

European Standardisation

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Objective

To give an overview of the ongoing activities being undertaken to achieve a single EU Market for construction products, with special emphasis on the preparation of European Standards (EN Standards) for timber and related products.

Summary

There are several ongoing activities in Europe to improve the free trade of construction products within Europe. In EU Member States the "Construction Products Directive" is the legal framework for these activities and so its most significant aspects are briefly described. The standardisation work concerning timber and related products being carried on within the scope of the European Committee for Standardization (CEN) is described, with reference to the work programme of CEN/Technical Committees dealing with these products. Special reference to EC5 is also made.

Construction Products Directive

The "Council Directive" of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products" (Directive 89/106/EEC) - currently named Construction Products Directive (CPD) - is one of the EU Directives published according to the principles of the New Approach - established by the Council resolution of 7 May 1985 - and, as other Directives based on those principles, is intended to create and set up the rules of the European Internal Market.

The CPD has been amended by the Council Directive 93/68/EEC of 22 July 1993 and Regulation (EC) No 1882/2003 of the [European Parliament](#) and of the Council of 29 September 2003. The directive was repealed and replaced by [Regulation \(EU\) No 305/2011](#) on 9 March 2011. Then on 27 November 2024 [Regulation \(EU\) 2024/3110](#) was passed laying down harmonised rules for the marketing of construction products and repealing Regulation (EU) No 305/2011.

Within the scope of this Directive and its associated Regulations (CPR), the term "construction product" (abbreviated to "product" in its text and often in this article) means "any product which is produced to be incorporated in a permanent manner in construction works, including both buildings and civil engineering works". Some aspects of the CPD and CPR are now emphasized.

Interpretative Documents

The EU Directives of the New Approach lay down the essential requirements applicable to the products covered by them, addressing them by technical specifications the definition of the requirements that apply to the products' characteristics.

The CPD differs, however, from other Directives because the essential requirements established in it refer not to the construction products but to the construction works. This is due to the fact that these types of product can only perform the functions that they were produced for when they are incorporated in the construction works.

The essential requirements for the construction works set up in the CPD are six, as follows:-

mechanical resistance and stability;

- safety in case of fire;
- hygiene, health and the environment;
- safety in use;
- protection against noise;
- energy economy and heat retention.

In order to establish the connection between these essential requirements and the technical specifications related to the products, six Interpretative Documents were published by the Commission of the European Communities, now the European Commission (EC) as the executive cabinet of the European Union (EU).

Communication 94/C 62/01 - each of them referring to one of the essential requirements listed.

Technical specifications within the scope of the Construction Products Directive

The CPD lays down that, in order to be placed on the market, the products shall be fit for their intended use, that is, they shall have such characteristics that the construction works, in which they will be incorporated, can satisfy the applicable essential requirements. The CPD also establishes that the EU Member States shall presume that the construction products are fit for their intended use if they bear the CE marking.

The CE marking is not a quality mark; it demonstrates only that products meet the legal requirements necessary for them to be placed on the market by complying with the applicable technical specifications, which can be of three types:

- national standards transposing harmonized standards, i.e., standards prepared by the European Committee for Standardization (CEN) or by the European Committee for Electrotechnical Standardization (CENELEC), on the basis of mandates given by CEC;
- European technical approvals;
- national technical specifications accepted by the CEC, where harmonized standards do not exist.

The first two types of technical specification will be the normal methods used to obtain the CE marking and further details are given below.

The Members of CEN are the thirty three National Standardisation Bodies of EU and EFTA Member States. In order to respond to the request included in the CPD, for the existence of harmonized European standards, more than sixty CEN Technical Committees are currently dealing with around 2000 work items (corresponding to EN Standards or Parts of EN Standards to be drafted) in the area of building and civil engineering. The standardisation work concerning timber and related products will be summarized later in this article.

It is outside the scope of this article to give details about the procedures followed to prepare and approve an EN Standard. It is, however, important to state that when a CEN Member adopts an EN Standard, this will acquire the status of a national standard and the national standard(s) covering the same subject shall be withdrawn.

The European technical approval (ETA) is a favourable technical assessment of the fitness for use of a construction product, based on the fulfilment of the essential requirements of the construction work where the products are incorporated. The ETAs are basically applicable to those products for which there is neither a harmonized standard, nor a mandate from the CEC for the production of one covering those products. So, this type of technical specification is reserved for innovative products and corresponds to an extension, to a European scale, of the national Agrément Certificates currently issued in different countries.

European technical approvals are issued by approval bodies designated by the EU Member States which are presently associated to the "European Organization for Technical Approvals" (EOTA), that coordinates these activities, and will ensure that common rules will be followed by the different bodies, when issuing ETAs.

Attestation of conformity

In order to receive the CE marking that allows for the presumption that they are fit for use and can be marketed; construction products have to be subjected to some procedures of attestation of conformity with the applicable technical specifications.

The CPD recognised four levels of attestation of conformity, ranging from a manufacturer's declaration to a system involving independent certification supported by independent testing. This issue is currently under active discussion and revision. However, it should be noted that in all cases there is the assumption of a permanent internal control system for production, processing, etc. exercised by the manufacturer. Sometimes referred to as the factory production control system.

The choice of the procedure for attestation of conformity to be used for a certain product (or a family of products) is made by the CEC and it will take into account a number of factors, namely, the importance of the product with respect to the essential requirements and the variability of the product characteristics; in each case, the least onerous method possible shall be chosen.

The approved bodies necessary for the implementation of the procedures of attestation of conformity are of three types: certification bodies, inspection bodies and testing laboratories. These bodies shall be designated by the EU Member States and they must fulfil certain criteria concerning technical competence, responsibility and impartiality, as set out in the European Standards of the EN 45000 series.

The major role that attestation of conformity plays in this coherent set of procedures established in the CPD should be emphasized. In fact, a poor system for monitoring the correct use of the CE marking could lead to it rapidly being discredited.

European Standards for timber and related products

Among the different CEN Technical Committees charged with producing European Standards (EN Standards), some are dealing only with timber and related products.

These Technical Committees are:

- CEN/TC 38 Durability of wood and wood-based products
- CEN/TC 112 Wood-based panels
- CEN/TC 124 Timber structures
- CEN/TC 175 Round and sawn timber

In recent times a Timber Coordination Group has been introduced, as the name suggests, to coordinate the activities and approaches of the group that now includes representatives from CEN TC 250 SC5 who are responsible for the production and maintenance of EN 1995 Design of Timber Structures.

Further, and with special relevance to this article, is, obviously, the work of CEN/TC 250 - "Structural Eurocodes", are responsible for the entire suite of Structural design Eurocodes, with EN 1995 concerning the design of timber structures will be described later.

The former CEN/TC 103 - "Adhesives for wood and derived timber products" has been incorporated into CEN/TC 193 - "Adhesives" although TC 103 had already produced two EN Standards concerning phenolic and aminoplastic adhesives for timber structures.

Other Technical Committees, besides these, are partly related to timber, as they set out test methods and requirements that will apply to construction products often made from timber and wood-based panels.

Examples of these Technical Committees are:

- CEN/TC 33 - "Doors, windows, shutters, building hardware and curtain walling";
- CEN/TC 53 - "Scaffolds, falsework and mobile access towers";
- CEN/TC 127 - "Fire safety in building";
- CEN/TC 139 - "Paints and varnishes";
- CEN/TC 217 - "Surfaces for sport areas";
- CEN/TC 261 - "Packaging";
- CEN/TC 277 - "Suspended ceilings";
- CEN/TC 284 - "Greenhouses".

Apart from the work on the EC5, the major interest for timber structures is focused on the EN Standards that are being produced and maintained by CEN/TC 38, CEN/TC 112 and CEN/TC 124. The programme of work of these three TCs was established taking into account the need for supporting EN Standards for Eurocode 5. Briefly, the activity of these Technical Committees is now referred to.

CEN/TC 38 is the oldest, was created prior to the publication of the CPD and, in former times, produced EN Standards concerning test methods for preservative products. The work was greatly enlarged and accelerated and a coherent set of new EN Standards concerning this subject has been produced and is being maintained (see STEP article A15).

CEN/TC 112 currently has a work programme that includes approximately 80 items covering particleboards, oriented strand boards, fibreboards, plywood, cement bonded particleboards, together with general test methods and formaldehyde emission.

CEN/TC 124 was created in 1987 and the work programme involves around 40 items dealing with solid timber, glued laminated timber, connectors and test methods, which are obviously closely related to Eurocode 5.

Finally, some words about the work concerning EC5. CEN/TC 250 - "Structural Eurocodes" was created in 1990 and took over the previous work, that had been started around 1977 under the auspices of the CEC, of drafting a system of European structural design codes: the Eurocodes. Sub-committee 5 of TC 250 (CEN/TC 250/SC5) is in charge of EC5 and established a work programme that anticipated the publication of three documents. The first, for general application, was published in 1993; it is referenced as ENV 1995-1-1: 1993 - "Eurocode No.5 Design of timber structures. Part 1.1: General rules and rules for buildings". The second, ENV 1995-1-2 - "Eurocode No.5 - Design of timber structures. Part 1-2: Structural fire design" has been finalized.

Drafting of the third document, dealing with bridges, has been started. In common with Eurocodes dealing with other materials, Eurocode 5 was published as an ENV, i.e., as a European Prestandard. This means that - as opposed to the status of an EN Standard - existing conflicting national standards may be kept in force (in parallel with the ENV) until the final decision about the conversion of the ENV into a EN was reached. In order to implement these ENVs, Member States were expected to publish National Application Documents (NADs), namely to assign certain safety levels that were set out as indicative levels in the ENVs.

The first generation Eurocode for timber was published and came into force during 2004 as EN 1995. All National Standards covering the same subjects were superseded by the set of three volumes: -

EN 1995-1-1:2004	Eurocode 5: Design of timber structures - Part 1-1: General - Common rules and rules for buildings
EN 1995-1-2:2004	Eurocode 5: Design of timber structures - Part 1-2: General - Structural fire design
EN 1995-2:2004	Eurocode 5: Design of timber structures - Part 2: Bridges

EN Eurocode 5 was intended to be used in conjunction with:

- EN 1990: Eurocode - Basis of structural design;
- EN 1991: Eurocode 1 - Actions on structures;
- hENs, ETAGs and ETAs: for construction products relevant to timber structures;
- EN 1998: Eurocode 8 - Design of structures for earthquake resistance, when timber structures are built in seismic regions.

Second Generation

The second generation of the Eurocodes will be available for use early in 2027 and the planned date of application is early in 2028, when revised Eurocodes will be in use to supersede the current version.

The main changes compared to the previous edition are listed below:

- inclusions of main timber products, e.g. cross laminated timber (CLT);
- inclusion of product groups with similar material behaviour;
- inclusion of material parameters needed for the design according to this document;
- improved guidance on durability;
- inclusion of provisions on holes in beams;

- extension of compression perpendicular to grain verifications to serviceability limit state design;
- inclusion of provisions on reinforcements;
- improved guidance on vibration verification;
- inclusion on guidance on fatigue verification;
- inclusion of provisions on carpentry connections;
- inclusion of provisions on bonded-in rods;
- inclusion of provisions on foundations with timber piles;
- improved provisions on robustness.