



FEM

European Materials Handling Federation
www.fem-eur.com

Product Group /
Cranes & Lifting equipment
subgroup Electric Overhead Traveling Cranes



02.12.2014

N 0075

Guideline

CE-Declaration - Crane systems
connected in Buildings or free standing
supporting structures

Legal Note:

“This paper should serve only as a reference and overview: it is meant to provide guidance to carry out the conformity assessment procedure. It neither addresses each and every imaginable scenario, nor is it a binding interpretation of the existing legal framework. It does not and cannot replace the study of the relevant directives, laws and regulations. In addition, the specific features of different products and their various applications have to be taken into account (see related operating instructions of the equipment used). This is why the assessments and procedures referred to in this paper may be impacted by a large variety of circumstances.”

Introduction

FEM was created in 1953, the European Materials Handling Federation (www.fem-eur.com) represents, defends and promotes European manufacturers of materials handling, lifting and storage equipment including cranes and lifting equipment and in particular Lifting Equipment (EOT) and Hoisting Equipment.

The purpose of this Guideline is to provide assistance regarding the interpretation of the principles of the Machinery Directive 2006/42/EC vs. Construction Products Regulation (CPR) and is a guidance to their application of cranes built into to a building (construction work), e.g. bridge- and gantry cranes, light crane systems, monorail cranes etc..

Background information

Overhead Traveling Cranes, e.g. Bridge- and Gantry Cranes, Light Crane Systems, Monorail Systems which are designed for placing on the market in Europe have to comply with all relevant European laws and regulations, in particular the legislation for CE Marking. The EU market contains the European Economic Area (EEA), Switzerland and Turkey. As a consequence, Cranes and Lifting Equipment generally has to be compliant with the Machinery Directive 2006/42/EC¹. A list of harmonised standards (hEN) in the field of Cranes and Lifting Equipment with regards to the Machinery Directive 2006/42/EC is available on the website: European Commission - Enterprise and Industry².

There are different types of steel supporting structures for cranes on the European market today.

Cranes are covered by different legislations:

In practice, the questions often arise as to which laws and regulations cover and apply to cranes and lifting equipment. Among other regulations, cranes and lifting equipment is included in the scope of the Machinery Directive 2006/42/EC.

Furthermore, Article 2(1) of the Construction Products Regulation (CPR) and Regulation 305/2011³) establishes harmonised conditions for the marketing of construction products. It does so by establishing harmonised rules on how to express the performance of construction products in relation to their essential characteristics and on the use of CE marking on these products. The following terms are used according to CPR:

¹ http://ec.europa.eu/enterprise/sectors/mechanical/machinery/index_en.htm

² http://ec.europa.eu/enterprise/policies/european-standards/harmonised-standards/machinery/index_en.htm

³ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:088:0005:0043:EN:PDF>

- **Construction works** are defined as buildings and civil engineering works. The definition is large enough to include all types of “construction works” in which relevant materials handling equipment, e.g. electrical overhead traveling cranes (EOT), such as light crane systems, are fixed to the building or are fixed to free standing supporting structures (e.g. outdoor applications). This is usually found in: warehouses, factory workshops, distribution centres, airports...
- **“Incorporated in a permanent manner”** means that it is not the equipment’s purpose to be temporarily incorporated into the building.

The European Commission’s Frequently Asked Questions #31 on the CPR⁴ thus provides an indicative and non-exhaustive list of products not covered by the standard⁵ and in which “structural components for the moving part of cranes” can be found. NOTE: An appropriate consultation among CEN members is still on-going.

Therefore in some cases the CPR may be applicable.

The purpose of this document is to provide guidance on how to assess whether the Construction Products Regulation (CPR) applies to the various types of cranes or the Machinery Directive. The “Building Law” is a national law which is not a transposition of the European harmonized legislation and therefore it is not considered in this FEM EOT guideline.

Consideration

Following cases are considered as examples (open list):

Case 1: Crane runway



- Key: 1 - Crane runway (according to CPR)
2 - Bridge- and Gantry Crane (according to 2006/42/EC)

Figure 1: Single Girder crane

Crane runway systems have to apply the Construction Products Regulation (CPR) Article 2(1) of Regulation 305/2011 and "Eurocode", if the runway system is permanently incorporated into the whole structure (building) and fulfils a load-bearing function for the structure.

NOTE: Bridge- and Gantry Crane falling under the Machinery Directive 2006/42/EC. (Figure 1)

⁴ http://ec.europa.eu/enterprise/sectors/construction/faq/index_en.htm#Q2-15

⁵ <http://ec.europa.eu/DocsRoom/documents/5744/attachments/1/translations/en/renditions/native>

Case 2: Monorail System



Key: 1 - Monorail (according to 2006/42/EC)

Figure 2: Monorails

Figure 2: Monorails

Two cases are considered:

Case 2 – 1:

A monorail system applies only to Article 2(1) of CPR (Regulation 305/2011), in case:

- It is incorporated in a permanent manner in the construction works (building).
- **It fulfils a load-bearing function in relation to the structure.**

In this case, the conclusion is that the standing supporting structure is necessary to support the structure (e.g. building).

Case 2 – 2:

The Machinery Directive 2006/42/EC only applies to monorail systems in case:

- It is not incorporated in a permanent manner in the construction works (Building) and
- **It does not fulfil a load-bearing function in relation to the structure (e.g. building).**

The conclusion is that the standing supporting structure does not have to support the structure (e.g. building).

Case 3: Free standing supporting structure of a crane



Figure 3: Free standing supporting structures

Free standing supporting structures of cranes apply to the Machinery Directive 2006/42/EC, in case:

- They are not incorporated in a permanent manner in the construction works.
- They do not have load-bearing function in relation to the structure (e.g. building).

The conclusion is that the standing supporting structure does not have to support the structure (e.g. building).

NOTE: The free standing supporting structure is connected via "floor" (Figure 3).

Conclusion

The CE marking affixed to the machinery signifies that the machinery, in this case crane, complies with all applicable EU laws and regulations.

We refer to the communication of the European Commission; Ref Doc: CPR 07/04/3 "Cases where the CE Marking is impossible on the basis of CRP, EN 1090-1 "Execution of steel structures and aluminium structures - Part 1: Requirements for conformity assessment of structural components"; see:

- A) Steel and aluminium products which are not covered by the scope of EN 1090-1 therefore CE marking on the basis of EN 1090-1 is not possible: Indent 25 "**Structural components for cranes**" and
- B) Other products which, even if they are covered by EN 1090-1 they cannot be CE marked under that standard; see Indent 1, 2, 3.
- B.2 and B.3; Indent 1

FEM is of the opinion, that in

- a. Case 1 the crane runway has to be affixed regarding CRP and a Declaration of Performance (DoP) must be drawn up in accordance with Article 4 and 6; the crane has to be affixed according to the Machinery Directive 2006/42/EC
- b. Case 2-2 & 3 the CE marking has to be affixed according to the Machinery Directive and
- c. Case 2-1 the CE marking has to be affixed regarding the Construction Products Regulation (CPR) and a Declaration of Performance (DoP) must be drawn up in accordance with Article 4 and 6.

Useful links & documents

European Commission, DG Enterprise and Industry page on the Machinery 2006/42/EC
http://ec.europa.eu/enterprise/sectors/mechanical/machinery/index_en.htm

European Commission, DG Enterprise page on the CPR
http://ec.europa.eu/enterprise/sectors/construction/legislation/index_en.htm

European Commission, DG Enterprise FAQ on the CPR
http://ec.europa.eu/enterprise/sectors/construction/faq/index_en.htm

European Commission, DG Enterprise page on the DoP and CE marking
http://ec.europa.eu/enterprise/sectors/construction/declaration-of-performance/index_en.htm

Orgalime Guide on the CPR
<http://www.orgalime.org/publication/practical-guide-understanding-specific-requirements-cpr>

FEM Product Group Cranes and Lifting Equipment
Located in VDMA, Frankfurt GERMANY

Contact:

Paul Zepf
VDMA
Lyoner Straße 18
60528 Frankfurt Main
Germany
E-mail: Paul.Zepf@vdma.org

The recommendations and advice contained in this Guidance Note are based on specifications, procedures and other information that have been collected from the FEM from its members. They represent what is, as far as FEM is aware, the best available data at the time of publication on the instruction and use of the equipment concerned in the general conditions described and are intended to provide guidance for such use.

The suitability of this Guidance Note must be determined by the judgement of the person applying it in accordance with the conditions in which use is envisaged and subject to all relevant statutory requirements.

FEM accepts no responsibility for the recommendations, advice, statements and conclusions expressed or implied and gives no warranty, representation or assurance with respect to the accuracy or validity of the same.



FEM

European Materials Handling Federation
www.fem-eur.com

© Copyright FEM