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REVISED MANDATE M 136 TO CEN/CENELEC
CONCERNING THE EXECUTION OF STANDARDISATION WORK
FOR HARMONIZED STANDARDS ON

CONSTRUCTION PRODUCTS in contact with water intended for human consumption

RELATED TO THE FOLLOWING END USE :

Transportation, storage and distribution up to, and including the consumer tap of the water intended for human consumption.

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 CPD", and of the Council Directive of 3 November 1998 on the quality of water intended for human consumption (98/83/EC), hereafter referred to as "the DWD".

In May 2001, the Commission issued a first text of this mandate to CEN. This revised text takes account of adjustments needed with regard to procedures and to some technical content as well as of the EAS-process and of the work undertaken in the framework the group mentioned in Chapter II paragraph 2, and their relevant results.

The water intended for human consumption is hereafter referred to as "Drinking Water", but it means the entire definition given at Article 2(1) of the DWD. The construction products in contact with this drinking water are hereafter referred to as "the CPDW". Their intended use is to be incorporated in works of fixed public, private and/or domestic supply and distribution – as far as the tap – of water for drinking, cooking, food preparation or other domestic purposes, of drinking water to be put into tankers, bottles, or containers, or of water used in any food-production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption. Products placed on the market for the specific intended use in drinking water extraction, production and/or treatment by the water supplier, in installations for putting drinking water into tankers, bottles, or containers, or in any food-production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption, are excluded from this mandate.

One of the aims of the CPD 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 this standardisation mandate corresponds to the wish of Member States, who have accepted the principles of setting up an European Acceptance Scheme, hereafter referred to as "the EAS".

This mandate is related to the preparation of both the supporting standards that will be needed for the EAS, and of the harmonised product standards for construction products in contact with water intended for human consumption. The aim is, on one hand, to harmonise the national and/or regional laws, regulations and any kind of administrative provisions (hereafter referred to as "National provisions") and, on the other hand, to allow products complying with these harmonised product standards to be presumed to fit for their contact with Drinking Water.

As stated by the CPD, the responsibility that the Member States have for construction works on their territory remains unchanged.

In order to fulfil 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 both the CPD and the DWD.

Chapter II – Background of the work.

Framework of the development of a European Acceptance Scheme (EAS).

Chapter III - Harmonised supporting and product standards.

Conditions regarding the content and the presentation of the harmonised standards.

Chapter IV – Work Programmes and Progress Reports.

Conditions regarding the programming, development and execution of the standardisation work for the CPDW.

The present document includes five Annexes:

Annex 1 Field of Application of the Mandate: List of products and Materials.

Annex 2 Technical Terms of Reference: List of characteristics to be dealt with.

Annex 3 Attestation of Conformity: in accordance with the relevant Commission Decisions.

Annex 4 Release of Dangerous Substances (into the environment).

Annex 5 Fitness for contact with Drinking Water (Health/Sanitary requirements).

CHAPTER I: GROUNDS

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 CPD, in connection with the DWD. It replaces any previous mandate on the same products formerly issued on a provisional base by the Commission.

This mandate is based on article 7 of the CPD and has taken into consideration the Interpretative Documents¹ that serve as reference for the establishment of the harmonised standards (see article 12 of the CPD). It is also based on article 10 of the DWD and on the implementation of its annexes.

¹ O.J. No. C 62, 28.02.1994

It serves to ensure the quality of the harmonised standards for the CPDW, provided that barriers to trade in these products exist and that the products fall within the scope of article 2.1 of the CPD;

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.

Levels or classes of requirements for the products may be proposed by the relevant technical committee(s). However their development by CEN is subject to endorsement by the Commission.

The harmonised product 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. This partial testing will be seen in the CE Marking of the relevant product(s).

CHAPTER II: BACKGROUND OF THE WORK

1. In the 1980s, the CEN created technical committees (“TCs”), organised whether by products and/or materials, or by horizontal issues, such as water supply or water analyses. In 1994, at a seminar in Vienna, the CEN identified difficulties in relation to construction products, which result from the strong regulatory provisions in the water supply.
2. For the time being, Member States have different National Acceptance Schemes for products and materials intended for contact with drinking water, which cover most CPDW. This creates barriers to trade and increases the certification expenses of the industry. In some cases, these schemes refer also to products used for abstraction and collection of water, together with its subsequent treatment.

In 1998, the Commission launched a feasibility study on the possible convergence of four National Approval schemes. The positive output of this study were presented in March 1999 to the Standing Committee on Construction who approved the creation of a Regulators Group for Construction Products in contact with Drinking Water (“the RG-CPDW”), which consisted of Regulators nominated by the Member States. The branches concerned of the industry and the relevant CEN Representatives were officially participating in the RG-CPDW work. Since 2005, this work is continued by a specific Commission expert group. The objective is to prepare a European Acceptance Scheme (EAS) for all construction products and materials in contact with drinking water, which will focus on the migration of pollutants and on microbiological growth that would risk resulting in unacceptable quantities of substances, materials or impurities to remain in drinking water. This EAS will be established by a Commission Decision that will refer to the European standards (ENs) to be used and fix the regulatory choices (e.g. acceptance criteria).

3. Since the beginning of its work, in June 1999, the RG-CPDW has identified most of the difficulties that are/will be met when harmonising the acceptance schemes for all materials and all products from different National traditions and approaches. In particular, the RG-CPDW has identified the regulatory issues, without which the standardisation process could not be finalised.

4. As far as the standardisation work is concerned, a difference shall be made, in the attached Annex 2, between the mechanical characteristics (Crushing strength, Internal and external pressure strength, Load bearing capacity, Longitudinal bending strength, Mechanical resistance of support, Maximum load for admissible deformation, Dimensional tolerances, Impact resistance, Tightness, Effectiveness, Protection against backflow, Effectiveness of safety, leakage alarm system and/or of overfill prevention devices), for which the CEN already received a Mandate in March 1999 (M131), the release of dangerous substances (since 2005 covered by mandate M366), and the DWD-related hygiene and health characteristics that are the additional requests of the present Mandate. It shall be noted that some products may not have been covered by M131 (e.g. water meters, membranes, etc.), but are covered by the present Mandate, or vice-versa (e.g. conduits, ducts).
5. Before the Commission issued the first text of this mandate, in 2001, Member States agreed that a first batch of research topics was needed, in order to reach, after the research and the standardisation phases, harmonise supporting standards. A research consortium was set up to harmonise tests on: cytotoxicity and GC-MS analysis of migration waters, the potential of a material/product to enhance microbial growth (EMG) and to assess the effect of the use of high levels of disinfectants on the migration of substances. In the meanwhile, additional research on **the impact of surface characteristics of metallic construction products** appeared also to be needed. While most of this research has been completed until 2005, the standardisation work concerned can only be finalised when also related follow-up research will be completed, conclusions and recommendations being expressed, and having been endorsed by the Commission. However, the cytotoxicity test would still need more detailed examination and might be considered for inclusion in the EAS at a later stage, and the assessment of the effect of the use of high levels of disinfectants will not be considered for the EAS.

CHAPTER III: HARMONISED SUPPORTING AND PRODUCT STANDARDS

- (1) The supporting and harmonised product standards shall be prepared to allow those products listed in Annexes 1 and 2 to be able to demonstrate the satisfaction of the EAS requirements.
- (2) The supporting standards will contain:
 - The list of materials to which this test method shall apply; and
 - A clear distinction between the regulatory and standardisation aspects; where appropriate, information on regulatory topics to be taken account of (e.g. sampling method, conditions of test, acceptance criteria, etc.) will be transmitted by the Commission; and
 - A clear definition of the test. In particular, specific information could be added in the informative part of the standard; and
 - Any further subjects that need to be addressed, in particular details regarding test waters and methods of calculating uncertainty;
- (3) The harmonised product standards will contain :

- A detailed scope and field of application; and
- A detailed description of the product or family of products covered; and
- 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 CPD Essential Requirements concerning mechanical characteristics, and of the EAS requirements (DWD-related characteristics); and
- As far as the aspects regarding “Fitness for contact with drinking water” are concerned, a clear reference to the supporting standard, without any change in its contents; and
- Guidance on the characteristics that have to be stated within the labelling that will accompany the CE marking and on the way of expressing the determined values, if any, of these characteristics; the CPD Guidance Paper on CE Marking shall be taken into consideration; and
- The system for attestation of conformity as required in annex 3 of the mandate and the corresponding specific provisions for the evaluation of conformity.

(4) A construction product in contact with drinking water shall be covered by one single standard as far as all characteristics (mechanical and DWD-related characteristics) are concerned. In cases where the same kind of product can also be for an intended use not in contact with drinking water, CEN-TCs may choose to cover the products of the different intended uses in separate product standards or in one single product standard that foresees the choice of not determining the product performance in contact with drinking water.

(5) The CEN-TCs working on the EAS related test methods (supporting standards, including those dealing with test waters and methods of calculating uncertainty) will be provided with the regulatory topics by the Commission.

(6) It is assumed that the treatment of mechanical characteristics and technical functions shall be, where possible, identical as the same characteristics and functions related to the Pipes, Tanks and ancillaries not in contact with Drinking water, expressed in the Mandate to CEN (M131). It is assumed that products, for which the CE Marking results from the compliance with harmonised product standards developed under Mandate M131, will only have to pass the EAS tests for the technical, functional and hygienic fitness for contact with drinking water (following attestation of conformity class 1+).

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

- The recommendations of paragraph 3 of Annex 3.
- The label accompanying the CE marking will list all the characteristics to be declared according to the EAS requirements. 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.

CHAPTER IV: WORK PROGRAMMES and PROGRESS REPORTS

- (1) The need for a close, proactive co-operation between the authorities responsible for national regulations and the specifications writers has been recognised by all the parties concerned.
- (2) Consequently, CEN/CENELEC will present the Commission with two revised detailed work programmes:
 - a revised work programme related to the supporting standards (test methods), that will be prepared by the horizontal TCs (water supply and water analyses). This work programme shall be delivered to the Commission, the latest three months after the reception by CEN of this Revised Mandate.
 - a revised work programme related to the product standards, that will be prepared by the product/material TCs. This work programme shall be delivered to the Commission, the latest nine months after the reception by CEN of this Revised Mandate.

If CEN/CENELEC does not respect these deadlines, the Commission may revoke the present Mandate.

Supporting standards

- (3) The revised work programme on supporting standards should identify clearly the list of standards already available or still to be finalised or to be developed, taking into consideration all the products and materials listed in the attached Annex 1 and the provisions of Annex 5.

Furthermore, for each supporting standard (test method), it should:

- indicate the materials/products for which it applies; and
- indicate the CEN work item reference; and
- differentiate the regulatory and voluntary issues/topics; and
- justify the timetable foreseen for its finalisation; and
- identify the technical committee responsible for its preparation. In particular, duplicate works between TCs and between their Working Groups shall be avoided.

- (4) When a supporting test standard for one characteristic does not exist or is not in the work programme of the TC(s), a clear statement should be presented indicating whether CEN is able, or is willing, to produce it or not. This applies in particular to the products of lesser importance, as defined in the Annex 5 item 6 of this document.
- (5) CEN/TC(s) must give a technical answer for the determination of the test methods, taking into account the wishes of the authorities responsible for national regulations that

are expressed either in this Mandate, or in relevant documents transmitted by the Commission services.

- (6) Any proposal(s) for the addition of test method(s) not included in the present Revised Mandate, but considered relevant by the TC(s), should be presented in a special chapter of the work programme on supporting standards, for further analysis by the Commission services.
- (7) Any proposal(s) for the addition of characteristics and durability aspects not included in the Mandate, but considered relevant by the TC(s), should be proposed in a special chapter of the work programme on supporting standards, for further analysis by the Commission services.

Product standards

- (8) The work programme on product standards should identify clearly the list of standards already available or still to be finalised or to be developed, taking into consideration all the products and materials listed in the attached Annex 1. It should also mention product standards resulting from other mandates issued in application of the CPD, in particular mandate M131, if the intended use of these products can be in contact with drinking water, or can be extended to the latter, and which therefore should be included in the work, where applicable indicating an amendment of the product standard needed to this end.
- (9) Furthermore, for each harmonised product standard concerning a CPDW, it should :
 - indicate the name(s) of the product(s)/product family to be covered; and
 - indicate the CEN work item reference; and
 - define the forms and materials to be covered (in accordance with Annexes 1, 2, 3, 4 and 5 of this mandate); and
 - attach the list of supporting standards, in compliance with the work programme on supporting standards defined above; and
 - justify the timetable foreseen for its finalisation; and
 - identify the Technical Committee(s) responsible for the work.
- (10) Any proposal(s) for the addition of products and/or materials and/or forms not included in the present Mandate, but considered relevant by the TC(s), should be presented in the work programme for further analysis by the Commission services. Standards prepared for products outside the work programme on product standards resulting from this mandate will not achieve the status of harmonised standards in compliance with the CPD provisions. In addition to the provisions of article 4.1 of the CPD, it must be taken into account that all the products to which the present mandate refers have a system of attestation of conformity in accordance with the relevant Commission Decision.
- (11) After examination of the work programmes and, as far as needed, consultation with the relevant CEN-TCs, the Commission services will endorse the timetable and the list of standards or parts/amendments of standards which meet the terms of this mandate and which will be recognised as harmonised supporting or product standards.

- (12) The terms of reference of this mandate may be subject to modification or addition, if necessary. Successive amendments to this Mandate would then be addressed to CEN.
- (13) Representatives of the authorities responsible for national regulations have the right and shall be able to participate in the activities of the CEN-TCs 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) The CEN will immediately inform the Commission of any problem relating to the carrying out of the mandate. Furthermore, the CEN will, twice per year, submit to the Commission a progress report on work within the framework of this Mandate. This progress report will include a description of work carried out and information on any difficulties being met, whether political or technical. The progress report will be accompanied by the latest drafts of each standard under the mandate and by updated reports on any subcontracted work. In the case of insufficient reporting, the Commission may revoke the present Mandate.
- (16) CEN will acknowledge to the Commission its acceptance of this Revised Mandate. However, this acceptance can take place only after the above-mentioned two revised work programmes have been endorsed by the Commission services.
- (17) The acceptance of the original mandate by CEN had to 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.
- (18) CEN Members will publish the standards transposing the harmonised European standards at the latest 6 months after a positive vote in CEN. National standards covering the same scope will continue to be applicable until the date agreed between CEN and the Commission.

ANNEX 1
FIELD OF APPLICATION *

CONSTRUCTION PRODUCTS

IN CONTACT WITH

WATER INTENDED FOR HUMAN CONSUMPTION

LIST OF PRODUCTS INCLUDED IN THE MANDATE

TO BE USED IN:

19/33 SUPPLY OF HOT AND COLD WATER
33/33 STORAGE FIXTURES

FORMS	MATERIALS	PRODUCTS FOR CONSIDERATION
Kits Piping system Storage system	As indicated below for components	Kits , composed of pipes and/or tanks, fittings, adhesives and joints, including their supports, to be used for the transport, storage and/or distribution of the water intended for human consumption.
Rigid components Flexible components	<p>Cementitious materials : (e.g. reinforced/fibred/ unreinforced/prestressed precast concrete, cement mortar lining with or without seal coat, polymer modified, fibre cement, ...)</p> <p>Metallic materials : (e.g. steel, aluminium, copper, alloys, cast/ductile/grey/ malleable cast iron, ...)</p> <p>Organic materials : (e.g. plastics, polymers, rubbers, elastomers, PVC, PE,...)</p> <p>Glassy, glass-like and ceramic materials : (e.g. glass, vitrified clay, enamel, ...)</p> <p>Composite (e.g. glass fibre reinforced polyester, carbon fibre reinforced epoxy resins,...)</p>	Pipes (coated or uncoated).

* Under the provisions of both Council Directives 89/106 (CPD) and 98/83 (DWD), it is of the competence of the Member States to fix from which place the networks carry Drinking Water (e.g. from the last treatment plant). It is understood that the DW distribution goes up to, and includes the consumer taps. Products specifically placed on the market for the purpose of being used in drinking water extraction, production and/or treatment by the water supplier, in installations for putting drinking water into tankers, bottles, or containers, or in any food-production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption, are excluded from the field of application.

Cont.

FORMS	MATERIALS	PRODUCTS FOR CONSIDERATION
Components	<p>Cementitious materials : (e.g. reinforced/fibred/unreinforced/prestressed precast concrete, in situ concrete with or without organics, polymer modified, fibre cement, ...)</p> <p>Metallic materials : (e.g. coated/mild/lined/stainless steel, aluminium, copper, alloys, ductile iron, cast iron, ...)</p> <p>Organic materials : (e.g. plastics, rubber, ...)</p> <p>Glassy, glass-like and ceramic materials : (e.g. glass, vitrified clay, enamel, ...)</p> <p>Composite (e.g. glass fibre reinforced polyester, admixtures,...)</p>	Tanks (including <u>closed and vented hot water storage units</u>) used in fixed installation for supply or storage of water intended for human consumption
Components	Metals Rubber Plastics Glass, ceramics, enamels Composite Cast iron	Valves, taps, pumps, watermeters, protection and safety devices <i>Coated or uncoated.</i>
Components	Metals Rubber Plastics Chemical compounds	Fittings, adhesives, joints, joint sealings and gaskets
Malleable Flexible	Composite	Membranes, resins.
Malleable	Composite	Coatings , including linings.
Malleable	Composite	Lubricants, greases

The following Directives must be taken into consideration:

89/106/EEC of 12 December 1988, known as the “CPD” as amended.
98/83/EC of 3 November 1998, known as the “DWD”.

ANNEX 2

TECHNICAL TERMS OF REFERENCE

Note : not all of the characteristics shown in the following tables will be relevant for every product in a particular family or sub-family. CEN should select the subset of characteristics applicable to a particular product from the full set provided.

CONSTRUCTION PRODUCTS IN CONTACT WITH WATER INTENDED FOR HUMAN CONSUMPTION

TO BE USED IN:

19/33 SUPPLY OF HOT AND COLD WATER; 33/33 STORAGE FIXTURES

1. KITS (Piping and/or Storage Systems)

Used for water intended for human consumption, pressurised or unpressurised, inside or outside (both underground and above ground) buildings. Including pipes, tanks, fittings, safety devices, adhesives, joints, valves, taps, meters, pumps, membranes, and possibly special components.

NOTE: Kits will fit for contact with Drinking Water only if all the components they are composed of have been tested and assessed for their fitness.

Characteristics of the PIPING/STORAGE KITS/SYSTEMS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTICS	Durability ⁽¹⁾
1		
2		
3	Crushing strength Internal and external pressure strength Longitudinal bending strength Mechanical resistance of support Maximum load for admissible deformation	
4	<u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u> Impact resistance Tightness Effectiveness of safety devices Release of dangerous substances	Y (against corrosion, freeze-thaw, abrasion, UV, variation of temperature,... as relevant)
5	Noise level	
6	Thermal properties	

Note: All the “unbold” characteristics are also being developed under the Mandate M131

2. PIPES

Rigid or flexible or malleable tubes used for the conveyance of water intended for human consumption. For pressurised or unpressured systems, inside or outside buildings, underground or above ground installations.

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

E R	PERFORMANCE CHARACTERISTICS	Durability ⁽¹⁾
1		
2		
3	Crushing strength Internal and external pressure strength Longitudinal bending strength Maximum load for admissible deformation Dimensional tolerances Impact resistance <u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u>	Y (against corrosion, freeze-thaw, abrasion, UV, variation of temperature,... as relevant)
4	Tightness Permeability Release of dangerous substances	
5		
6	Thermal properties	

Note: All the “unbold” characteristics are also being developed under the Mandate M131

3. TANKS

Tanks used in fixed installation, underground or above ground, pressurised or not, including closed and vented hot water storage units, used for storage and/or supply of water intended for human consumption.

Characteristics of the TANKS to be covered by the harmonised standard, besides those already covered by other above mentioned Directives, will be:

E R	PERFORMANCE CHARACTERISTIC	Durability ⁽¹⁾
1	Mechanical resistance and stability	
2		
3	Crushing resistance Internal pressure Load bearing capacity Impact resistance <u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u>	Y (against internal and external corrosion,..., when relevant)
4	Tightness Permeability Release of dangerous substances	
5		
6		

Note: All the “unbold” characteristics are also being developed under the Mandate M131

4. PROTECTION AND SAFETY DEVICES

This family of products includes in particular leakage alarm systems and/or overfill prevention devices for tanks, pre or post installed, including mechanical and/or electrical devices.

The Directives 73/23/EEC, 89/336/EEC and 94/9/EEC shall be taken into account, when appropriate.

Characteristics of the PROTECTION AND SAFETY DEVICES to be covered by the harmonised standard, besides those already covered by the above mentioned Directive, will be:

E R	PERFORMANCE CHARACTERISTIC	Durability
1		
2		
3	Effectiveness of leakage alarm system and/or of overfill prevention devices	
4	<u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u>	Y
5		
6		

Note: The above “unbold” characteristic is also being developed under the Mandate M131

5. FITTINGS, ADHESIVES, JOINTS, JOINT SEALINGS AND GASKETS

Elements for connecting one component to another, providing tightness to the system. For rigid, flexible and/or malleable pipes, for all tanks; for pressurised or unpressurised systems inside buildings or outside buildings, underground or above ground. Definition of these elements must indicate material, diameter and thread step if relevant.

Characteristics of the FITTINGS, ADHESIVES, JOINTS, JOINT SEALINGS AND GASKETS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability ⁽¹⁾
1		
2		
3	Crushing strength Internal pressure	
4	Maximum load for admissible deformation Dimensional tolerances Tightness <u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u> Release of dangerous substances	Y
5		
6		

Note: All the “unbold” characteristics are also being developed under the Mandate M131

6. VALVES and TAPS

Device of the nature of a flap, lid, plug, etc., applied to a pipe and/or a tank to control or to release the passage of water intended for human consumption. Definition of the valve/tap must indicate material, diameter and thread step if relevant.

Characteristics of the VALVES and TAPS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability ⁽¹⁾
1		
2		
3	Dimensional tolerances Internal pressure Tightness	
+	Effectiveness	
4	<u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u>	
	Protection against backflow Release of dangerous substances	
5	Noise level	
6		

Note: All the “unbold” characteristics are also being developed under the Mandate M131

7. PUMPS and WATERMETERS

The metrology of the watermeters and pumps is not considered here.

Characteristics of the PUMPS and WATERMETERS to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability ⁽¹⁾
1		
2		
3+4	<u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u> Release of dangerous substances	
5		
6		

8. MEMBRANES, RESINS, COATINGS, LININGS, LUBRICANTS, GREASES

CEN shall determine whether and how specific product standards will be developed for these products. The coated products shall be tested as such, but the coatings may need to be CE Marked. Lubricants and greases could only be used in very specific conditions to be defined. Factory made and in-situ products shall be considered.

Characteristics of the MEMBRANES, RESINS, COATINGS, LININGS, LUBRICANTS, GREASES to be covered by the harmonised standard will be:

E R	PERFORMANCE CHARACTERISTIC	Durability ⁽¹⁾
1		
2		
3+4	<u>FITNESS for contact with Drinking Water (EAS, see Annex 5)</u>	
5		
6		

ANNEX 3
ATTESTATION OF CONFORMITY

Note: for products having more than one of the intended uses specified in the following families, the tasks for the approved body, derived from the relevant systems of attestation of conformity, are cumulative.

**Product family:
CONSTRUCTION PRODUCTS
IN CONTACT WITH
WATER INTENDED FOR HUMAN CONSUMPTION**

1. Levels and classes for product performances

- 1.1 For the time being, the differences specified in Article 3.2 of the CPD do not seem to give rise to the need of a classification system for products.
- 1.2 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 provisions set in the Chapter I para 2 and 3 of this Mandate apply.

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 harmonized standards:

Product(s)	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
- Kits (Piping and storage systems) - Pipes - Tanks - Valves, taps, pumps, watermeters, protection and safety devices. - Fittings, adhesives, joints, joint sealings and gaskets - Membranes, resins - Coatings - Lubricants, greases	In installations for the transport/distribution/storage of water intended for human consumption, up to, and including, the consumer taps.	-----	1+ ⁽¹⁾
<p>System 1+: see CPD Annex III. 2.(i), with audit-testing of samples</p> <p>⁽¹⁾ the performance of the products, other than that related to the sanitary properties of the product ("fitness for contact with water intended for human consumption"), shall be assessed following the provisions of Decision 1999/472/EC, published in O.J. L 184, on 17.07.1999, p. 42 to 49.</p>			

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 system 1+, regarding the initial type testing of the product [see Annex III.1.a of the CPD], the task for the approved laboratory will be limited to the assessment of the following characteristics:

- Fitness for contact with Drinking Water

(All other characteristics of the products will be dealt with using the system enforced in the Commission Decision 1999/472/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 characteristic shall be of interest of the approved body:

- Fitness for contact with Drinking Water

(All other characteristics of the product will be dealt with using the system enforced in the Commission Decision 1999/472/EC)

3.4 For products under system 1+, for the initial inspection of the factory production control [see Annex III.1.f of the CPD], only parameters related to the following characteristic shall be of interest of the approved body:

- Fitness for contact with Drinking Water

(All other characteristics of the product will be dealt with using the system enforced in the Commission Decision 1999/472/EC)

ANNEX 4
RELEASE OF DANGEROUS SUBSTANCES

**Product family:
CONSTRUCTION PRODUCTS
IN CONTACT WITH
WATER INTENDED FOR HUMAN CONSUMPTION**

The present Annex 4 deals with substances that are considered as dangerous, therefore restricted in terms of content in the formulation, or potential "external" release. European technical specifications must be adopted taking into account necessary legislation on substances classified as dangerous.

The Annex 5 of this Mandate deals with the assessment of fitness for use of the CPDW. In this Annex 5, care is taken about the potential product/material migrations that could affect the quality of water. However, the external migrations are not considered in Annex 5, nor the possible content of a substance restricted in use at the European or National levels, although this substance does not migrate into the water, nor affects its quality.

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 specification writers to take into account the necessary legislation, a Guidance Paper (GP H) on Dangerous Substances was elaborated by the Commission services. This Guidance Paper mentions the European regulations (Directive 76/769/EEC and all related following amendments and adaptations), as well as the specific national requirements when and where more stringent than the European ones. Specification writers should use this document as a guide, but must also refer to mandate M366 and standardisation work resulting from it.

ANNEX 5
FITNESS FOR CONTACT WITH DRINKING WATER

**Product family:
CONSTRUCTION PRODUCTS
IN CONTACT WITH
WATER INTENDED FOR HUMAN CONSUMPTION**

1. CONTEXT: RELATIONSHIP BETWEEN AUTHORITIES RESPONSIBLE FOR REGULATIONS AND SPECIFICATIONS WRITERS

This Annex is intended to fulfil two requirements:

- (a) To provide specifications writers with a general framework within which their work shall be conducted, as far as DWD-type characteristics (also called “health/sanitary” characteristics) are concerned.
- (b) To set out the structures and elements of the EAS approval processes in such a way as to allow the identification of those components for which compliance is, or is not, required to be declared for the purposes of CE Marking.

• The work of drafting supporting standards (test methods), and the subsequent processes of assessing and declaring full or partial compliance, will need to have regard to the full statements on requirements and procedures for the EAS communicated by the Commission. However,

the specifications writers of supporting standards may propose either deviations from these statements, or new approaches on regulatory matters. Before being developed, these proposals shall prior be accepted/endorsed by the Commission.

These TC(s)’ proposals shall be submitted to the Commission, for examination, by means of the work programme and/or the progress reports defined in Chapter III of this Mandate. Furthermore, the TCs concerned can at any time contact the Commission on a specific subject for opinion.

2. SCOPE OF APPLICATION

All the products and materials and forms set out in Annex 1 of this Mandate shall be dealt with.

The Commission may also point out new products to which the EAS may be applied in all or some Member States to meet the requirements of the Drinking Water Directive (DWD). Through an amendment to this Mandate, it may request CEN to develop laboratory procedures and measurement methods for such products.

3. STANDARDS TO SUPPORT THE EAS

It is the intention of the Commission to use European Standards wherever possible to specify the detailed methods to be used in the various tests required by the EAS. Some already exist as ENs or prENs, there are items under development, but many new work items are likely to be identified.

This Mandate anticipates that complete supporting standards, later published as ENs, will describe the methodology, procedures and criteria to be applied in the operation of the EAS.

Beside the subjects and issues usually addressed in supporting standards, the latter shall also specify details regarding test waters and methods of calculating uncertainty.

The regulatory matters will be clearly identified as such. They will be fixed by means of an EC Decision establishing the EAS, and will be reported in the product standards. The Decision will provide for the regulatory elements to be introduced into the product standards, i.e. limit values for the material-related parameters that are considered acceptable in view of Article 10 of Council Directive 98/83/EC and – as far as appropriate – provisions concerning other product characteristics from which the respect of these limit values may be concluded. On this basis, the product standards shall specify the methods of accepting or rejecting the construction products with regard to their fitness for use in contact with drinking water, where needed with reference to levels of uncertainty in application of related support standards. They furthermore shall define the specific factory production control in respect of this fitness, introducing elements of continuous control where appropriate.

4. STAGED APPROACH

The research programme required for establishing the EAS is expected to be finalised at the end of 2006, and until that research is complete it will not be possible to provide CEN with the entire adequate information for the development of all the standards likely to be needed. However, it is intended that drafting of methods are undertaken on those EAS elements where the nature of the work to be carried out by CEN can be clearly specified. Therefore the Mandate gives both specific directions on the work to be undertaken now, and a general framework within which supplementary Mandate directions will be given to CEN as the regulatory requirements are clarified.

This modular approach is intended to be consistent with any agreements that may be made at European level, or nationally, to introduce certain elements of the EAS ahead of eventual full implementation.

Technical issues are expected to arise that cannot currently be anticipated, or are too specific and detailed to appear within the general framework set by the Mandate. When such issues cannot be resolved by the specifications writers alone, CEN can request Commission guidance for the purpose of circulating it to the CEN/TCs responding to the Mandate.

5. POLICY APPROACH TO DIFFERENT MATERIALS FOR SIMILAR PRODUCTS

In several water industry applications, products with similar functions can be made of differing materials. It is intended that all materials will be subject to appropriate testing to demonstrate comparable standards of consumer protection, and to offer a “level playing field” in the market place for the various materials. This does not mean, however, that all materials will be subject to the same tests. Procedures and measurement methods will be devised having regard to the nature of the constituent substances in the material, performance characteristics over time, and the detail of established regulatory requirements.

Given the quite different chemical constituents of organic, metallic and inorganic non-metallic materials, and the different performance patterns in service, different test suites appropriate to this variety are set out below for these three classes of material. These suites are designed specifically to examine potential adverse health and aesthetic effects, and regulatory non-compliance relevant to the character of the material.

6. PRODUCTS OF LESSER IMPORTANCE

At present, several Member States have constituted lists of products for which the fitness for contact with DW can be certified without testing or with a limited/partial testing. A European list of such products of lesser importance with regard to the migration of pollutants to, and the

growth of micro-organisms in drinking water shall be part of the EAS. The main principle retained so far is that the certification scheme for these products will be function of the surface in contact (S/V) and of the degree of potential adversity. If both aspects were judged negligible, then no testing would be required. However, a continuous surveillance of the properties of such products shall/should take place.

7. TREATMENT OF INDIVIDUAL MATERIALS AND ASSEMBLED PRODUCTS

Testing will be straightforward when single materials, or products made from single materials, are being examined. Testing of assembled products (e.g. taps, meters, valves, etc.) will be more complex. A variety of materials are likely to be involved, and some components may be so small as to be regarded as making no detectable impact on water quality. The Commission will communicate guidance on the definition and treatment of products of lesser importance (see item 6 above). It should be evaluated whether the manufacturers of components would agree to prepare product standards for their components, which would lead to a CE Marking of these products. CEN will need to anticipate testing requirements for single materials and for assembled products.

8. THE APPROACH TO CE MARKING

It is intended that, on one hand, all CPDW throughout Europe will be required to comply with all relevant elements of the EAS, and, on the other hand, that all the CPDW complying with all the CPD-type characteristics in application of the relevant Essential Requirements will be CE marked. With regard to Essential Requirement 3, these characteristics will be defined as to respect the requirements of the DWD.

However, the manufacturer may choose the “No Performance Determined” (NPD) option with regard to one, several or all relevant elements of the EAS. Whilst the CE marking can be used without the product achieving full EAS compliance, e.g. if the manufacturer chooses the NPD option as mentioned above, the Commission will consider the idea of using an easily recognisable **pictogram** accompanying the CE marking of products that have secured full approval, and can therefore be used anywhere in Europe as regards “Fitness for Contact with Drinking Water”.

As far as the CE marking is concerned, two exceptions have, however, to be noted:

- It is anticipated that Transitional Periods will be agreed to allow Member States to adjust local technical and regulatory practices to the requirements of the EAS. During this period products the information accompanying the CE Marking will need to be capable of demonstrating the levels of compliance achieved, including the use of the above-mentioned “No Performance Determined” option for EAS elements not yet fully adopted. Thus the various elements of the relevant EAS test suites will need to be distinguishable to allow appropriate declarations of compliance.
- The products of lesser importance, i.e. the CPDW for which both the surface in contact and the toxicity risks are recognised small enough not to affect the quality of the DW (see item 6 above). The concept will be explained in a separate document. A list of these products will be part of the EC Decision establishing the EAS.

9. STRUCTURE OF THE FULL EAS ANALYSIS AND MEASUREMENT PROGRAMME

Analysis and measurement have to follow the principles of DWD Article 4.1.a: "any substances which, in numbers or concentrations, constitute a potential danger for human health". It is envisaged that the EAS analysis and measurement programme will comprise 4 elements. Regarding products containing organic materials (see also hereafter item 11.), this series is structured below to reflect the increasing complexity and costs of test procedures. More detailed information on testing sequences to be used in practice will be communicated by the Commission.

- Compliance with Positive List requirements. European Positive Lists for monomers, additives, colorants, coatings, rubbers, epoxy polymers, greases, sealings, solvents, adhesives, metals. These lists will be mainly alphabetical ones substance-per-substance, except specific cases, to be defined later, where polymer specific lists would be set up.

Series 1 Tests - Organoleptic: odour, flavour, colour, and turbidity.²

- Chlorine demand
- TOC

Series 2 Tests - Relevant DWD Parameters, following the composition of the product and the DWD Annexes.

- Detection of Positive List substances, and, when required, analysis of items identified for "case-by-case" examination with a view of substances to be added to the Positive List.

Series 3 Tests - Enhancement of microbial growth

- GCMS

Standardisation work on the Series 3 test topics will be finalised when the Commission will have communicated the recommendations of research to end in 2006.

This common structure will be used to develop the suites of methods relevant to the type of material under examination.

There will be 2 distinct stages in the procedures, and generally supporting standards will be developed separately for each stage:

- (a) Producing Migration Water Samples. The test specimen is treated with water using standardised conditioning procedures, involving some or all of the following: washing, flushing, and leaching linked to pre-defined stagnation periods that are related to the DW consumption pattern. These topics shall be communicated by the Commission. TC164 has already partially covered this area.
- (b) Testing the Migration Water for effects (e.g. taste), or the concentration of migrated chemicals. To date TC 230 has covered this area for taste and odour.

² Although organoleptic parameters are not falling under the CPD Essential Requirement 3, they need to be controlled as indicators of threats to hygiene or health and, in particular, in order not to create a pre-charge that would make it impossible to correctly apply Article 7 of the DWD with regard to monitoring of the quality of water intended for human consumption.

10. PRODUCTS CONTAINING ORGANIC MATERIALS – STANDARDISED PROCEDURES AND MEASUREMENT METHODS

All products containing organic materials in contact with DW shall comply with their respective Positive Lists' requirements and shall be tested accordingly. No testing or partial testing could apply for products of lesser importance (see item 6 above).

a) In principle, the EAS related supporting standards for organic products will have the following structure:

	Water Sampling Method		Analysis Method
	Transportation	Storage	
Series 1 Tests			
Odour and flavour	EN 1420-1	EN 14395-1	EN 1622
Colour	EN 13052-1	EN 14395-1	EN ISO 7887
Turbidity	EN 13052-1	EN 14395-1	EN 7027
TOC	EN 12873-1&2	EN 12873-1&2	EN 1484
Chlorine demand		EN xxx	prEN ISO 7393/prEN 14718
Series 2 Tests			
DWD parameters PL substance, if required further examination	Following DWD requirements and composition of the product		
Series 3 Tests			
GC/MS Microbial growth	Following the conclusion of research as communicated by the Commission		

b) It shall be considered that the above existing standards or pre-standards (ENs and prENs) shall/must take into account the Commission endorsement of all the regulatory matters that they contain. These regulatory issues could be changed so that an overall consistency between products and between materials is assured.

11. PRODUCTS CONTAINING METALLIC MATERIALS – STANDARDISED PROCEDURES AND MEASUREMENT METHODS

All products containing metallic materials in contact with DW (composed of metals and/or alloys) shall comply with the Composition List requirements and shall be tested accordingly.

a) It is understood that, like for any other materials, the composition has to be submitted by the manufacturers to the Certification authority. However, the specification writers have to establish how and when such compositions will have to be verified.

b) The tests of above defined series 1, 2, and 3 shall apply to these products, unless otherwise proposed by the specifications writers (series 1 and 2) or by the research team (series 3), if and when endorsed by the Commission. Indeed, some of these tests could appear irrelevant, when taking into account the composition and/or the use of the product.

c) Concerning the maximum tolerated migration of metallic materials, the DWD thresholds shall be considered. Consequently, the products shall be tested according to their composition toward the relevant metallic parameters of the DWD Annex I Part B (antimony, arsenic, boron, cadmium, chromium, copper, lead, mercury, nickel and selenium). The potential interactive effects of the presence of different metals in a network shall also be taken into account.

d) CEN needs to define standardised test(s), being a dynamic test ("rig test"), a static test ("sit and soak test"), or a combination of both which could be correlated with effects in real installations and operational in terms of reliability, inter-laboratory reproducibility, etc. Effects

in real installations refer to a consumption pattern, from which results a stagnation scheme for the migration water (for instance, 12h+8h+4h stagnation periods over a 24h period).

e) Once a metal or an alloy will be approved, it will be incorporated in a European Composition List. It is envisaged for some commonly used metals and/or alloys to use reference materials that would allow a comparative testing for any new product that would slightly differ in composition. CEN is required to make proposals for such comparative testing (e.g. for fittings made of alloys).

12. PRODUCTS MANUFACTURED OF NON-METALLIC INORGANIC MATERIALS – STANDARDISED PROCEDURES AND MEASUREMENT METHODS

Standardised procedures and measurement methods are required for all products manufactured of non-metallic inorganic materials that come into contact with water intended for human consumption, some examples being given in Annex 1.

The following definitions characterise the products covered in this section :

Cementitious products:

Products, as they are placed on the market, that contain an inorganic cement in sufficient proportion to act as the main binder by forming a hydrate structure which governs the performance of the products (e.g. cement mortar linings to pipes/tanks, concrete pipes, products using fluid concrete for water-retaining structures, etc.).

Associated non-cementitious products:

Products (e.g. curing compounds, formwork release agents, etc.) that are applied to the surface of some cementitious products (usually concrete), directly or indirectly, during the construction process and which may remain as residues in contact with water.

Products containing other non-metallic inorganic materials:

Such materials are mainly glassy or ceramic

The full range of cementitious products includes those that:

- are basic cementitious products (i.e. free from additives, fibres, or porous seal coatings);
- contain an additive (e.g. polymer, admixture etc.), whether inorganic or organic;
- include fibres, whether inorganic or organic;
- have a porous seal coating, as either factory applied or site applied.

The form of the cementitious products, when placed on the market, depends on the production process and includes those that are :

- factory-made (i.e. products which when sampled are hardened monoliths);
- formed-in-situ (i.e. products, such as fluid concrete, which are mainly made using basic construction products such as cement and aggregates);
- site-applied (i.e. products, such as spray-applied mortar, which as sampled are also not yet in the state in which they will be in contact with drinking water).

However, currently, there is no mandate for formed-in-situ or site-applied cementitious products with the intended use of being in contact with water intended for human consumption.

Factory-made cementitious products in contact with DW, and in the case harmonised product standards will exist for formed in situ and site-applied cementitious products in contact with DW, all of them shall be certified using the same test principles.

All constituents (e.g. cement, aggregates, admixtures, seal coats etc.) used in cementitious products shall comply with their respective harmonised product standards.

It is anticipated that products manufactured of non-metallic inorganic materials, as defined above, shall be tested for, and standardised according to, the parameters given in the table below:

	Organic free cementitious products	Cementitious products containing organic material	Associated non-cementitious products, non-metallic inorganic products to form final products in situ, and products manufactured of other non-metallic inorganic materials	Test method (Note 1)	Analysis method (Note 2)
Series 1					
Odour and flavour	x	x	x	EN XXX- Part 1	EN 1622
Colour	x	x	x	EN XXX- Part 1	EN/ISO 7887
Turbidity	x	x	x	EN XXX- Part 1	EN/ISO 7027
TOC	x	x	x	EN XXX- Part 2	EN1484
		x	x (Note 3)	EN XXX- Part 2	See DWD 98/83/EC
Series 2					
DWD parameters	x	x	x	EN XXX- Part 2	
Aluminium	x	x	x (Note 3)	EN XXX- Part 2	
Series 3 (NOTE 4)					
GC/MS		x	x (Note 5)	EN XXX- Part 2	
Microbial growth		x	x (Note 5)	EN XXX- Part 5	

Note 1: Test methods for producing water samples ('migration water'). Standards to be developed by CEN

Note 2: Analytical methods for testing the migration water.

Note 3: Not applicable to associated non-cementitious products made of organic material.

Note 4: Test methods will be enabled by the ongoing research, after communication by the Commission of the final recommendations.

Note 5: Only applicable to associated non-cementitious products made of organic material.