

Professional paper

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**CONSTRUCTION PRODUCT REGULATION (CPR 305/2011) AND IMPLEMENTATION
OF THE HARMONIZED STANDARDS IN THE FIELD OF WOOD-BASED PANELS
IN THE REPUBLIC OF MACEDONIA**

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ABSTRACT

The European Parliament and Council, on 9th of May 2011 adopted the Construction Products Regulation – CPR 305/2011, which is mandatory and directly applicable in all member countries of the European Union from 1st of July 2013, while they cancelled the Construction Products Directive number 89/106/EEC. The existence of an unequal treatment in the market of construction products in the EU member countries, as well as the need of introduction of equal treatment of the Declaration of performance and the principle of the system for evaluation and verification of consistency of the performance of construction products, were the main reasons for adoption of the new Regulation.

The authors wish to point out that application of the harmonized standards and the reference to them is the easiest and simplest way to guarantee product conformity with the basic requirements of the relevant Directive/Regulation. The manufacturers are recommended to apply the harmonized standards, although they are not obligatory.

Key words: regulative, system for evaluation, statement for properties, harmonized standards, wood-based panels, particleboards, fiberboards

1. INTRODUCTION

Construction, being a complex activity, includes services and processes (from design to performance), as well as installation of finished products, where the final result is a product that in every way should meet the projected quality, reliability and requirements of the end user. Strategically, construction is one of the most important industries, as it provides facilities and infrastructure for all other economic and social categories. The development of EU legislation in the field of construction is a permanent process, and tools to achieve quality policy in this area are quite complex and somewhat different compared to the others. The removal of technical barriers to trade in the field of construction products is in order to increase their free movement on the internal market of the European Union.

The existence of unequal treatment in the market of construction products in the European Union countries, as well as the need of introduction of equal treatment of the Declaration of performance and the principle of the system for evaluation and verification of consistency of the performance of construction products, were the main reasons for adoption of the new Regulation 305/2011 for construction products (Construction Products Regulation – CPR).

2. WHAT DOES THE NEW REGULATION, I.E. THE LAW ON CONSTRUCTION PRODUCTS REGULATE?

The rules in this Regulation directly affect the requirements for construction products. These requirements gradually are reflected in the national product standards, national technical approvals and technical specifications related to construction products. These rules do not only refer to the security of buildings and construction works, but also to health, durability, energy saving and environmental protection.

The Regulation refers to construction products, or set of products that are incorporated in the building or in some parts of the building in permanent manner, where the products properties affect the performance of the building with respect to the basic requirements for buildings (Basic Requirements for Construction Works). Permanent incorporation means that removal of the product from the building would reduce its reliability, and removal of the product would be construction activity.

In the Republic of Macedonia Regulation 305/2011 has been transposed into a Law on construction products, published in the Official Gazette of the Republic of Macedonia No. 104 from 24th of June 2015. Several Acts are yet to be drawn up and adopted, which will follow from this Law. With these documents, Regulation 305/2011 will be fully transposed, and it will replace the existing Law on Construction Products in the Republic of Macedonia from 2006, as well as its bylaws.

One of the novelties in this Law applies to the basic requirements for construction buildings. The basic requirements for construction works that must be met during their economically reasonable exploitation period are:

1. Mechanical resistance and stability;
2. Safety in the case of fire;
3. Hygiene, health and environment;
4. Safety and accessibility in use;
5. Protection against noise;
6. Energy economy and heat retention;
7. Sustainable use of natural resources.

The difference is only in the seventh requirement which was not contained in the Directive.

The construction works must be designed, built and destroyed in such a way that the use of natural resources will be sustainable and will ensure the following:

- reuse or recycling of construction works, their materials and parts after destruction;
- durability of construction works;
- use of raw materials and secondary materials in construction works that are environment friendly.

Various products differently contribute to the safety of the building, some of them being more important (for example: load-bearing elements, roofs, fire-rated doors), while others are not so important (internal doors, coated panels, etc.). CPR provides five different systems for evaluation and verification of the constancy of the properties of the construction products (Assessment and Verification of Constancy of Performance – AVCP). All systems are combination of the tasks that are performed by the manufacturer and by the notified body. The AVCP system gives a clear separation between certification of factory production control (FPC) and product certification, as opposed to the former system of “Assessment of Conformity – AoC”.

Also, the Law shall regulate the requirements for nominating the bodies, the procedure for nomination, liabilities of the notified bodies, liabilities and requirements for nomination of technical assessment bodies, working conditions and procedures of the notified bodies for implementation of this Law and other issues important for placing the construction products on the market.

The Law will regulate the incompatible areas and oversights of the Law implementation, market surveillance and control and inspection surveillance in the field of construction products.

The Law directions regulate the basic requirements that buildings must meet. This means that construction products must meet the essential characteristics to suit their function in order to enable the construction works to meet the basic requirements.

The basic requirements for construction works constitute the basis for preparation of standardization mandates and harmonized technical specifications (harmonized standards – hEN and European Technical Assessment – ETA).

The Regulation has much more detailed requirements in the document “Declaration of Performance”. After performing all the prescribed procedures, the manufacturer must himself prepare a “Declaration of Performance”, related to the essential characteristics of the construction product, which complies with the relevant harmonized technical specification for the product placement on the market. The new form of the sample requires more information, which improves the identification of the relevant product and manufacturer. The properties should be quoted in the declaration, and the form and content of the declaration are prescribed in the Act of the European Commission number 574/2014.

Related to the “CE” mark, the general principles governing the use of “CE” marking and rules and conditions for the “CE” marking are regulated. The responsibilities of the economic operators (manufacturer, authorized representative, importer and distributor) are strictly defined. The cases in which responsibilities of the manufacturers apply to importers and distributors are specifically regulated.

Furthermore, the Law regulates the principles of drafting and adopting the “European Assessment Document” – EAD) and its content. This applies to every construction product that is not covered or not fully covered by a harmonized standard, and whose properties for its basic characteristics cannot be fully assessed by the harmonized standard. In that case, on request of the manufacturer, a “Technical Assessment Body” (TAB) draws up and adopts a “European Assessment Document” (EAD). Further on, based on the “European Assessment Document” (EAD), on request of the manufacturer, a “European Technical Assessment” (European Technical Assessment – ETA) is issued by TAB, established in accordance with the procedures laid down in the directions of this Law and the Regulation for establishing procedures for adoption of European Assessment Document.

The Law contains provisions related to nomination of the bodies involved in the process of conformity assessment, which will be authorized to carry out third party tasks in the process of assessment and verification of constancy of properties under this Law. For their nomination, the Ministry of Economy will be authorized, which will inform the Commission of the designated bodies. The process of transposition of the Regulation in the Republic of Macedonia is obligation of the Ministry of Economy. The Standardization Institute of the Republic of Macedonia – ISRM has to adopt all European harmonized standards as national Macedonian standards. At request of the Ministry of Economy, ISRM shall submit a list of adopted harmonized standards to the Ministry, and the Ministry shall publish it in the Official Gazette of the Republic of Macedonia. However, the authorities in charge and the business entities have yet many activities to accomplish before implementing this Law.

3. IMPLEMENTATION OF HARMONIZED STANDARDS IN THE FIELD OF WOOD-BASED PANELS

According to the FAO, the term “wood-based panel” is an aggregate comprising plywood, particleboard, fiberboard, panel from wood wool and other lignocellulosic materials as: bark, cork, flax and hemp residues etc., i.e. for factory produced panel.

Harmonized standards (hEN) are European standards developed by the European Standardization Bodies under mandate by the European Commission and/or the European Free Trade Association (EFTA). All stakeholders are involved in the process and the development of harmonized standards by European Standardization Bodies (ESO). ESO ensure that various categories of stakeholders are involved in all levels of preparation of harmonized standards in a fair manner. Harmonized standards shall provide the methods and criteria for assessment of the performance of products in relation to their essential features. The European Commission published the harmonized standard in the Official Journal of the European Union (OJEU). With the publication of the standard in the Official Journal of the European Union, the date of commencement and completion of coexistence is published, to which Member States are obligated to adopt the European standards at national level and to withdraw the conflicting national standards. The harmonized standards support the essential requirements of the Directive / Regulation of the “new approach”.

The harmonized standards in the area of wood-based panels are prepared in the European Technical Committee CEN TC 112.

What is common among all examples of harmonized standards is that all of them comprise the general requirements that products should meet, which refer to the characteristics, conformity assessment and products marking.

Part of the harmonized standards from this committee in the area of wood-based panels is given in table 1.

Table 1. Standards for wood-based panels

European technical committee (TC)	Name of TC	Regulation	Standards for wood-based panels	Area
CEN TC 112	Wood-based panels	Regulation 305/2011/EEC – Construction Products	MKC EN 120:2011 MKC EN 310:2011 MKC EN 311:2011 MKC EN 318:2011 MKC EN 321:2011 MKC EN 322:2011 MKC EN 323:2011 MKC EN 324-1:2011 MKC EN 324-2:2011 MKC EN 325:2012 MKC EN 326-1:2011 MKC EN 326-2:2011 MKC EN 326-3:2011 MKC EN 717-1:2011 MKC EN 717-2:2011 MKC EN 717-2:2011/AC:2011 MKC EN 717-3:2011 MKC EN 1058:2011 MKC EN 1156:2013 MKC EN 12369-1:2011 MKC EN 12369-2:2012 MKC EN 12369-3:2011 MKC EN 12871:2013 MKTC CEN/TS 12872:2011 MKC EN 13446:2011 MKC EN 13810-1:2011 MKTC CEN/TS 13810-2:2011 MKC EN 13879:2011 MKC EN 13986:2006 MKC EN 14322:2011 MKC EN 14323:2011 MKC EN 14354:2011 MKC EN 14354:2011/AC:2011 MKTC CEN/TS 14966:2011 MKC EN 15197:2011	Wood-based panels

The crucial harmonized standard in this area is standard: MKC EN 13986:2006 (EN 13986:2010): Wood-based Panels for Use in Construction – Characteristics, Evaluation of Conformity and Marking.

Harmonized standards in the area of wood-based panels prepared by the Standardization Institute of the Republic of Macedonia are the following:

- MKC EN 120:2011: Wood based panels - Determination of formaldehyde content - Extraction method called the perforator method;

- MKC EN 310:2011: Wood-based panels - Determination of modulus of elasticity in bending and of bending strength;
- MKC EN 311:2011: Wood-based panels - Surface soundness - Test method;
- MKC EN 318:2011: Wood based panels - Determination of dimensional changes associated with changes in relative humidity;
- MKC EN 321:2011: Wood-based panels - Determination of moisture resistance under cyclic test conditions;
- MKC EN 322:2011: Wood-based panels - Determination of moisture content;
- MKC EN 323:2011: Wood-based panels - Determination of density;
- MKC EN 324-1:2011: Wood-based panels - Determination of dimensions of boards - Part 1: Determination of thickness, width and length;
- MKC EN 324-2:2011: Wood-based panels - Determination of dimensions of boards - Part 2: Determination of squareness and edge straightness;
- MKC EN 325:2012: Wood-based panels - Determination of dimensions of test pieces;
- MKC EN 326-1:2011: Wood-based panels - Sampling, cutting and inspection - Part 1: Sampling and cutting of test pieces and expression of test results;
- MKC EN 326-2:2011: Wood-based panels - Sampling, cutting and inspection - Part 2: Initial type testing and factory production control;
- MKC EN 326-3:2011: Wood-based panels - Sampling, cutting and inspection - Part 3: Inspection of an isolated lot of panels;
- MKC EN 717-1:2011: Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method;
- MKC EN 717-2:2011: Wood-based panels - Determination of formaldehyde release - Part 2: Formaldehyde release by the gas analysis method;
- MKC EN 717-2:2011/AC:2011: Wood-based panels - Determination of formaldehyde release - Part 2: Formaldehyde release by the gas analysis method - Corrigendum;
- MKC EN 717-3:2011: Wood-based panels - Determination of formaldehyde release - Part 3: Formaldehyde release by the flask method;
- MKC EN 1058:2011: Wood-based panels - Determination of characteristic 5-percentile values and characteristic mean values;
- MKC EN 1156:2013: Wood-based panels - Determination of duration of load and creep factors;
- MKC EN 12369-1:2011: Wood-based panels - Characteristic values for structural design - Part 1: OSB, particleboards and fiberboards;
- MKC EN 12369-2:2011: Wood-based panels - Characteristic values for structural design - Part 2: Plywood;
- MKC EN 12369-3:2011: Wood-based panels - Characteristic values for structural design - Part 3: Solid-wood panels;
- MKC EN 12871:2013: Wood-based panels - Determination of performance characteristics for load bearing panels for use in floors, roofs and walls;
- MKTC CEN/TS 12872:2011: Wood-based panels - Guidance on the use of load-bearing boards in floors, walls and roofs;
- MKC EN 13446:2011: Wood-based panels - Determination of withdrawal capacity of fasteners;
- MKC EN 13810-1:2011: Wood-based panels - Floating floors - Part 1: Performance specifications and requirements;
- MKTC CEN/TS 13810-2:2011: Wood-based panels - Floating floors - Part 2: Test methods;
- MKC EN 13879:2011: Wood-based panels - Determination of edgewise bending properties;
- MKC EN 13986:2006: Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking;

- MKC EN 14322:2011: Wood-based panels - Melamine faced boards for interior uses - Definition, requirements and classification;
- MKC EN 14323:2011: Wood-based panels - Melamine faced boards for interior uses - Test methods;
- MKC EN 14354:2011: Wood-based panels - Wood veneer floor covering;
- MKC EN 14354:2011/AC:2011: Wood-based panels - Wood veneer floor covering;
- MKTC CEN/TS 14966:2011: Wood-based panels - Small scale indicative test methods for certain mechanical properties;
- MKC EN 15197:2011: Wood-based panels - Flaxboards - Specifications.

All above mentioned about the standards for wood-based panels emphasizes the importance of applying the standards by economic entities dealing with this issue in the Republic of Macedonia. Application of these standards guarantees quality product, elimination of the defects in production of these materials, and thus higher economic performance of the companies.

Although application of these standards is not mandatory, referring to them is the easiest and simplest way to guarantee the product conformity with the essential requirements of the relevant Directive / Regulation. Manufacturers are recommended to apply the harmonized standards in order to ease the way of obtaining the CE mark of the product.

4. CONCLUSION

By expression of the above standards, the authors want to point out that application of the harmonized standards and referring to them is the easiest and simplest way to guarantee product conformity with the essential requirements of the relevant Directive / Regulation. Manufacturers are recommended to apply the harmonized standards, although they are not mandatory.

Therefore, a manufacturer may choose whether to invoke the harmonized standards or not. If a manufacturer decides not to refer to the harmonized standards, in order to provide evidence for the compliance of the product with the relevant Directives / Regulations, he has an obligation to prove that his product complies with the essential requirements using other means of his choice at his own expenses. If the manufacturer applies only a part of the harmonized standard, or the harmonized standard applied does not cover all the basic requirements, then the manufacturer must ensure compliance with other basic requirements in some other way(s). In such cases, reference to the harmonized standard does not provide presumption of conformity.

Standards are a tool when the product is tested and certified, shaped, and not only when the product is in question, but also when it comes to technological or manufacturing systems, or systems for providing services. Importance of standardization grows with the growth of the global market and with the increased choice of products and services.

REFERENCES

- [1] Official Journal of the European Union (4.4.2011): Regulation (EU) No 305/2011 of European Parliament and of the Council of 9. March 2011.
- [2] BSI (December 2012): Guidance Note on the Construction Products Regulation.
- [3] EU Commission (September 2002). Guidance Paper B, The definition of Factory Production Control in Technical Specification for Construction products.
- [4] EU Commission (27. May 2004): Guidance Paper D, CE Marking under the Construction Products Directive.
- [5] EU Commission (4. May 2005): Guidance Paper M, Conformity Assessment under CPD: Initial type-testing and Factory production control.
- [6] MKC EN 13986:2006: Плочи на основа на дрво кои се употребуваат во градежништвото – Карактеристики, оценка на сообразност и означување (Wood-based Panels for Use in Construction – Characteristics, Evaluation of Conformity and Marking).