Trade with construction products in the enlarged market

EN Eurocodes and product Technical Specifications: the need for a consistent system

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The Construction Products Directive (CPD)

- Directive 89/106/EEC of 21 December 1988
- Obligation to affix *CE marking* on Construction Products
- In counter part, (theoretically) ***free access and use*** of construction products everywhere in Europe
  - without any barrier
  - Without any additional requirement or additional test on the product)
- Many products, including all structural product are already or will be CE marked (300 hENs on 550 already published)

Free access and free use

- All the product manufactured every where in Europe should be free to be proposed to the contractor for a specific use in a specific work
- But all the CE market product are not necessarily fit for all the intended uses
- CE marked products:
  - Should be free to be used if and when they meet the needs of the designer of work
  - May be used in a specific work if they comply with the minimum quality level required in the regulations (national, local) if and when such a regulation exists

CE marking under CPD

- Obligation to *declare the performances* of the product which are assessed using the *European technical vocabulary* defined in the Technical Specifications
- Technical specifications:
  - harmonised standards (hENs) elaborated on the base of a mandate from the Commission for a family of products
  - or European Technical Approval (ETAs) individually issued for a specific product on the request of a specific producer

European Technical Vocabulary

- *List of characteristics* which have to be assessed predefined in hENs/ETAs (mandated characteristics)
- *Technical definition* of characteristics provided in hENs / ETAs
- *Assessment/test methods* provided in hENs/ETAs (one assessment method and only one for each characteristic)
- Requirements on the *Initial Type Testing* (ITT) procedure
- Requirements on *Factory Production Control* (FPC), initial audit and continues surveillance of FPC

- *The performances declared by the manufacturers are (should be) complete/sufficient for the user and reliable (guarantied by the conformity assessment included in CE marking specifications)*

The user of CE marking on Construction Products

- **Contractor and designer**. They choose among the CE marked products those which are fit for the intended use in the specific work concerned (requirements in the call for tender and then in the contractual documents)
- **National authorities in charge of regulations on the works**. They fix minimum quality levels required on products used in specific works (building open to the public, high-rise buildings)
- **Surveillance authorities** in charge of market surveillance

The use of the declared performances of the product

- *The user* (mainly *designer* of a work):
  - Should express the specifications and requirements on products to be used in his design using the European Technical vocabulary provided in hENs/ETAs
  - fix/choose the minimum level of performance required, for all the characteristics bringing to bear, taking into consideration the function of the product in the work he designs,
  - Knowing the technical definition of the characteristic and the assessment method used, he understands the meaning of the performance value declared in the CE marking, and knows how to deal with a specific product in the work

Note: Choosing the minimum level of performance require, the designer assume the *responsibility of safety* (stability of the work)

An ideal situation

- It should be possible to ***use the performance values*** of the products ***declared in the CE marking*** as ***input for the calculations*** using Eurocodes, to design structures
- Therefore, *"taking into account the intended uses of the products, the technical specifications (hENs/ETAs) on products should ensure* ***coherence*** *and* ***compatibility*** *with the set of the Eurocodes standards"* (mandate M115 steel for concrete)

Coherence and compatibility

- hENs/ETAs:
  - should provide ***all the performances*** of the products which are useful/necessary to perform calculations using Eurocodes to design a specific work
  - The ***definition of the characteristics*** considered to assess the performances of the products in CE marking should be defined in a manner allowing a direct use in Eurocodes
  - The assessment ***(test) methods*** to determine the performances of the products should be known and agreed/recognised by the designers

Coherence and compatibility

- A correction should be possible (partial safety factors) to adjust the product performances values provided with the CE marking to a specific condition of use in a specific work
  - when the conditions to assess the performances are diverging from the real final use
  - When a National authority or an owner of work wants to apply a specific policy (maintenance, safety, …)

A consistent system

- The *products Technical Specifications* (hENs/ETAs) and EN-Eurocodes should form a consistent system:
  - hENs/ETAS should provide all the necessary performance values on the products, needed to use EN Eurocodes for the design of works,
  - The declared performance values of the products should be assessed and expressed in terms compatibles with the definitions included in EN Eurocodes

A consistent system

- EN Eurocodes should :
  - Take into consideration the performance values provided in the CE marking on products (all their needs should be covered in TS)
  - Consider the technical definitions and test methods used to assess the performances of the product, without requesting other or additional assessments,
  - Be able to provide application rules to use the products for specific works or types of works (including the requirement of minimum quality levels)
  - Provide the rules to adjust the declared values of performance to use the product in specific works (partial safety factors)

More information

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Thank you for your attention