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CONSTRUCTION SECTOR STANDARDIZATION GUIDANCE DOCUMENT

How to draft clauses on Assessment and Verification of Constancy of Performance (AVCP) in harmonised standards for construction products

Foreword

(1) This document has been updated to take into account Regulation (EU) N° 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, as amended by the Commission delegated regulation (EU) N° 568/2014 of 18 February 2014 (OJEU of 25.5.2014) and Regulation (EU) 2019/1020 of 20 June 2019 (OJEU of 25.6.2019).

(2) This document gives the principles behind writing the clause “Assessment and Verification of Constancy of Performance (AVCP)” in the candidate harmonised standardization work.

(3) Clause 2 of this document provides the **framework** setting out the structure, for drafting and presentation of the AVCP clauses. The document gives the layout to be used by all Technical Committees when drafting, revising or amending the AVCP clauses.

(4) The numbering of paragraphs in clause 2 of this document follows the **framework** indicated in the model product standard.

The text given in square brackets using blue characters represents notes, instructions, items to be filled in or other comments, not to be included in the standard.

1. Definitions

The terms and definitions in the Regulation (EU) No. 305/2011 should be applied.

In addition to the definitions given in the Regulation (EU) No. 305/2011, the following term and definition applies for the understanding of this document:

- **Product family** means group of products produced by one manufacturer for which the assessment results for one or more characteristics from any one product within the range are valid for all other products within this range.

2. General guidance for drafting

The assignment of tasks to the notified body(ies) and the manufacturer is shown in Annex ZA, Table ZA.3

Clause 6 has been written assuming that Regulation (EU) N° 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC, as amended, applies. For those situations where this is not the case, the clauses continue to apply, with the following modifications:

- References to Annex ZA or its clauses are to be understood as references to the body of the standard;
- Clause 6.2.1, last paragraph, does not apply;
- Clauses 6.3.2, 6.3.3 and 6.3.4 do not apply; and
- In accordance with the following table, some of the terms used, shall be read with the meaning of the generally applicable term.

Term used in this document (in accordance with terms used in Regulation (EU) N° 305/2011)	Generally applicable term
Assessment and verification of constancy of performance, AVCP	Evaluation of conformity
Harmonized technical specification	European standard
AVCP system	Conformity assessment systems, e.g. those specified in EN ISO/IEC 17067
Assessment of performance	Type assessment
Constancy of the performance of the product	Conformity with this standard
Non-constancy of performance	Non-conformity with this standard
Declaration of performance	Supplier's or manufacturer's declaration

When preparing the clauses dealing with AVPC the following information should be consider. A product performance is not necessarily the same as (a) sample(s) performance, i.e. in general, it is not intended that test report results are copied into Declarations of performance (DoPs). Once the assessment specified in the harmonised technical specification has been performed, based on all the available information, verification is necessary whether those test report results correspond with the product's performance.

The manufacturer shall take full responsibility on his product, therefore provisions that shift responsibility to someone else shall be avoided (e.g. FPC cannot be deemed to be fulfilled if based on the use of supplier's declarations).

With regards to clause 6.3.1.5 'Product testing and evaluation' the following should be noted:

- For factory production control purposes test method/method of evaluation other than those in the standards (for the assessment of the characteristic performance) may be used. However, it shall be the manufacturer's responsibility to prepare suitable documentation describing such tests and their correlation with the recommended method to ensure that the appropriate characteristic is as declared.
- Referring to 'standardized' test methods assumes that production facilities are equipped with the equipment specified or that those may be used as part of the FPC system. For FPC purposes, this may not be necessary. Moreover, in most cases, product standards assume that production is continuous, whereas in some cases, this may be discontinuous and it is normal, even for continuous production that production stops over a period of time. To prevent unnecessary discussions, it may be prudent for CEN/TCs to foresee notes to this effect.

3. Framework of the clause “Assessment and Verification of Constancy of Performance (AVCP)”

The following guidance should be the basis for the relevant clauses.

6 Assessment and verification of constancy of performance - AVCP

6.1 General

The technical details necessary for the implementation of the system of assessment and verification of constancy of performance comprise provisions with regards to:

- the assessment of the performance of the construction product, which may be carried out on the basis of testing (including sampling), calculation, tabulated values or descriptive documentation of the product [remove any assessment means not specified in the harmonised standard]; and
- the applicable factory production control.

6.2 Assessment of performance

6.2.1 General

When the intention is to declare any performance related to characteristics included in Annex ZA of this standard this shall be carried out on the basis of testing (including sampling), calculation, tabulated values or descriptive documentation of the product, in accordance with Clause 'Characteristics'. [remove any assessment means not specified in the candidate harmonised standard]

Assessment previously performed in accordance with the provisions of this standard, may be considered, provided that this assessment was performed to the same or a more rigorous assessment method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

For the purposes of assessment, the products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristic for all products within that same family.

NOTE 1 Products may be grouped into different families for different characteristics.

In addition, the determination of the product performance shall be

- carried out for all characteristics included in the standard for which it is intended to declare the performance:
 - on first application of this standard, or
 - at the beginning of the production of a new or modified [insert here the name of the products as they appear in the title of the standard] , unless a member of the same product family; or

- at the beginning of a new or modified method of production ,where the modification may affect the stated properties;
- repeated for the characteristic(s) in question, whenever a change occurs in the [insert here the names of the products as they appear in the title of the standard] design, in the raw material(s) or in the supplier of the components, and/or in the method of production (subject to the definition of a family), which may affect significantly the performance in relation to one or more of the characteristics;

Where kit components are used whose performance in relation to their characteristics has already been determined on the basis of assessment methods of other harmonised technical specifications and those components bear CE marking in accordance with those harmonised technical specifications, these performances do not need to be re-assessed, if the intended use and the assessment methods of this standard correspond to previously used. The specifications of these components shall be documented.

6.2.2 Test samples, testing and assessment criteria

The samples [insert here the name of the products as it appears in the title of the standard] to be tested/assessed shall be in accordance with Table [insert the appropriate number of the table].

Table [insert the appropriate number of the table] — Number of samples to be tested and assessment criteria

Characteristic [name of the characteristic]	Clause [clause where the characteristic is given. Usually, clause 4 “Characteristics” of the standard]	Assessment method [clause where the method is given]	No. of samples [number of samples to be assessed]	Assessment criteria [clause where criteria are given. Usually they should appear in clause 4 “Characteristics” of the standard]

6.3 Verification of constancy of performance

6.3.1 Factory production control (FPC)

6.3.1.1 General

An FPC system shall be established, documented, operated and maintained to ensure that the products placed on the market comply with the declared performance in relation to the essential characteristics.

The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

All the elements and provisions shall be documented in a systematic manner in the form of written policies and procedures.

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting constancy of the performance of the product, shall be defined.

The qualification and competence (e.g. on the basis of education, training, skills, or experience) of personnel performing tasks affecting the assessment and verification of constancy of performance of the product shall be recorded.

Documents defining the factory production control system shall be drawn up and kept up-to-date. Documentation and procedures should be appropriate to the product and production process. The FPC system should achieve an appropriate level of confidence in the constancy of performance of the product. This involves:

- a) the preparation of documented procedures and instructions relating to factory production control operations, in accordance with the technical specification to which reference is made;
- b) the effective implementation of these procedures and instructions;
- c) the recording of these operations and their results;
- d) the use of these results to correct any deviations, correct the effects of such deviations, treat any resulting instances of non-constancy and, if necessary, revise the FPC system to rectify the cause of non-constancy of performance.

6.3.1.2 Equipment

6.3.1.2.1 Testing

All weighing, measuring and testing equipment shall be checked, calibrated and regularly inspected according to documented procedures, frequencies and criteria.

6.3.1.2.2 Production

All equipment used in the production process shall be regularly inspected and maintained to ensure use, wear or failure does not cause inconsistency in the production process. Inspections and maintenance shall be carried out and recorded in accordance with written procedures and the records retained for the period defined in the FPC procedures.

6.3.1.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their compliance.

6.3.1.4 Traceability and marking *[This clause may not be relevant for all standards]*

Individual *[to be indicated if products, product batches or packages]* shall be identifiable and traceable with regard to their place of their production.

Written procedures ensuring that processes related to affixing traceability codes and/or markings are inspected regularly shall be maintained.

6.3.1.5 Product testing and evaluation *[this part needs to be made specific for each EN]*

Procedures to ensure that the performance in relation to the declared characteristics are maintained shall be established. The characteristics, and the means of control, are:

- *[insert here the name of the characteristic 1]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*, at least *[insert here the envisaged frequency]*;
- *[insert here the name of the characteristic 2]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*, at least *[insert here the envisaged frequency]*;
- *[insert here the name of the characteristic 3]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*, at least *[insert here the envisaged frequency]*;
- *[insert here the name of the characteristic 4]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*, at least *[insert here the envisaged frequency]*;

6.3.2 Initial inspection of factory and of FPC *[only for products covered by AVCP 1+, 1 and 2+]*

Initial inspection of factory and of FPC shall be carried out when the production process has been finalized and in operation. The factory and FPC documentation shall be assessed to verify that the provisions of clauses 6.3.1.2 to 6.3.1.5 are fulfilled.

During the inspection it shall be verified:

- a) that all resources necessary for the assessment of the performance in relation to the product characteristics to be declared by the manufacturer are in place and correctly implemented,

and

- b) that the FPC-procedures in accordance with the FPC documentation are followed in practice.

All locations where final assembly or at least final testing of the relevant product is performed, shall be assessed to verify that the above conditions a) and b) are in place and implemented. If the FPC system covers more than one product, production line or production process, and it is verified that the general provisions are fulfilled when assessing one product, production line or production process, the assessment of the general provisions does not need to be repeated when assessing the FPC for another product, production line or production process.

All assessments and their results shall be documented in the initial inspection report.

6.3.3 Continuous surveillance of FPC *[only for products covered by AVCP system 1+, 1 and 2+]*

Surveillance of the FPC shall be undertaken at least *[insert here the frequency]* per year. The surveillance of the FPC shall include a review of the FPC test plan(s) and production processes(s) for each product to determine if any changes have been made since the last assessment or surveillance. The significance of any changes shall be assessed.

Checks shall be made to ensure that the test plans are still correctly implemented and that the production equipment is still correctly maintained, checked and, if necessary calibrated at appropriate time intervals.

Where relevant, the records of tests and measurement made during the production process and to finished products shall be reviewed to ensure that the values obtained still correspond with those values for the samples submitted to the determination of the product-type and that the correct actions have been taken for removing non-compliance.

6.3.4 Audit-testing of samples *[only for products covered by AVCP system 1+]*

Audit samples shall be taken to check conformity with the declared performance.

Samples shall be selected at random for the products in question.

Audit testing shall be conducted for the following characteristics, insofar that performance is being declared *[this may be presented in tabular format, indicating – as relevant – the number of samples necessary to obtain an audit test result]*:

- *[insert here the name of the characteristic 1]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*;
- *[insert here the name of the characteristic 2]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*;
- *[insert here the name of the characteristic 3]*: shall be subject to the tests indicated in clause *[insert here the relevant clause number]*;