Secretariat CEN/TC 33
"Portes, fenêtres, fermetures, quincaillerie de bâtiment et façades rideaux"
"Doors, windows, shutters, building hardware and curtain walling"
"Türen, Tore, Fenster, Absclüsse, Baubeschläge und Vorhangfassaden"

CEN/TC 33 N 1301

03/03/04

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CURTAIN WALLING

1) Mandate M/108

TO CEN/CENELEC

CONCERNING THE EXECUTION OF STANDARDISATION WORK

FOR HARMONIZED STANDARDS ON

2) Answer to the Mandate M/108 by CEN/TC 33

3) EC acceptance of CEN/TC 33 answer to the Mandate M/108

Association reconnue
d'utilité publique
Comité membre français
du CEN et de l'ISO
Siret 775 724 818 00015
Code NAF 751 E

Mandate M/108: CURTAIN WALLING.

Technical Committees involved

CEN/TC 33	Doors, windows, shutters and building hardware.
CEN/TC 89	Thermal performance of buildings and building components
CEN/TC 128	Roof covering products for discontinuous laying and products for wall cladding
CEN/TC 129	Glass in building
CEN/TC 229	Precast concrete products
CEN/TC 284	Greenhouses

Mandate M/108

TO CEN/CENELEC

CONCERNING THE EXECUTION OF STANDARDISATION WORK

FOR HARMONIZED STANDARDS ON

CURTAIN WALLING

Mandate M/108

TO CEN/CENELEC

CONCERNING THE EXECUTION OF STANDARDISATION WORK

FOR HARMONIZED STANDARDS ON

CURTAIN WALLING

RELATED TO THE FOLLOWING END USES
04/33 EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS

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

FOREWORD

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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.

CHAPTER I

GROUNDS

Top

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 **EXTERNAL WALLS,** 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.

CHAPTER II.

EXECUTION OF THE MANDATE

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1. CEN/CENELEC will present the Commission with a detailed work programme, at the latest, by the end of October 1996.
2. The work programme should identify clearly the list of harmonised standards to be developeddevelop. 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

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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 (e.g. for masonry units, a compressive strength not less than 2 N/mm2) 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.
8. 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

9. 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

CURTAIN WALLING

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LIST OF PRODUCTS TO BE INCLUDED IN THE MANDATE TO BE USED IN
04/33 EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS

FORM	MATERIALS	PRODUCTS FOR CONSIDERATION
Large units	stone precast concrete glass reinf.. concrete glass reinf. plaster metal timber plastic glass insulating materials	**Curtain wall kits** in which the following components(2) may be used: Cladding or infill panels of: • precast concrete (inc. grc), • profiled metal, • timber composites, • plastics (inc. grp), • glass • composite Patent glazing Insulated sandwich panels
Components	metal glass plastics	Doors and windows, in infill panels
	metal plastics	Mechanical fasteners (brakets)
Sections, bars	metal timber plastics	Framing for walling systems Sills and copings.
Quilts Rigid sheets	organic fibres glass (foamed) inorganic fibres and particles plastics (foamed) metal foil insulating materials	Thermal (and sound) insulation quilts and boards Laminated plastics insulation
Flexible sheets	plastics bitumen	Vapour barriers and checks Flashings and copings, Gaskets and sealants

ANNEX 2

TECHNICAL TERMS OF REFERENCE

CURTAIN WALLING

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TO BE USED IN:

04/33 EXTERNAL WALLS (INCLUDING CLADDING), INTERNAL WALLS AND PARTITIONS

Family and subfamilies
CURTAIN WALL KITS **The complete set of components to form the external building enclosure (between 90· and 75· from horizontal) including: [Grid, made up of framing components (mullions, transoms, jambs, heads and cills), and connectors (spiggots and sleeves); Fixings components, as brackets; and Panels, both as fixed (infil material, beads and gaskets) or as movable (windows, doors, gates...)]** **Usually, it consists of vertical and horizontal framing members connected together and anchored to the supporting structure of the building and infilled to form a light-weight, space enclosing, continuous skin which provide by itself, or in conjunction with the buiding construction, all normal functions of an external wall. It does not contribute to the loadbearing characteristics of the building's structure and may take any of the possible forms:** **1. Stick construction: a light carrier framework of site assembled components supporting prefabricated opaque and/or translucent infill panels.** **2. Unitised construction: Pre-assembled interlinking storey or multi-storey height modules, complete with infill panels.** **3. Spandrel construction: pre-assembled spandrel modules with ribbon glazing units.**

Characteristics of CURTAIN WALL KITS to be covered by the harmonised standard:

ER	PERFORMANCE CHARACTERISTIC	DURABILITY
1	.	.
2	**Reaction to fire** *(of components, when relevant)* **Fire resistance** **Fire propagation** (*to upper levels)*	.
3	**Water tightness**	**Y**
4	**Resistance to its own dead load** **Windload resistance** **Impact resistance/safe breakage** **Resistance to live horizontal loads at sill level** **Thermal shock resitance** **Sill height** *(for panels that include windows)*	against: freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,..., as relevant
5	**Direct and flanking airborne sound insulation**	.
6	**Thermal resistance** **Air permeability** **Water vapour permeability**	.

COMPREHENSIVE TABLE OF CHARACTERISTICS

CURTAIN WALLING

ER	Performance characteristic	Curtain wall kits	Durability
1	.	.	.
2	• **Reaction to fire** *(of components, when relevant)* • **Fire resistance** **- Fire propagation** (*to upper levels)*	**Y** **Y**	.
3	- **Water tightness**	**Y**	**Y**
4	**- Resistance to its own dead load** - **Wind load resistance** **- Impact resistance/safe breakage** **- Resistance to live horizontal loads at sill level** **- Thermal shock resistance** **- Sill height** *(for panels including windows)*	**Y** **Y** **Y** **Y** **Y** **Y**	against: freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,..., as relevant
5	**- Direct and flanking airborne sound insulation**	**Y**	.
6	**- Thermal resistance** **- Air permeability** **- Water vapour permeability**	**Y** **Y** **Y**	.

ANNEX 3

ATTESTATION OF CONFORMITY
Product family

CURTAIN WALLING (1/1)

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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)* (3)	Attestation of conformity system(s)
Curtain wall kits	as external walls subject to reaction to fire requirements ---------- as external walls not subject to reaction to fire requirements	A, B or C **(4)**---------- A, B, C (5)D, E or F ---------- **ANY**	**1** ---------- **3** ---------- **3**
System 1: See CPD Annex III.2.(i), without audit-testing of samples System 3: See CPD Annex III.2.(ii), Second possibility			

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 assesment of the following characteristics:

- **- Euroclass characteristics for reaction to fire** as indicated in the Commission Decision 94/611/EC *(when relevant)*
- **- fire resistance**
- **- fire propagation** *(to upper levels) (when relevant)*
- **- resistance to its own dead load**
- **- windload resistance**
- **- impact resistance/safe breakage**
- **- resistance to live horizontal loads at sill level**
- **- thermal shock resistance**

3.3 For products under system 1, for the continuous surveillance, assesment 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** as indicated in the Commission Decision 94/611/EC *(when relevant)*

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

CURTAIN WALLING

Top

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.

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(1) O.J N·C 62, 28.02.1994

(2) This mandate does not cover these components as separate products. It covers only the system as a definite set of components placed on the market as a "kit"

(3) For reaction to fire, see Commission Decision 94/611/EC

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

(5) 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).

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Answer to the Mandate M/108 by CEN/TC 33

CURTAIN WALLING

June 1997

PROGRAMME OF WORK OF CEN/TC33/WG6
IN LINE WITH THE MANDATE CONSTRUCT 95/145 D Rev 1.
CURTAINWALLING

Prepared by CEN/TC33/WG6:

0. GENERAL COMMENTS

0.1. Glazing systems known in the UK as 'Patent Glazing' listed under PRODUCTS FOR CONSIDERATION is mainly associated with glazed sloping roofs of industrial buildings, the technicalities of performance and characteristics of which differ considerably to those for curtainwalling.
Patent Glazing is also mainly associated with sloping roofs considerably below 75° from horizontal, whereas the Curtainwalling scope is specifically relative to external building enclosures between 90° (vertical) and 75°.

0.2. Work items under this mandate are also being worked on by other technical committees - namely CEN/TC89 - 'Thermal performance of buildings and building components', CEN/TC126 - 'Acoustic properties of building products and of buildings', CEN/TC127 - 'Fire safety in buildings', CEN/TC129 - 'Glass in building' (all in liaison with CEN/TC33).

0.3. With regard to 'Reaction to fire of components', further work is envisaged for TC 127 in the production of standards relating to 'Single Burning Items' and 'vertical surface spread of flame', final decisions on which are awaited from DG3.

A. CURTAINWALLING

A1. All Curtainwalling.

A.1.1. Harmonised product standard : **Availability:**

WI 00033238 (under preparation by TC33) 1999 - 06

1. **Title: Curtainwalling - Product Standard**

2. **Scope:** This is a performance standard that applies to proprietary, standard curtainwalling systems and to purpose designed, project specific curtainwalling systems, produced in component kits or prefabricated kits, providing an external building enclosure produced with framing made mainly of metal, timber or UPVC and incorporated, in a vertical position and down to 15 degrees from the vertical, onto the building face. It may be fully or partially glazed or panelled and be fitted with or without openable windows.
This standard does not include: Patent Glazing constructions.
Roof Glazing constructions.
Precast Concrete Constructions

3. **Intended Uses:** All the normal functions of an external wall, including weather resistance, safety in use, security and environmental control, but no contribution to the load bearing characteristics of the building structure.

4. **The essential characteristics according to the mandate which will be dealt with in the above standard will be:**

4.1 Reaction to fire of components.
4.2 Fire propagation (to upper levels).
4.3 Fire resistance.
4.4 Watertightness.
4.5 Resistance to its own deadload.
4.6 Windload resistance.
4.7 Impact resistance / safe breakage.
4.8 Resistance to live horizontal loads at sill level.
4.9 Thermal shock resistance.
4.10 Sill height (for curtainwalls that include windows).
4.11 Direct and flanking airborne sound insulation. (only where acoustic performance is12 required).
4.12 Thermal resistance.
4.13 Air permeability.
4.14 Water vapour permeability.

5. **Durability Aspects:**

5.1 Durability of watertightness against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.2 Durability of windload, live horizontal load and deadload resistance against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.3 Durability of impact resistance against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.4 Durability of thermal shock resistance against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.5 Durability of acoustic resistance against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.6 Durability of thermal resistance against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.7 Durability of air permeability against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.
5.8 Durability of water vapour permeability against freeze-thaw, weathering, ageing, UV action, corrosion, creep, thermal movements,.....as relevant.

Other aspects:

The harmonised product standard will also contain:
- references to other Directives and compliance conditions applying to the product.
- a reference to the Commission's decision on attestation of conformity.
- clauses on evaluation of conformity.
- guidance on the characteristics to be stated in the labelling accompanying the CE marking and on the way of expressing the determined values of these characteristics.
- the classification system for the characteristic:
- reaction to fire.

A.1.2. Supporting standards

The following work items, prENs or EN's are proposed as test or calculation methods for the determination of the essential characteristics required by the mandate and indicated in clause A1.1.4 and A1.1.5 above. See note 3 of A.1.3 with regard to durability of performance.

1. Reaction to fire of components.

WI 0014065 1999-04

2. Fire resistance. (only for use where Fire resistance performance is required).

prEN 1364-4 (under preparation by TC 127, WI 058) 1998-03
Fire Resistance Tests on Non-Loadbearing Elements - Part 3 :Curtain walling

3. Watertightness

prEN 12155 (under preparation by TC33) 1997-09
Curtainwalling - Test Method to determine Watertightness under Static Pressure.

WI 00033207 (under preparation by TC33, as additional test and optional) 1997-12
Curtainwalling - Test Method to determine Watertightness under wind generated pressure.

Note: the relevance of this option to a particular installation is evaluated within the Product Standard, based on detail, design technique, scale and exposure.

4. Resistance to its Own Deadload

WI 00033238 (under preparation by TC33) 1999-06
Curtainwalling - Method of assessment by calculation, based on defined limits of component stress and deflection, to be stated within the Product Standard in clause no. 4.2.

5. Windload Resistance

prEN 12179-4 (under preparation by TC33) 1997 09
Curtainwalling - Structural wind resistance - Laboratory test.

6. Impact Resistance / Safe breakage.

WI 00129021 (under preparation by TC129) 1997-06
Glass in building - Pendulum Test - Impact and Performance Requirements - adapted only by reference to specific impact locations on the curtainwalling framing.

7 & 9. Resistance to Live Horizontal Loads at Sill height level

WI 00033238 (under preparation by TC33) 1999-06
Curtainwalling - Method of assessment by calculation, based on defined limits of component stress and deflection, to be stated within the Product Standard in clause no. 4.1.

8. Thermal Shock Resistance

WI 00033238 (under preparation by TC33) 1999-06
Curtainwalling - Method of assessment based on defined extremes of temperature change, induced by exposure, geographic location, finish, etc., to be stated within the Product Standard in Annex BA.

10. Direct and flanking airborne sound insulation (only for use where Acoustic performance is required)

EN 20140.- 3 Available
Acoustics - Measurement of sound insulation in buildings and of building elements - Part 3 : Laboratory measurements of airborne sound insulation of building elements. (ISO 140 - 3 : 1995)

prEN 20717 - 1 1997-12
Acoustics - Rating of sound insulation of buildings - Part 1 : Airborne sound insulation in buildings and of interior building elements (ISO / DIS 717 - 1 : 1993)

11. Thermal Resistance

prEN 30077 (under preparation by TC89) 1997-12
Curtainwalling - Thermal Transmittance - Calculation Method (ISO/DIS 10077:1993).

WI 00089026 (under preparation by TC89, as additional test and optional) 1997-12
Curtainwalling - Thermal Transmittance - Calibrated and guarded hot box method

Note: the relevance of this option to a particular installation is evaluated within the Product Standard, based on detail, design technique, scale and exposure.

12. Air Permeability

prEN 12153 (under preparation by TC33) 1997-09
Curtainwalling - Test Method to determine Air Permeability

13. Water Vapour Permeability

WI TC89 013 (under preparation by TC 89) not known

Building materials - Determination of moisture permeability - Principles of testing - Part1 : Water vapour permeability.

A.1.3. Additional information, comments and remarks

A.1.3.1 Durability of performance of any of the characteristics listed under para A.1.1.5 above, is not tested on the curtain wall, but is related to the results of the compliance of the constituting materials and finishes to the state of the art or, where available , to ENs specifying the material or the finish. The performance criterior which can be demonstrated under test, in compliance with the performance and classification stated within the product specification, is to remain durable to the extent to be expected from such compliance.

CEN work is progressing in a number of material and functional TC's, including CEN/TC 129 - 'Glass in building', CEN/TC 132 - 'Aluminium and aluminium alloys', CEN/TC 139 - 'Paints and varnishes', CEN/TC 209 - 'Zinc and zinc alloys', CEN/TC 249 - 'Plastics', CEN/TC 254 - 'Flexible sheets for waterproofing', CEN/TC 262 - 'Protection of metallic materials against corrosion'. All of the above committees are producing EN's for materials and finishes which will be relevant to the durability of the curtainwall product. See appropriate programme of work of individual TC's for list and availability.

A.1.3.2 State of the art is established and continues to be established by historical evidence of long-standing performance, related to the incorporation of specific materials, finishes and design techniques.

Annex Z of the Product Standard lists the clauses which meet the requirements of the mandate given under the EU Construction Products Directive (89 / 106).

EC acceptance of CEN/TC 33 answer to the

Mandate M/108

CURTAIN WALLING

COMMISSION SERVICES LETTER OF ACCEPTANCE TO CEN

MANDATE M/108

CURTAIN WALLING

On 7 October 1997, Mr. Vardakas - Director of Direction B/DG III - addressed to Mr. Hongler , General Secretary of CEN, the Commission Services " Letter of acceptance ", with regard to CEN letter of 23 July 1997, transmitting the work programme for the development of harmonised standards for Mandate M/108.

Having analysed the content of the work programme proposed by CEN in answer to the mandate M/108 for the above mentioned family of products, the Commission Services found such a work programme to be acceptable in general terms.

For the preparation of the harmonised standards, nevertheless, a certain number of observations had to be taken into account. These observations were transmitted to CEN in an attached annex.

Annex refering to the comments made by the Commission Services to the work programme persented by CEN in answer to the MANDATE M/108 on CURTAIN WALLING.

COMMENTS ON CHAPTER 0

1. It is understood that CEN will not prepare harmonised standards for the CE marking of :

a) Patent glazing (glazed sloping roofs) kits;

b) Roof glazing constructions; or

c) Curtain walling kits with precast concrete panels.

The Commission services may prepare mandates to EOTA for those products that have not been covered in the proposed work programme, if requested to do so.

COMMENTS ON SECTION A

2. Regarding the list of essential characteristics the Commission services clarify the following points :

a) Reaction to fire, fire propagation to upper levels and fire resistance should be dealt with taking into account the decisions and mandates ohf the Commision regarding fire issues. Consultation with TC 127 and the CEN consultant responsible for fire issues is encouraged on these matters.

b) Thermal shock resistance and impact resistance/safe breakage were requested by Member States having reqirements to eliminate or reduce the risk of sharp objects falling down from façades and must consider any possible action (e.g. fire, temperature changes etc, for thermal shock and requirements should be applicable to kits including brittle materials and not just glass. Consultation with TC 127 and the CEN consultant responsible for fire issues is encouraged as regards the fire aspects of thermal shock resistance.

3. Regarding the two suggested supporting standards under A.1.2 (3) - one test or the other must be chosen . If both are necessary, then neither of them should be optional. Member States have not given any indication during the preparation of the mandate as to when to request one or both methods. If existing national regulations require such a difference, the intended uses identified in the standard should be adapted accordingly and the relevant test applied.

4. Regarding the two supporting standards suggested under A.1.2 (10) - the intention of the two standards should be clarified . Is one a method of test and the other a means of expressing the outcome, or are they different methods of evaluation ? If the latter, the general philosophy on multiple determination methods must be followed (see clause 9 of chapter II of the mandate).

5. Durability refers to the decrease of performance in relation to mandated performance characteristics, determined against naturally occuring actions. Tests to determine such durability can be direct (on the product) or indirect (either on the constituents or through the

determination of related parameters). Methods selected should provide information on the working life of the product (see definition in IDs).
Nevertheless, the wish of Member States to speed up the preparation of CE marking standards has led the SCC to accept compliance with durability requirements within the limitations of the state of the art. This means that CEN are requested not to introduce into their technical specifications requirements which might need research for accurate implementation. However, the aim of the CPD in this respect remains in indicated above. It is for CEN, where possible, to go in this direction whilst applying the state of the art.
6. As regards Annex III of the mandate, it should be understood that only the characteristic " Reaction to fire " comes under system 1, for the classes shown. All the other characteristics shown come under system 3.
7. Finally, Technical Committees are reminded that the comments of the CEN consultatnts should be taken into account, both during and after the preparation of the work programme.