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HORIZONTAL COMPLEMENT TO THE MANDATES
TO CEN/CENELEC

CONCERNING THE EXECUTION OF STANDARDISATION WORK FOR THE
**DEVELOPMENT OF HORIZONTAL STANDARDISED ASSESSMENT METHODS
FOR HARMONISED APPROACHES RELATING TO DANGEROUS SUBSTANCES
UNDER THE CONSTRUCTION PRODUCTS DIRECTIVE (CPD)**

Emission to indoor air, soil, surface water and ground water

DESCRIPTION OF THE SPECIFIC MANDATE

I. FOREWORD

This mandate details the scope of a standardisation mandate issued by the Commission to CEN/CENELEC within the context of the Council Directive 89/106/EEC of December 21, 1988 concerning construction products, hereafter referred to as "the Directive" or CPD. The mandate deals with the subject of emission of dangerous substances from construction products as defined in the CPD that may have harmful impacts on human health and the environment as called for under the Essential Requirements 3 of the CPD, hereafter referred to as ER3. The scope of this mandate covers these substances as far as they are relevant with regard to construction products and, due to the risk of harmful impacts, are restricted or banned by any EU and/or Member States notified regulations, hereafter referred to as "regulated dangerous substances".

CEN/CENELEC will need to identify in detail the specific work items of standardisation. To this end, it will take into account existing experience in this field, including that provided by industry and by the European Commission expert group on regulated dangerous substances, on the one hand, and further information provided by the European Commission, in particular with regard to substances to be dealt with in priority under this mandate, on the other hand.

The present mandate is intended to provide harmonised European measurement/test¹ standards that are needed in order to make possible the "approximation" of laws, regulations

¹ According to International Vocabulary in Metrology (VIM), a measurement is a set of operations with the objective of determining a value of a quantity. For the determinations addressed in this mandate, it is to be noted that a measurement includes all the sampling steps as underlined in EN ISO 17025. According to EN 45020 a test (FR = essai and DE = Prüfung) is a technological operation that consists of the determination of one or more characteristics of a given product, process or service according to a specific procedure. It is to be noted that such specified procedure is often called testing programme.

and administrative provisions of the Member States, hereafter referred to as "regulations". This approximation is expected to be achieved by incorporating in the regulations of the Member States the mandated measurement/test standards.

In this respect, the technical specification writers shall link their work as much as possible to harmonised European standards for construction products, already existing or under preparation. They shall take account of economy, choosing the least onerous possible approach consistent with the purpose², and refer to the basic principles prevailing in the regulations of Member States as described in interpretative document N°3 (ID3)³.

The essential requirements being expressed in terms of performance of the works, the characteristics of the construction products (hereafter referred to as products) regarding the release of regulated dangerous substances shall be also expressed – as far as practicable - in terms of performance so that, in referring to the harmonised European standards and ETA's, the regulations may "approximate" evolving in terms of "performance requirement".

Harmonised product standards and ETA's will take into account the intended uses of the product, the content and release of regulated dangerous substances, the assessment of conformity and the information accompanying the CE marking, which will contain the values of the characteristics of the product on the basis of the technical specifications.

The CEN/CENELEC programme in response to this mandate shall consist of a comprehensive package of technical reports and of measurement/test standards that are manageable and user-friendly for regulators, product technical specification writers, writers of European Technical Approval Guidelines/Common Understanding Assessment Procedures (ETAGs/CUAPs), producers, notified bodies and users.

² Including a coordinated approach for the different work packages.

³ OJ No C 62, 28.02.1994

II. 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.

This mandate is based on article 7 of the CPD and has regard to ID3 and to Guidance Paper H, which is the reference for the establishment of the standards in relation to ER3 (see article 12 of the CPD). It serves to support the quality of the standards, always with reference to the state of the art, with particular reference to the assessment of products intended to be used in situations where ER3 is a requirement. It also aims at satisfying this essential requirement in regard to regulated dangerous substances as set out in annex 1 of the CPD, provided that barriers to trade in these elements exist, or risk to do so, and that the products fall within the scope of article 2.1 of the CPD.

Therefore, this standardisation mandate refers to products for which the two following conditions are fulfilled:

- a) the products are or risk to be subject to technical barriers to trade arising from regulated dangerous substances;*
- b) the characteristics of the products regarding regulated dangerous substances influence the satisfaction by the construction works, in which they are to be incorporated in a permanent manner, of the essential requirements as laid down in article 3 of the CPD and set out in terms of objectives with regard to hygiene, health and the environment, in Annex 1 of the CPD. These works are subject to legislative, regulatory or administrative regulations of Member States covering such essential requirements specifically in the field of dangerous substances⁴.*

The measurement/test standards deriving from it shall therefore provide measurement results that could be expressed, as far as practicable, in performance terms (art. 7.2 of the CPD), having regard to ID3 and shall be suitable for addressing the emission of regulated dangerous substances in harmonised product technical specifications (standards and ETAs). Where this is not feasible or relevant in order to comply with the relevant regulations concerning the content of certain substances in products or not possible by practical means, justification will be made in the Work Programme when it is presented to the Commission. The mandated measurement/test standards shall permit appropriate assessment of construction products which allow works to meet the essential requirements.

⁴ Any other type of barrier to trade falls within Articles 30/36 of the Treaty and must be directly eliminated by the Member States.

III. STANDARDISATION MANDATE

With reference to the grounds given in section II and further provisions of the CPD, the harmonised measurement/test standards to be developed in accordance with this mandate shall take account of the following:

- 1. Measurement/test standards shall be prepared to allow the assessment of the emission performance of regulated dangerous substances from construction products, under normal conditions of use, into indoor air, soil, groundwater and surface water. Existing measurement/test standards (see IV 2. und 4.), in particular those already provided for in existing harmonised European standards for construction products or those under preparation, shall be used wherever possible. The terms of reference for measurement/test schemes (in particular recommendations for the procedures of initial testing, classifying with out further testing) are described in Annex 1. The terms of reference for sampling procedures complementing existing sampling standards for construction products are described in Annex 2. The terms of reference for the measurement/test of the content of regulated dangerous substances in products are described in Annex 3. The terms of reference for the measurement/test of the emission of regulated dangerous substances into soil, groundwater and surface water are described in Annex 4. The terms of reference for the measurement/test of the emission of regulated dangerous substances into indoor air are described as Annex 5. Relevant regulations and measurement/test methods will be provided through the Commissions database.*
- 2. Mandated measurement/test methods shall have, whenever possible, a horizontal character applicable to one or several relevant families of construction products based on the information transmitted by the Commission to CEN according to IV.2 for that measurement.*
- 3. Each measurement/test standard (or group of standards) shall contain:*
 - a clear and comprehensive field of application (scope⁵);*
 - measurement/test methods which suit the concepts of Attestation of Conformity according to Annex III of the CPD.*
 - a specification of the measurement/test procedures for each of the necessary measurement/test steps (see annexes), from the sampling plan for the construction product down to the overall measurement/test report, including the necessary minimum requirements for proper interfacing among those steps especially when they are specified in different standards, for purposes of quality management and for relevant traceability to SI units⁶;*

⁵ Scope has the meaning of ‘field of application’ and its equivalents are in French ‘domaine d’application’ and in German ‘Anwendungsbereich’.

⁶ SI units are the reference measurements units of the Systeme International worldwide basis for legal metrology. It provides fully consistent references for “measurement” on the basis of selected fundamental standards.

- a clear and comprehensive specification of the overall measurement/test report that is intended to provide the measurement/test results, the related data necessary for their proper interpretation and use, and all relevant information documenting the measurement/test conditions and measurement/test steps;*
- 4. *CEN/CENELEC shall ensure consistency among measurement/test standards regarding emissions into different spheres of the environment, i.e. soil, ground and surface water, and indoor air⁷.*
- 5. *Measurement methods to be developed according to the other annexes should be validated (in terms of robustness and variability-uncertainty for each product group) so that their quality is fit for purpose. Knowledge of the robustness and the uncertainty of the measurement results is required for both testing compliance with regulations and the development of testing schemes for regulatory purposes or voluntary systems. When this validation is not completed, the draft standards shall only be published as Technical Specifications awaiting such validation. Appropriate robustness and uncertainties generally requires that the standards include validated quality criteria.*

⁷ The CPD deals with the “in use” phase of construction products. To ensure consistency test methods being used for other phases or other Directives should be reviewed.

IV. EXECUTION OF THE MANDATE

1. *The documents and standards resulting from the Work Packages defined in Annexes 1 to 5 will have to be delivered by no later than 2008. With the Commission's consent, justified amendments or vertical standards for specific products or product families may be completed by December 2011.*
2. *The Commission will provide information on existing regulations related to ER3 to identify the substances to be dealt with in priority under this mandate. After formal acceptance of the mandate, CEN/CENELEC will present to the Commission within four months a comprehensive list of already existing CEN, ISO or national standards (published or under development) and other relevant documents (e.g. technical reports) corresponding to the objectives of the present mandate, and 4 months later a detailed proposal for the Work Programme.*
3. *Having regard to the scope of this mandate this Work Programme will include the list of measurement/test standards considered necessary to cover the requirements regarding health and environment of ER3 (see III.1, III.3 and IV.4) in respect of regulated dangerous substances and a list of all product standards considered to require measurement/test methods for the release or content of regulated dangerous substances to fulfil regulatory requirements.*
4. *In this Work Programme the title of each proposed standard will be followed by:*
 - *a clear and comprehensive preliminary field of application (scope), including the products to which it will apply;*
 - *the list of reference documents: European standards (EN, ENV, TS, prEN), national standards, ISO standards, research results, etc.; this may include relevant measurement standards already developed in other fields than the construction sector;*
 - *the list of specific requirements (scenarios dependent) that are identified in the database (see III.1) and intended to be taken on board in developing this measurement standard;*
 - *the timetable for the development and the publication of each measurement standard by the relevant TCs and of its reference by the Commission;*
 - *the identification of the responsible CEN Technical Body(Bodies).*
5. *CEN/CENELEC will need to identify in detail the specific work items of standardisation, including with regard to substances to be dealt with in priority under this mandate. In the Work Programme, CEN/CENELEC will list any aspect (characteristics, construction products, specific intended uses,...) among those specified in the mandate (see III.) which are not intended to be taken as a work item of the Work Programme and the reasons why these aspects are not covered in the Work Programme. Products, characteristics and/or specific intended end uses not specifically mentioned in the mandate but relevant to the product family referred to shall also be included in the programme.*

6. *The way, how the horizontal measurement/test standards could be integrated into product standards and European Technical Approvals/Common Understanding Assessment Procedures (ETAGs/CUAPs) has to be described.*
7. *To guarantee the most efficient development of the relevant measurement/test methods and the most practical implementation in the relevant product standards, ETAGs and CUAPs, including economy and choosing the least onerous possible approach consistent with the purpose, the development of the horizontal measurement/test standards shall take into account the experience of industry and shall be closely linked to the work regarding the relevant product standards ETAGs and CUAPs and that of the European Commission expert group on regulated dangerous substances. It shall identify and cover all products or product families for which the three following conditions are fulfilled:*
 - *European or national regulations are limiting or banning the emission or content (see IV.8) of dangerous substances*
 - *Existing or potential barriers to trade have been identified*
 - *Measurement/test methods for these specified regulated dangerous substances have already been developed and are used on a national or EU level*
8. *The prime focus should be on products and product families for which regular testing is foreseen in national regulations. Only in a second step exceptional testing should be included in the scope of the technical body.*
9. *Due to regulatory requirements (e.g. the content of restricted and banned substances in construction products), and with regard to screening products for instance in view of a “without further testing” scenario, it is also intended to consider content⁸ measurement/test standards.*
10. *Simplified measurement/test methods of emission, generally less accurate but providing appropriate information for pre-screening (in view of “without further testing” situation), or for routine testing may be proposed. When such methods are developed, their traceability to the corresponding “reference method” shall be documented.*
11. *After examination of the Work Programme (including the specific features mentioned in IV.3) and consultations with CEN/CENELEC, the Commission will endorse the timetable and the list of measurement/test standards or parts of measurement/test standards, which meet the terms of this mandate.*
12. *The terms of reference of the mandate may be subject to modification or addition, if necessary. Especially, when the Commission has endorsed the Work Programme, the annexes will be updated with the corresponding parts of the endorsed Work Programme.*

⁸ For other regulations than the CPD the content of substances in a product/materials is relevant. Therefore the characteristic to be considered can also, as pointed out in the Guidance Paper H, be the content of the dangerous substance in the construction product, when this is the only practicable or legally correct solution (e.g. when waste is used). Although the CPD deals in particular with the emission of dangerous substances, measurement methods based on content may help for example with regard to incoming materials (e.g. any material used in the production process, treated or not, be it raw materials or materials resulting from any previous use or production).

13. *Representatives of the authorities responsible for national regulations will 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.*
14. *The Commission⁹ may participate in standardisation activities as an 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 from within the Technical Committees.*
16. *In an annual review meeting CEN/CENELEC will inform the Commission about the progress of the work.*
17. *The formal acceptance of this mandate by CEN/CENELEC will initiate the standstill procedure referred to in article 7 of the European Parliament and the Council Directive 98/34/EC of 22 June 1998.*
18. *CEN/CENELEC will develop the draft European measurement standards (prENs) in accordance with the Work Programme and will inform the Commission in good time that the drafts are being circulated for public comment.*
19. *CEN/CENELEC will execute the validation (robustness and variability) of the draft European measurement/test standards (prENs) for the relevant range of construction products based on the information transmitted by the Commission to CEN according to IV.1 for that measurement and adjust the prENs accordingly before adoption. It will inform the Commission of any adjustments necessary for specific product families or the development of measurement/test standards specific for such product groups.*
20. *CEN/CENELEC will present the final drafts of the European measurement/test standards to the Commission 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 IV.9.*
21. *CEN/CENELEC members will publish the standards transposing the mandated European measurement/test standards at the latest 6 months after their adoption in CEN/CENELEC. National measurement/test standards covering the same scope will continue to be applicable until the date agreed between CEN/CENELEC and the Commission.*

⁹ This could also include assistance from the European Commission expert group on regulated dangerous substances.

Annex 1

Technical terms of reference for the mandated technical reports regarding procedures for measurement/test, measurement/test schemes and the use of standards in this field for construction products under the CPD

1. DESCRIPTION OF THE MANDATED WORK

1.1 Introduction

1. This annex 1¹⁰ of the mandate specifies the technical terms of reference applicable to the technical reports on measurement/test procedures and measurement/test schemes for construction products under the CPD (including the “Without Further Testing’ concept).

Since there is a logical relationship between the technical reports and the standards, the development of the technical reports should be scheduled in line with the development of the standards.

1.2 Background information to be taken into consideration by CEN

Barriers to trade (Technical report 1)

2. The main body of the mandate addresses the issue of barriers to trade in several paragraphs, in particular in the chapter "Grounds".

Concept of horizontal testing procedures (Technical report 2)

3. Since a complete testing programme for a product standard or European Technical Approval Guidelines/Common Understanding Assessment Procedures (ETAGs/CUAPs) is combining different individual methods of measurement to determine different properties of the product to be tested, for sake of efficiency, it is needed to incorporate the testing programme for emission or content of regulated dangerous substances in the overall testing programme provided in the harmonized product standards or ETAGs/CUAPs for the considered product.

4. Since for a number of construction products it is not known beforehand what their use in the construction work will be, the intended conditions of use of products need to be defined. The general release scenarios shall therefore take into consideration the general intended conditions of use of the product. Where several different conditions of intended use exist that result in different release scenarios, they should be described distinctly.

¹⁰ The general terms of reference are specified in the main text of the mandate and the annexes shall be read in conjunction with the main text of this mandate and with the other annexes. This annex expands, but does not seek to modify the statements and requirements of the main body of this mandate, which prevail on the content of this annex.

Concept of products and materials “Without Testing” (WT) and “Without Further Testing” (WFT) (Technical report 3)

5. It should be possible to demonstrate, for a large number of products, that they do not contain any regulated dangerous substances or do not have the ability of releasing dangerous substances into soil, ground or surface water, or the indoor air, in quantities above the limits regulated in any Member State of the EU. Based on a generally accepted knowledge by EU or MS authorities on the constituents and/or the estimated release behaviour of the product/materials, some products might not even need initial testing and could be classified as “without testing” (WT).

6. Initial testing (IT) of the product in accordance with its intended conditions of use could provide the necessary adequate characterisation data. If IT shows that construction products meet EU or national requirements regarding relevant dangerous substances, these products will not require further testing (“without further testing” – WFT) . Annex 6 provides an example for a flowchart for a step-by-step approach for products/materials to be assessed and classified.

Products deemed to satisfy national or EU regulations without testing (WT) or without further testing (WFT) shall be listed. New products may be added to these lists, when the necessary information justifying this becomes available. The European Commission, based on the work of its expert group on regulated dangerous substances, may list, after endorsement by the Standing Committee on Construction, products classified as WFT, with a view to this classification being applied in harmonised product standards.

Use of standardised test methods as developed under the mandate in harmonised product standards and ETAGs/CUAPs (Technical report 4)

7. The way how the horizontal measurement/test standards can be integrated into product standards and ETAGs/CUAPs has to be described in such a manner that it is possible for specification writers to take into account all the current intended uses of the product, the content and release of regulated dangerous substances, on the basis of the technical specifications.

2. WORK PACKAGE 1

2.1 Introduction

8. CEN shall consider the following Work Package when preparing the Work Programme.

2.2 Work Package 1: technical reports: procedures for testing and testing schemes

1. Technical Report on examples of existing and potential barriers to trade in relation with emission of regulated dangerous substances into indoor air, surface water, ground water or soil

9. This Technical Report (TR) shall indicate the barriers to trade as identified by the product Technical Committees in relation with emission of regulated dangerous substances in indoor air, surface water, groundwater or soil. CEN is asked to describe if and how these barriers to trade can be resolved or prevented by the set of standards included in the work programme. This TR will be used by the Commission to address the issue of barriers to trade with the Member States and to discuss with regulators their requirements to prevent harmful effects as stated in ER3 of the CPD as described in the main body of the mandate

2. Technical Report on the concept of horizontal testing procedures (other than WFT products)

10. Taking into account the state of the art in the Member States, recommendations shall be elaborated for the testing procedures. The testing procedure shall address the following questions¹¹: 1) For which products are measurement/test schemes relevant in regard to indoor air, soil surface water or groundwater? 2) How to define clusters of products that behave similarly in release tests (release scenario)? 3) For which substances or products is the measurement/test of the content relevant? 4) How to combine individual measurement and test methods to an appropriate test programme to allow the determination of the relevant properties and to allow the assessment of the results.

This Technical Report shall review in accordance with the experience already gained the basis for deciding whether or not the use of horizontal standards for construction products is practicable and/or necessary in the sense of the CPD art. 7.2. The report shall include the mechanism by which required amendments of horizontal standards or in special cases vertical standards are identified for specific products or product families. In particular it shall identify the procedures and limitations for amending horizontal standards and describe the justification process for vertical standards. Attention shall be given to the intended conditions of use as well as to the required specific conditions of use for certain products especially in the definition of the testing conditions in order to allow for an adequate assessment.

¹¹ Although the CPD focuses the scope of testing on the emission of dangerous substances (performance approach), national provisions may require measurement methods based on content. In addition, for further clarification, state of the art of the national systems for the assessment of incoming materials (e.g. any material used in the production process, treated or not, be it raw materials resulting from any previous use of production) shall be taken into consideration.

11. The report shall also recommend how harmonized technical specifications should address the subject of regulated dangerous substances, and how the measurements of emission of regulated dangerous substances are included in its testing programme. The report shall also recommend how the expertise of product Technical Committees can be used adequately when drafting the horizontal test standards.

Recommendations shall be elaborated for complete testing schemes which take into account all relevant elements according to the methods for the Attestation of Conformity (see Annex III of the CPD).

3. Technical Report on “Without Testing (WT)” and “Without Further Testing (WFT)”

12. This Technical Report shall develop criteria for classifying products as WT/WFT. It must define the criteria that a product or material has to fulfil, in order to be accepted as WT/WFT. The mandated technical report will need to make it possible for the European Commission expert group on regulated dangerous substances to develop a concept, how these products will be selected, and which the European Commission intends to use for further measure, with the endorsement of the Standing Committee on Construction.

13. The TR should consider the viability of two lists, i.e. a) products or materials regarded as WT/WFT based on the generally accepted knowledge on the constituents and the release behaviour, and b) products regarded as WFT based on verifications of their emission or content of regulated dangerous substances (measured/tested according to the harmonised measurement/test standards).

4. Technical report on how to use standardised test methods as developed under the mandate in harmonised product standards, European Technical Approval Guidelines (ETAGs) and Common Understanding Assessment Procedures (CUAPs).

14.. This Technical Report shall provide step-by-step guidance for product Technical Committees (TCs), on how the harmonised measurement/test methods can be integrated into product standards. The report shall recommend how harmonised technical specifications for products should address the subject of measuring/testing regulated dangerous substances and their impacts, and how to include it the testing programme. It shall suggest, how the attestation of conformity of the products will be dealt with, and make recommendations regarding relevant systems for the Attestation of Conformity and for the CE marking. Guidance shall be provided by the TR in which cases the “non performance declared” option can be allowed.

The TR shall describe the possibilities and limitations of the use of the testing schemes described in the TR 2 on the concept of horizontal testing procedures¹². Although each standard already contains the field of application, this TR shall expand on that by addressing issues regarding the testing schemes and the ability of measurement methods to fulfil the requirements of the regulator. The TR should be used by the product TCs

¹² For example, this TR describes for which type of question what test method is appropriate and what can the result of the test method be used for and for which purposes it cannot be used.

when amending standards and is intended to be used by the European Commission expert group on regulated dangerous substances to develop recommendations and guidelines concerning the reporting of the test results in regard to CE-marking.

Annex 2

Technical terms of reference for the mandated standard complementing the existing sampling standards of construction products for the determination of the content of regulated dangerous substances or of their emission from construction products

1. DESCRIPTION OF THE MANDATED WORK

1.1 Introduction

15. This annex 2¹³ of the mandate specifies the technical terms of reference applicable to the standard complementing the existing sampling standards of construction products for the determination of the emission of regulated dangerous substances from construction products or the content of regulated dangerous substances.

1.2 Background information to be taken into consideration by CEN

Emission scenarios and intended conditions of use

16. Since for a number of construction products it is not known beforehand what their use in the construction work will be, the intended conditions of use of products needs to be defined¹⁴. The general emission scenarios shall therefore take into consideration the general intended conditions of use of the product. Where several different conditions of intended use exist that result in different release scenarios, they should be described distinctly.

Required quality of the overall measurement method

17. In order to be able to decide whether a construction product meets requirements (in IT or routine testing) the measurement/test method needs to be designed to adequately provide an appropriate answer. The quality of the answer is greatly depending on the sampling of the construction product. The strategy for the sampling is therefore depending on the question to be answered. Sampling strategy and sampling should be chosen accordingly.

18. Measurement/test methods include among others a sampling plan, sampling of construction products, sample preparation, generation in standardised testing facilities of the

¹³ The general terms of reference are specified in the main text of the mandate and the annexes shall be read in conjunction with the main text of this mandate and with the other annexes. This annex expands, but does not seek to modify the statements and requirements of the main body of this mandate, which prevail on the content of this annex.

¹⁴ For certain products more than one set of intended conditions of use can be defined, which results in more than one emission scenario.

release to indoor air, soil, groundwater or surface water under specified conditions reflecting the considered scenarios and intended conditions of use (see paragraph 17), measurement/test of the concentration of the emitted substance as released in such standardised testing facilities and overall measurement/test report with emission performance.

Existing experience to be taken into account

19. The current developments and experience gained in CEN regarding the horizontal approach on the development of standards shall be taken into account. In particular consideration shall be given to the standards and reports developed in CEN TCs on environmental issues, and in the construction sector, to determine the properties already specified in the harmonised product standards.

2. WORK PACKAGE 2

2.1 Introduction

20. CEN shall consider the following Work Package when preparing the Work Programme.

2.2 Work Package 2: horizontal standards complementing the existing sampling standards of construction products for the determination of content or emission of regulated dangerous substances

1. Horizontal standard¹⁵ complementing the existing sampling standards of construction products for the determination of content or emission of regulated dangerous substances

21. Since the statistical analysis of sampling is regarded as a specific area, different from the analytical procedure, a separate standard for sampling is required, which deals with the quality characteristics of sampling and the overall sampling strategy. This sampling standard deals with one of the steps of the overall measurement/test method to be standardised, which includes among others sampling, sample preparation, analysis and reporting.

¹⁵ For simplicity it has been adopted to use singular for the term ‘standard’ throughout this annex but plural will be possible or likely.

Annex 3

Technical terms of reference for the mandated measurement/test standards dedicated to the content of regulated dangerous substances in construction products

1. DESCRIPTION OF THE MANDATED WORK

1.1 Introduction

22. This annex 3¹⁶ of the mandate specifies the technical terms of reference applicable to the measurement/test standards for the content of regulated dangerous substances in construction products.

1.2 Background information to be taken into consideration by CEN

23. The current developments and experience gained in CEN regarding the horizontal approach on the development of standards in the fields relevant for the construction sector shall be taken into account. In particular consideration shall be given to the CEN horizontal standards developed and under development for the content of regulated dangerous substances in construction products. The measurement/test procedures already broadly used for materials shall be closely examined for its use in the standards to be produced for the content of regulated dangerous substances in construction products.

24. Methods should include among others

- sampling plan, sampling and transport and storage of a construction product (see annex 2 on sampling),
- test specimen preparation,
- digestion/extraction
- analysis on the regulated dangerous substances content
- overall measurement/test report

¹⁶ The general terms of reference are specified in the main text of the mandate and the annexes shall be read in conjunction with the main text of this mandate and with the other annexes. This annex expands, but does not seek to modify the statements and requirements of the main body of this mandate, which prevail on the content of this annex.

2. WORK PACKAGE 3

2.1 Introduction

25. CEN shall consider the following Work Package when preparing the Work Programme.

2.2 Work Package 3: horizontal standards: content of regulated dangerous substances in construction products

1. Horizontal standard¹⁷ on the measurement of the content of regulated dangerous substances and particles in construction products

26. This standard shall be applicable to all substances relevant in accordance with the provisions of the main body of this mandate, i.e. those included in the work programme for the emission into indoor air, surface water, ground water and soil (see annex 4 and 5)

The concrete list of substances will depend on the screening of the database (see: IV.2, IV.7, IV.8, IV.13).

¹⁷ For simplicity it has been adopted to use singular for the term ‘standard’ throughout this annex but plural will be possible or likely.

Annex 4

Technical terms of reference for the mandated measurement/test standards dedicated to the emission of regulated dangerous substances from construction products into soil, groundwater and surface water

1. DESCRIPTION OF THE MANDATED WORK

1.1. Introduction

27. This annex 4¹⁸ of the mandate specifies the technical terms of reference applicable to the measurement/test standards for the emission of regulated dangerous substances into soil, groundwater and surface water.

1.2 Background information to be taken into consideration by CEN

Emission scenarios and intended conditions of use

28. Since for a number of construction products it is not known beforehand what their use in the building will be, the intended conditions of use of products need to be defined¹⁹. The general emission scenarios shall therefore take into consideration the general intended conditions of use of the product, and the emission scenarios for specific uses of certain products shall take into consideration such specific intended conditions of use.

Measurement/test methods for generating the emission and measurement methods

29. The current developments and experience gained in CEN regarding the horizontal approach on the development of standards shall be taken into account.²⁰ Also consideration shall be given to the CEN standards developed and under development for the determination of leaching characteristics, and to the European research programmes in this field led by JRC–Ispra. The measurement/test procedures already broadly used in the environmental field shall be closely examined for its use in the standards to be produced for the measurement/test of release of regulated dangerous substances to soil, groundwater and surface water.

¹⁸ The general terms of reference are specified in the main text of the mandate and the annexes shall be read in conjunction with the main text of this mandate and with the other annexes. This annex expands, but does not seek to modify the statements and requirements of the main body of this mandate, which prevail on the content of this annex.

¹⁹ For certain products more than one set of intended conditions of use can be defined, which results in more than one emission scenario.

²⁰ In particular consideration shall be given to the overall approach and feasibility demonstrated in the indoor air example by the package of CEN horizontal standards developed for the emission of regulated dangerous substances from construction products into indoor air.

30. Methods include among others the following aspects

- sampling plan, sampling and transport and storage of a construction product (see annex 2 on sampling),
- test specimen preparation,
- generation in standardised testing facilities of the release to soil, groundwater and surface water under specified conditions reflecting the considered scenarios and intended conditions of use (see paragraph 29 above),
- measurement/test of the concentration of the emitted substance as released in such standardised testing facilities and
- overall measurement/test report with emission performance.

2. WORK PACKAGE 4

2.1 Introduction

31. CEN shall consider the following Work Package when preparing the Work Programme.

2.2 Work Package 4: horizontal standards: emission scenarios to soil, groundwater and surface water

1. Horizontal standard²¹ on the generation of the release of regulated dangerous substances from construction products into soil, surface water and groundwater in standardised testing facilities

32. This standard shall take into account the background information as described above especially in paragraph 29. When developing and validating such standard, in a first step, consideration shall be given to the different product families concerning the different matrices. In a second step, groups of potential substances: organic, inorganic, etc. (see paragraph 35) shall be considered. General conditions under which the release is generated shall be clearly specified. Particular emission conditions may be needed for specific intended conditions of use of certain product families. These standards should provide for methods applicable for routine testing and those for specific characterisation testing programmes.

2. Horizontal standard on the measurement/test of the release of regulated dangerous substances from construction products into soil, ground water and surface water as generated in the standardised testing facilities, and of relevant properties of the release.

33. These standards shall be horizontal in that they shall be – as far as practicable - either the standards applied for or applicable for the measurement of the concerned substance

²¹ For simplicity it has been adopted to use singular for the term ‘standard’ throughout this annex but plural will be possible or likely.

released into surface water, ground water and soil, or of the relevant properties of this release.

34. When preparing the work programme in accordance with the provisions of the main body of the present mandate (see IV.7), standards for the measurement/test, in the standardised testing facilities, of the emission released from the tested construction product into soil, groundwater and surface water, as well as of relevant properties of the release, shall be considered for the following substances or groups of substances:

- Heavy metals (e.g. cadmium, lead, mercury, nickel, chromium, copper, zinc, cobalt, thallium, vanadium)
- Sum parameters for organic carbon (such as TOC, DOC).
- Organic substances or groups of substances, such as benzene, phenols, PAH, PCT, PCB, polychlorinated dibenzodioxin, polychlorinated dibenzofuran, creosote, hydrocarbons, pentachlorophenol.
- Inorganic substances such as arsenic, chloride, sulphate, fluoride, cyanide, asbestos.

They shall refer to the following properties:

- Emission quantities released
- Physico-chemical properties of the release such as pH, redox potential and conductivity.
- Established ecotoxicity effects and biodegradability of released regulated dangerous substances.
- Radiation

The list of substance groups to be considered needs to be detailed depending on the screening of the database (see: IV.2, IV.7, IV.8, IV.13).

35. These standards should provide for methods applicable for routine testing and those for specific characterisation testing programmes, such as Initial Testing (IT).

Annex 5

Technical terms of reference for the mandated measurement/test standards dedicated to the emission of regulated dangerous substances from construction products into indoor air

1. DESCRIPTION OF THE MANDATED WORK

1.1 Introduction

36. This annex 5²² of the mandate specifies the technical terms of reference applicable to the measurement/test standards for the emission of regulated dangerous substances in indoor air.

1.2 Background information to be taken into consideration by CEN

Emission scenarios and intended conditions of use

37. Since for a number of construction products it is not known beforehand what their use in the building will be, the intended conditions of use of products need to be defined²³. The general emission scenarios shall therefore take into consideration the general intended conditions of use of the product and the emission scenarios for specific uses of certain products shall take into consideration such specific intended conditions of use.

Measurement/test methods for generating the emission and measurement methods

38. The current developments and experience gained in CEN regarding the horizontal approach on the development of standards shall be taken into account.²⁴ The measurement/test procedures already broadly used in the air quality field shall be closely examined for its use in the standards to be produced for the indoor air scenarios.

39. Measurement/test methods include among others a sampling plan, sampling of construction products (see annex 2 on sampling), sample preparation, generation in standardised testing facilities of the emission in indoor air under specified conditions reflecting the considered scenarios and intended conditions of use (see paragraph 38 above), measurement of the concentration of emitted substance in “Indoor Air” in such standardised testing facilities and overall measurement report with emission performance.

²² The general terms of reference are specified in the main text of the mandate and the annexes shall be read in conjunction with the main text of this mandate and with the other annexes. This annex expands, but does not seek to modify the statements and requirements of the main body of this mandate, which prevail on the content of this annex.

²³ For certain products more than one set of intended conditions of use can be defined, which results in more than one emission scenario.

²⁴ In particular consideration shall be given to the CEN horizontal standards developed for emission from construction products in indoor air further to the 1992 CEN/BT decision and to the European research programmes in this field (European Collaborative Action ECA) led by JRC–Ispra since 1990.

2. WORK PACKAGE 5

2.1 Introduction

40. CEN shall consider the following Work Package when preparing the Work Programme.

2.2 Work Package 5: horizontal standards: emission scenarios in indoor air

1. Horizontal standard²⁵ on the generation of emission from construction products into indoor air in standardised testing facilities

41. This standard shall be based on the existing CEN standardised test methods for the generation of emissions by means of test chamber, test cell, etc. When developing and validating such standard, consideration shall be given to the different families of potential substances: organic, inorganic, etc. General conditions under which the emission is generated shall be clearly specified. Particular emission conditions may be needed for specific intended conditions of use of certain product families. These standards should provide for methods applicable for routine testing and those for specific characterisation testing programmes.

2. Horizontal standards on the measurement of the emission of substances from construction products into indoor air as generated in the standardised testing facilities

42. These standards shall be horizontal in that they shall be either the standards applied for or applicable for the measurement of the concerned substance released into indoor air, or of the relevant properties of this release.

43. When preparing the work programme in accordance with the provisions of the main body of the present mandate (see IV.7), standards for the measurement/test, in the standardised testing facilities, of the quantities emitted from the tested construction product into indoor air shall be considered for the following substances or groups of substances:

- Aldehydes, phthalates, phenols, hydrocarbons, halogenated organophosphorus compounds.
- Carcinogenic, mutagenic, reprotoxic substances.
- Dangerous particles²⁶, gases and volatile organic compounds.

The list of substance groups to be considered needs to be detailed depending on the screening of the database (see: IV.2, IV.7, IV.8, IV.13).

44. These standards should provide for methods applicable for routine testing and those for specific characterisation testing programmes, such as Initial Testing (IT).

²⁵ For simplicity it has been adopted to use singular for the term ‘standard’ throughout this annex but plural will be possible or likely.

²⁶ The CPD uses the phrase ‘dangerous particles’. Dangerous fibres, such as (some types of) asbestos are dealt with in the content approach because they are banned.

3. Horizontal standard on the measurement of radiation from construction products

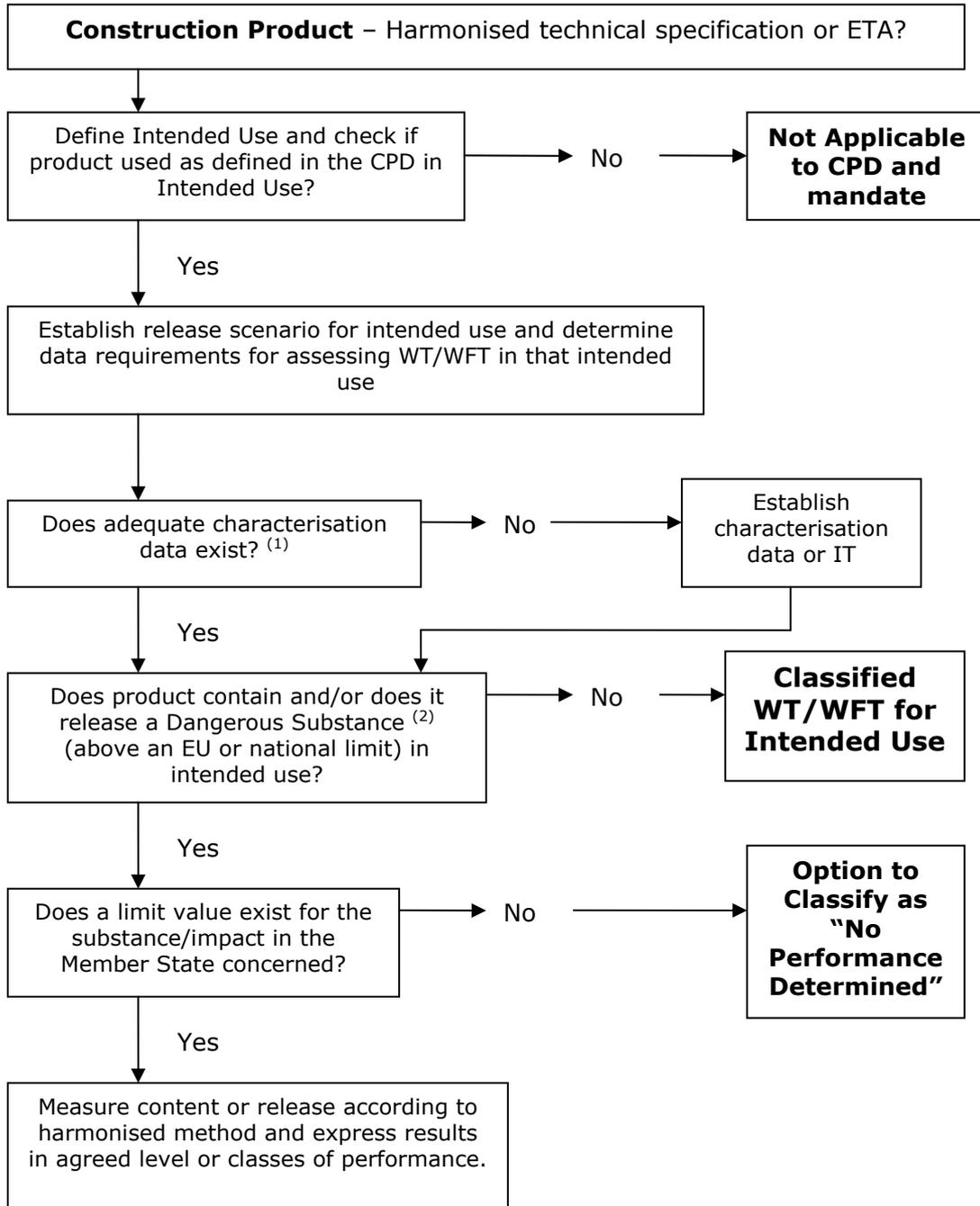
45. For the preparation of this horizontal standard Radiological Protection Principles concerning the Natural Radioactivity of Building Materials Radiation Protection shall be taken into account.

4. Horizontal standard on the indoor conditions for growth of microorganisms

46. This standard shall be based on existing standards on measurement/test methods for the conditions for growth of microorganisms. Prior to the development of the test methods a state of the art document shall describe the current developments regarding such tests. If no test methods are available, these shall not be developed under the mandate. In this case a project under the umbrella of pre- and co-normative research could be started.

Annex 6

Example: Flowchart “Without Testing/ Without Further Testing (WT/WFT)”



(1) Characterisation data may be IT, content testing, manufacturers products data or other relevant information

(2) Based on EU directives and national regulations notified by MS authorities and published on the database on dangerous substances in construction products