	**Y** (1)	--	--	--	--	
	- Active soluble salts	**Y**	--	--	--	--	--	--	--	
	- Contents of chlorides	--	**Y**	--	--	--	--	--	--	
2	*For fire exposed applications subject to reaction to fire requirements:*									**Y** *(against*
	- Reaction to fire	**Y**	--	**Y**	--	--	--	--	--	*relevant actions*
	For fire compartmentation applications:									*as indicated in*
	- Fire resistance *(In end use conditions)* **/[Density and configuration]**									*other tables)*
	loadbearing R	**Y**	**Y**	--	**Y**	**Y**	**Y**	**Y**	--	
	integrity E	**Y**	**Y**	--	--	--	--	**Y**	--	
	insulation I	**Y**	**Y**	**Y**	--	--	--	**Y**	--	
3	**- Water absorption**	**Y**	**Y**	**Y**	--	--	--	**Y**	--	
	- Water shedding capability	--	--	--	**Y**	--	--	--	--	
	- Water vapour permeability	**Y**	**Y**	**Y**	--	--	--	**Y**	--	
4	**- Adhesion** *(in end use conditions)*	--	--	**Y**	--	--	--	--	--	
5	**- Direct airborne sound insulation** *(in end use conditions/* **[Density and configuration]**	**Y**	--	--	--	--	--	**Y** (3)	--	
6	**- Thermal conductivity/ [Density and configuration]**	--	**Y**	**Y**	--	--	--	--	--	
	- Thermal resistance *(in end use conditions)*	**Y**	--	--	--	--	--	**Y**	--	

Notes: (1) For wall and shear ties only (2) For shear and slip ties only (3) Expressed in terms of density or mass per unit area, as relevant.

Characteristics between [ ], in cases where performance is more properly addressed to a masonry element than to the masonry product, are considered as alternatives to the performance characteristics and can be used to comply with the harmonised standard where national regulations are expressed in these terms.

ANNEX 3
ATTESTATION OF CONFORMITY

Product family : **Masonry and related products (1/3)**

1. Systems of attestation of conformity

For the product(s) and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Masonry units. Cat. I [1]	in walls, columns and partitions	---	**2+**
Factory-made, designed [2] **masonry mortars**			
Masonry units. Cat. II[3]	in walls, columns and partitions	---	**4**
Factory-made, prescribed[4] **masonry mortars**			
Factory-made rendering/plastering mortars	in wall, column, partition and ceiling finishes		
System 2+ : See DPC Annex III.2.(ii), First possibility, including certification of the factory production control by an approved body System 4: See CPD Annex III.2.(ii), Third possibility			

2. Conditions to be applied by CEN on the specifications of the attestation of conformity system

2.1 The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.

[1] Units with a specified mean compressive strength with a probability of failure to reach it not exceeding 5%

[2] Mortars designed and manufactured to achieve specific performance requirements.

[3] Units not intended to comply with the level of confidence of Category I units.

[4] Mortars manufactured from specific proportion of constituents which may be assumed to achieve associated performance requirements.

2.2 For products under system 2+, for the continuous surveillance, assessment and approval of the factory production control [see Annex III.1.g) of the CPD], only parameters related to the following characteristics shall be of the interest of the approved body:

For masonry units:

Compressive strength

Dimensional stability

Bond strength / [Water suction❁

Active soluble salts content

For designed masonry mortars:

Compressive strength

Bond strength / [Water retentivity❁

Contents of chlorides

2.3 For products under system 2+, for the initial inspection of the factory and of the factory production control [see Annex III.1.f) of the CPD], also parameters related to the rest of the relevant characteristics shall be of the interest of the approved body.

Product family : **Masonry and related products** (**2/3**)

1. Systems of attestation of conformity

For the product(s)and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Ties, tension straps, joist hangers, brackets, support angles, bed joint reinforcement and lintels	in walls and partitions	----	**3**
System 3: See CPD Annex III.2.(ii), Second possibility			

2. Conditions to be applied by CEN on the specifications of the attestation of conformity system

2.1 The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.

2.2 For products under system 3, regarding the initial type testing of the product (to be required by the manufacturer) [see Annex III.1.a) of the CPD], the task for the approved laboratory will be limited to the assessment [5] of the following characteristics:

for ties:
- **compressive strength** *(for wall and shear ties)*
- **tensile strength** *(for wall and shear ties)*
- **buckling or bending stiffness** *(for wall and shear ties)*
- **shear strength or stiffness** *(for shear and slip ties)*

for tension straps:
- **tensile strength**
- **resistance to fire R** *(when relevant)*

for joist hangers, brackets, support angles:
- **loadbearing capacity**
- **deflection under load**
- **resistance to fire R** *(when relevant)*

[5] Assessment may be made either by test or, if possible, by calculation.

for lintels:
- loadbearing capacity
- deflection under load
- resistance to fire R *(when relevant)*

for bed joint reinforcement:
- tensile strength *(of the reinforcement)*
- bond strength *(mortar/reinforcement)*

Product family : **Masonry and related products** (**3/3**)

1. Levels and classes for product performances

1.1 According to article 3.2 of the CPD and Clause 1.2.1 of the IDs, a classification of product performance has been identified as the means of expressing the range of requirement levels of the works in respect of **Reaction to fire.** CEN/CENELEC are requested to follow the Commission Decision 94/611/EC [O.J. L 241 of September 1994] and make reference to the standard(s) to be prepared under Commission mandate "Horizontal complement to the 33 mandates in respect of reaction to fire" in dealing with reaction to fire in the specific harmonised product standards to be developed under this mandate.

1.2 Reaction to fire is one risk for which the need for a classification system for products has been identified for the time being.

Further needs may be identified on the basis of differences specified in Article 3 (2) of the CPD, which are justified in conformity with Community law (IDs Clause 1.2.1). Where for such needs it is recognised that a classification of product performance is the means of expressing the range of requirement levels of the works, the Commission will give the appropriate guidance or will request CEN/CENELEC to make the appropriate proposal through a modification to this mandate.

2. Systems of attestation of conformity

For the product(s) and intended use(s) listed below, CEN/CENELEC are requested to specify the following system(s) of attestation of conformity in the relevant harmonised standard(s) :

Product(s)	Intended use(s)	Level(s) or class(es) *(Reaction to fire)* [6]	Attestation of conformity system(s)
Masonry units incorporating thermal insulating materials placed on a face susceptible to be exposed to fire	in walls and partitions subject to reaction to fire regulations	A, B or C (*) --- A, B, C (**) --- D, E or F	**1** --- **3** --- **4**
System 1: See CPD Annex III.2.(i), without audit-testing of samples. System 3: See CPD Annex III.2.(ii), Second possibility. System 4: See CPD Annex III.2.(ii), Third possibility			

[6] For reaction to fire, see Commission Decision 94/611/EC

(*) Materials for which the reaction to fire performance either is susceptible to change during the production process (In general, those made with combustible raw materials) or is altered by means of incorporation of certain agents, like fire retardants.

(**) Materials for which the reaction to fire performance is not susceptible to change during the production process (In general, those made with non-combustible raw materials).

3. Conditions to be applied by CEN on the specifications of the attestation of conformity system

3.1 The specification for the system should be such that it can be implemented even where performance does not need to be determined for a certain characteristic, because at least one Member State has no legal requirement at all for such characteristic [*see Article 2.1 of the CPD and, where applicable, clause 1.2.3 of the Interpretative Documents*]. In those cases the verification of such a characteristic must not be imposed on the manufacturer if he does not wish to declare the performance of the product in that respect.

3.2 For products under systems 1 and 3, regarding the initial type testing of the product (to be required by the manufacturer in case of system 3) [see Annex III.1.a) of the CPD], the task for the approved laboratory will be limited to the assessment of the following characteristics:

- **Euroclass characteristics for reaction to fire** *of the materials used)* as indicated in the Commission Decision 94/611/EC

3.3 For products under system 1, for the continuous surveillance, assessment and approval of the factory production control [see Annex III.1.g) of the CPD],only parameters related to the following characteristics shall be of the interest of the approved body:

- **Euroclass characteristics for reaction to fire** *(of the materials used)* as indicated in the Commission Decision 94/611/EC

3.4 For products under system 1, for the initial inspection of the factory and of the factory production control [see Annex III.1.f) of the CPD], also parameters related to the rest of the relevant characteristics shall be of the interest of the approved body.

ANNEX 4
DANGEROUS SUBSTANCES

MASONRY AND RELATED PRODUCTS

European technical specifications must be adopted taking into account necessary legislation on substances classified as dangerous.

This results from the Interpretative Documents, where it is noted, in the introduction note to all six of them, that:

"Concerning dangerous substances which are in construction products, classes and/or levels of performance to which technical specifications will refer, shall allow the levels of protection needed by the works to be guaranteed, taking into account the purpose of the works."

In addition, outside the scope of the Directive, writers of technical specifications must take into account legislation which affects materials to be used for construction products and which are regulated for reasons not related to the incorporation of the construction products into the works.

In order to permit technical specifications writers to take into account the necessary legislation, a working document was elaborated by the Commission services (doc. CONSTRUCT 95/148 Rev. 1 of January 4, 1996). Specification writers should use this document as a guide but must also take account of any other relevant or dangerous substances which the working document does not yet include.

EUROPEAN COMMISSION
ENTERPRISE DIRECTORATE-GENERAL

Conformity and standardisation, new approach, industries under new approach
Construction

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Brussels, 3 May 2004
G5/PB D(2003)

AMENDMENT TO :

MANDATE TO CEN/CENELEC
CONCERNING THE EXECUTION OF STANDARDISATION WORK
FOR HARMONISED STANDARDS ON

M 116 "Masonry and related products"

The need to amend this mandate:

Mandate M116 "Masonry and related products" defines, in its Annex 2, the characteristics to be covered by the harmonised standards for various sub-families.

For the sub-family "Masonry Units" the current table 1 in Annex 2 does not includes "dimensions", "dimensional tolerances" and "configuration". Consequently these characteristics do not have to be declared in the information accompanying the CE marking.

Nevertheless, these elements are necessary to allow the designers to calculate the mechanical resistance and stability of assembled units, in particular in application to the Eurocodes (to enable the use of prEN 1996-1-1 table 3.1)

It has been required, in the Guidance paper L, that "all the material properties needed for the structural design of works which are linked to the essential requirements, relevant for the calculation have to be declared in the information accompanying the CE marking (clause 3.2.4).

These calculations are regulated in some Member States.

Therefore, we must add these characteristics to the mandate and, consequently, the corresponding harmonised standards on products (EN 771 part 1 to 5) have to be amended to introduce these characteristics in their annex ZA2.

This amendment modifies the original mandate in the following manner:

In Annex 2 - table 1 concerning "Masonry Units", the characteristics "dimensions", "dimensional tolerances" and "configuration" will be added. Consequently the standards EN 771-1 to 5 will be amended. The amendment will be limited to add the necessary information in the documents accompanying the CE marking to enable the calculations, according to prEN 1996-1-1 table 3.1, to be performed.

This amendment does not need to change the decision concerning Attestation of Conformity Level.

AMENDMENT to the mandate M116 "Masonry and related products"

Amendment to the Annex 2

The table 1 concerning "masonry units" will be amended as the follow:

Characteristics of these MASONRY UNITS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTICS	Durability
1	**Dimensions** **Dimensional tolerances** *(including flatness and parallelism of bed faces – for units intended to be used with thin layer mortar)* **Compressive strength** *(for units intended to be used in elements subject to structural requirements)* **Dimensional stability** *(for units intended to be used in elements subject to structural requirements)* **Configuration (*)** *(for units intended to be used in elements subject to structural requirements or for units intended to be used in elements subject to fire requirements)* **. Bond strength** *(unit/mortar in end use conditions)***, flexural bond strength, [water suction]** *(for units intended to be used in elements subject to structural requirements)* **. Active soluble salts content** *(for relevant units only)(for units intended to be used in elements subject to structural requirements)*	**Y** *(against freeze-thaw, frost, ...as relevant)*
2	**Reaction to fire** *(for units intended to be used in elements subject to fire requirements)* **Resistance to fire R, E and I** *(in end use conditions)* **/ [Density]** *(for units intended to be used in elements subject to fire requirements)*	
3	**Emission of radioactivity** *(only for units made with materials coming from known radioactive sources intended for use in elements subject to radioactivity requirements)* **Water absorption** *(for units intended to be used in damp proof courses and in external elements)* **Water vapour permeability** *(for units intended to be used in external elements)*	
4		
5	**Direct airborne sound insulation** *(in end use conditions)* **/ [Density]** *(for units intended to be used in elements subject to acoustic requirements)*	
6	**Thermal resistance / [Density]** *(for units intended to be used in elements subject to thermal insulation requirements)*	

(*) the configuration (including relevant geometrical properties, e.g. volume of holes, minimum thickness of shells and webs, etc) will enable the use of prEN 1996-1-1 table 3.1

Characteristic between [ ] is suggested as possible alternative characteristic to the relevant performance characteristic in cases where performance requirement refers to the masonry element rather than to the masonry units. Any alternative characteristic chosen must allow users to design and build masonry elements providing conformity with the relevant national performance requirement.

The comprehensive table of characteristics will be amended as follow:

MASONRY AND RELATED PRODUCTS

E R	Performance characteristics	1	2	3	4-6	7	8-10	11	12	Durability
1	- **Dimensions**	Y	-	-	-	-	-	-	-	**Y** *(against relevant actions as indicated in other tables)*
	- Dimensional tolerances	Y	-	-	-	-	-	-	-	
	- **Configuration**	Y	-	-	-	-	-	-	-	
	- Compressive strength	Y	Y	--	Y(1)	--	--	--	--	
	- Proportion of constituents	--	Y	--	--	--	--	--	--	
	- Dimensional stability *of units*	Y	--	--	--	--	--	--	--	
	- Bond strength *(units/mortar)*/ **[Water suction] (***of units)*	Y	--	--	--	--	--	--	--	
	- Bond strength *(mortar/units)* / **[Water retentivity]** *(of fresh mortar)*	--	Y	--	--	--	--	--	--	
	- Tensile strength	--	--	--	Y (1)	Y	--	--	Y	
	- Loadbearing capacity	--	--	--	--	--	Y	Y	--	
	- Deflection under load	--	--	--	--	--	Y	Y	--	
	- Shear strength or stiffness	--	--	--	Y (2)	--	--	--	--	
	- Bond strength *(mortar/reinforcement)*	--	--	--	--	--	--	--	Y	
	- Buckling or bending stiffness	--	--	--	Y (1)	--	--	--	--	
	- Active soluble salts	Y	--	--	--	--	--	--	--	
	- Contents of chlorides	--	Y	--	--	--	--	--	--	
2	*Not changed*									
3	**Not changed**									
4	**Not changed**									
5	**Not changed**									
6	**Not changed**									

Notes: (1) For wall and shear ties only (2) For shear and slip ties only (3) Expressed in terms of density or mass per unit area, as relevant.

Characteristics between [ ], in cases where performance is more properly addressed to a masonry element than to the masonry product, are considered as alternatives to the performance characteristics and can be used to comply with the harmonised standard where national regulations are expressed in these terms.
