

**THE IMPORTANCE OF THE RESPONSIBLE WELDING  
COORDINATOR IN STRUCTURAL METALWORKS  
ACCORDING TO THE REQUIREMENTS  
OF EN 1090-1  
CE MARKING**

**Dr. Ioannis Kordatos**  
General Manager HWA

As of July 1st 2014 any “series” manufactured structural metal components or kits that have been either made in Greece or imported, and to which a harmonised European standard applies, must comply with the CPR & CE marking requirements.

The harmonised European standard that applies to structural metalwork is the EN 1090-1:2009 and it will be a criminal offence to supply structural metalwork after the 1st of July 2014 unless it conforms to this standard and carries a legitimate CE mark.

Businesses that are discovered not to be complying with CPR, they will be unable to trade within EU and will have to carry the cost of product recalls and fines. In severe cases Directors may also be imprisoned.

## ***What is EN 1090-1 and CE marking of structural metalwork?***

CPD and CPR?

### **“Construction Products Regulation”**

- CPD (89/106/EEC) has been replaced by CPR (305/2011) on 9 March 2011.
- The CPR has already entered into force.

***The CPR is to ensure reliable information on construction products in relation to their performances. The aim of the regulation is to harmonise the safety performance of construction products across the EU and they apply to anything placed on the market, whether imported or manufactured in the EU.***

This is achieved by providing a “common technical language”, offering uniform assessment methods of the performance of construction products

## Who needs to comply?

The regulations apply to a wide range of activities involving “series” manufactured items:

- Importers of structural metalwork kits or components
- Stockholders and metal processors that modify stock - for example by drilling, painting, bending, electroplating etc.
- Manufacturers of metal components or kits that have a structural use in civil engineering.

By “series”, the regulations mean any activity that an organisation carries out more than once, not just the production of a series of standard items. For example a factory that makes bespoke staircases is in the business of “series” manufacture of staircases and all of them will need to carry a CE mark. If the same factory produces a single platform as a special commission, this will be exempt. However if the factory decides to diversify into platforms and makes more than one, CE marking will be required.



## CE marking !

Indicates that the described product complies with specified requirements and therefore may be treated within the EU



<p><b>CE</b></p> <p>01234</p>
<p>AnyCo Ltd, PO Box 21, B-1050</p> <p><b>11</b></p> <p>01234-CPD-00234</p>
<p><b>EN 1090-1:2009+A1:2011</b></p> <p>Welded steel beam – M 346</p> <p>Tolerances on geometrical data: EN 1090-2.</p> <p>Weldability: Steel S235J0 according to EN 10025-2.</p> <p>Fracture toughness: 27 J at 0°C.</p> <p>Reaction to fire: Material classified: Class A1.</p> <p>Release of cadmium: NPD.</p> <p>Emission of radioactivity: NPD.</p> <p>Durability: Surface preparation according to EN 1090-2, preparation grade P3. Surface painted according to EN ISO 12944-5, S.1.09.</p> <p><u>Structural characteristics:</u> <u>Design:</u> NPD. <u>Manufacturing:</u> According to component specification CS-034/2006, and EN 1090-2, execution class EXC2.</p>

CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.

Identification number of the notified body

Name or identifying mark and registered address of the producer

Last two digits of the year in which the marking was affixed

Certificate number

No. of European standard

Description of product

and

information on regulated characteristics

Figure ZA.1 – Example of CE marking information of product properties by material properties and geometrical data

Where welding is part of the process, a **Welding Quality Management system** is needed and this must conform to EN ISO 3834.

The company should either employ, or have access to, a **Responsible Welding Coordinator** to control their Welding Quality Management System.

Once the above is in place, the company is ready to become certified by a notified inspection body.

## Execution Classes

The execution class determines the requirements for the various activities of the execution given in this European Standard! EN 1090-2 specifies them!

### Typical examples

- EXC 1 Farm buildings
- EXC 2 Buildings (quasi-static design)
- EXC 3 Bridges (possible design for fatigue)
- EXC 4 Special structures (high risk)



- Manufacturer identifies suitable EXC
- RWC has portfolio of manufacturer's:
  - ✓ Welder qualification tests (WQTs)
  - ✓ Welding procedure specifications (WPSs)
  - ✓ Welding procedure qualification records (WPQRs)
- RWC uses these to define scope of operations under his/her supervision:
  - ✓ Processes and materials
- RWC uses extensive guidance in EN ISO/TR 3834-6 to ensure that suitable controls are in place

## Welding Quality Management System defines

- Manufacturer's welding operations (as above)
- RWC's role and responsibilities
- RWC needs to be competent in welding operations being supervised
- Qualification evidenced by technical knowledge
- Independent IIW qualifications (eg IWE, IWT, IWS)
- Experience
- CV of work at manufacturer and/or in industry sector
- Verified during WQMS certification

**Table 14 — Technical knowledge of the coordination personnel  
Structural carbon steels**

EXC	Steels (steel group)	Reference standards	Thickness (mm)		
			$t \leq 25^a$	$25 < t \leq 50^b$	$t > 50$
EXC2	S235 to S355 (1.1, 1.2, 1.4)	EN 10025-2, EN 10025-3, EN 10025-4 EN 10025-5, EN 10149-2, EN 10149-3 EN 10210-1, EN 10219-1	B	S	C <sup>c</sup>
	S420 to S700 (1.3, 2, 3)	EN 10025-3, EN 10025-4, EN 10025-6 EN 10149-2, EN 10149-3 EN 10210-1, EN 10219-1	S	C <sup>d</sup>	C
EXC3	S235 to S355 (1.1, 1.2, 1.4)	EN 10025-2, EN 10025-3, EN 10025-4 EN 10025-5, EN 10149-2, EN 10149-3 EN 10210-1, EN 10219-1	S	C	C
	S420 to S700 (1.3, 2, 3)	EN 10025-3, EN 10025-4, EN 10025-6 EN 10149-2, EN 10149-3 EN 10210-1, EN 10219-1	C	C	C
EXC4	All	All	C	C	C

- <sup>a</sup> Column base plates and endplates  $\leq 50$  mm.  
<sup>b</sup> Column base plates and endplates  $\leq 75$  mm.  
<sup>c</sup> For steels up to and including S275, level S is sufficient.  
<sup>d</sup> For steels N, NL, M and ML, level S is sufficient.

Responsible welding coordinator :

***Coordination of manufacturing operations for all welding and welding-related activities. Person responsible and competent to undertake the tasks and responsibilities according to EN ISO 14731***

Responsible welding coordinator three (3) levels

Level 1                    **C**omprehensive technical knowledge

Level 2                    **S**pecific technical knowledge

Level 3                    **B**asic technical knowledge

## Why are IWE/T needed?

- Given the importance of the welding coordination personnel for the welding fabrication process, the following further reasons should be considered:
  - Compliance to ISO 3834 and ISO 14731;
  - Compliance to the most significant European Standards covering industrial sectors such as pressure vessels (EN 13445), piping (EN 17732), Railway applications (EN 15085), Civil structures (EN 1090), etc.
  - Assures conformity to the main European Directives (P.E.D., C.P.D.).

**IWE** - International Welding Engineer

**IWT** – International Welding Technologist

**IWS** – International Welding Specialist

**IWP** – International Welding Practitioner

**IWIP** – International Welding Inspection Personnel

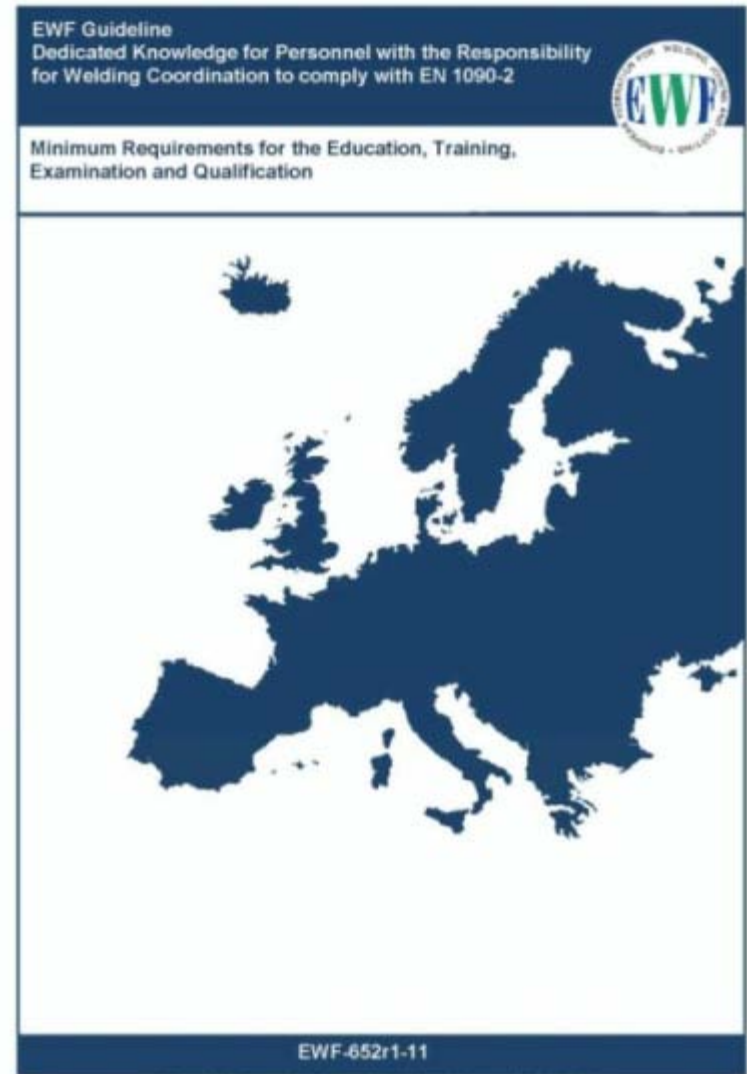
**IW** – International Welder

## Recent development !!!

European alternative for the welding coordinator is there!

EFW introduces a supplementary European education scheme, meant especially for the SME in steel construction work.

B and S levels; EXC 2 and 3, up to and including S355.



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Theoretical Education	Teaching hours	
	RCW-S	RWC-B
Welding processes and equipment	20	10
Materials and their behaviour during welding	20	10
Construction and design	12	4
Fabrication, applications engineering	44	24
<b>Seminar on EN 1090</b>	<b>20</b>	<b>12</b>
<b>Sub total</b>	116 (14,5 days)	60 (7,5 days)
Examination (Intermediate and Final)	3h45	2h30
<b>Total:</b>	<u>120</u>	<u>63</u>





For the Qualification of the Welder below, which one is the applicable standard :

- ◆ EN 287-1 or
- ◆ EN 1418



