

# **CE BS EN 1090 STEELWORK & ALUMINIUM**



## **THE CONSTRUCTION PRODUCTS REGULATION & ITS EFFECTS ON CONSTRUCTIONAL STEELWORK & ALUMINIUM MANUFACTURERS**

# **RKMS**

**Consultancy | Lean Management | Training**

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## **THE CONSTRUCTION PRODUCTS REGULATION & ITS EFFECTS ON CONSTRUCTIONAL STEELWORK & ALUMINIUM MANUFACTURERS**

EN 1090 is one of a number of harmonised standards covering steel and aluminium used for structural work.

All companies selling steel or aluminium construction products in the UK or in other parts of the EU are legally required to CE Mark their products.

BS EN 1090 1 is the harmonised standard for structural steel, as of 1<sup>st</sup> July 2014 it was made a criminal offence to supply structural metalwork unless it conforms to this standard and carries a legitimate CE mark.

In 2012 The Construction Products Regulations (CPR) was introduced, this places a requirement on construction products that have a harmonised standard to be CE Marked.

This regulatory instrument replaced the Construction Products Directive and made CE Marking mandatory for all construction products. The Construction Products Regulation can be freely downloaded [here](#).

The European Construction Products Directive is aimed at harmonising 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. The CPD defines six principles for materials that are to be used in civil engineering including:

1. Mechanical resistance & stability (ITT / initial type testing)
2. Safety in case of fire (fire testing)
3. Hygiene, health & the environment (design)
4. Safety in use (clear usage instructions & risk assessment )
5. Protection against noise (risk assessment)
6. Energy economy & heat retention (environmental performance)

New legislation was introduced in 2013 to allow the CPR to be enforced by the Trading Standards authority, which now has the power to stop a business from trading and to withdraw any products supplied. In severe cases Directors may also be imprisoned for not complying with EN 1090-1.

### **CE MARKING**

If your standard or customer specific product complies with the 2 requirements above, then it must be CE marked before it is sold to customers. In addition, all supplies to customer must be accompanied by documentation confirming CE marking status including the logo plus information about the product itself and your manufacturer information.

EN 1090-1 CE marking involves self declarations by manufacturers which are signed off by individual company representatives who are responsible for all data recorded within the CE mark for that particular product. Manufacturers are also required to obtain independent third party assessment and certification of a company's Factory Production Control (FPC.)

The FPC covers all manufacturers' activities involved in the conformity of their products to the CPR & CE and requires a fully documented system covering processes, procedures and inspections in order to provide clear evidence which explains how a manufacturer produces its products from the design stage to final delivery to the customer.

### **EN 1090 BENEFITS**

The net benefit of EN 1090-1 is the elimination of risks emanating from steelwork being either under or over the requisite specification for a particular application. With the ability to select steelwork that has been CE marked in an appropriate manner, contractors will derive increased levels of confidence that their structural steelwork will provide the requisite performance and extended life in service. In addition, specifiers are now able to differentiate differing levels of expertise from a range of suppliers, which in turn helps with cost effective and peace of mind procurement.

As a result, construction contractors can have increased confidence in the efficiency and suitability of their structure. Now, special production runs can be undertaken to match the demands of the end use requirement by stipulating the execution class before steelwork fabrication is undertaken.

So, CE marking enables construction industry contractors to have increased levels of confidence in the structural steelwork quality. Contractors that use fabricators with third party certification can have greater confidence that their fabrications have been optimised to their specific application requirements.

Most important of all, is the reduction of risk in steel structures. Greater confidence in the quality of structural steelwork corresponds with more reliable, safer structures in order to ensure that all types of structure have the requisite suitability and integrity for its application.

## WHO NEEDS TO COMPLY WITH BS EN 1090-1?

The BS EN 1090-1 CE marking for structural steel regulations apply to a wide range of activities involving “series” manufactured items:

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

Within EN 1090-1 The term “series” means mass produced or more than one for example multiple production such as staircases but not necessarily an access platform as a one off (non series) production, however the controls required are same and many larger organisations purchasing structural/fabricated steel may insist on CE Marking to ensure they have met their legal duty of care.

## THE CE MARKING PROCESS - AN OVERVIEW

Here are some of the key considerations that manufacturers of steel and/or aluminium products need to bearing in mind in their quest to obtain CE marking in accordance with EN 1090:

- ↓ Do the products being manufactured fall within the EN 1090 standard’s scope?
- ↓ Purchase all relevant parts of EN 1090
- ↓ Determine the appropriate Execution Class
- ↓ Engage RKMS consultancy services to facilitate the whole process
- ↓ Carry out “self assessment” of factory production control (FPC) against the requirements of EN 1090
- ↓ RKMS assess & arrange certification for your factory production control
- ↓ Begin CE marking & produce declarations of performance for each product

## WHAT ARE THE REQUISITE STANDARDS?

There are 3 parts to EN 1090 as follows:

### 1. EN 1090-1:2009+A1:2011

Requirements for conformity assessment providing an outline of a manufacturer’s FPC requirements and provides guidance on how products should be CE marked.

### 2. EN 1090-2:2008+A1:2011

Steel technical requirements.

### 3. EN 1090-3:2008

Aluminium technical requirements

Manufacturers should obtain part 1 of the standard and either of or both parts 2 and 3 depending on the material being used in the manufacture of their products.



## WHAT STEPS ARE REQUIRED TO COMPLY WITH & BS EN 1090-1 & ACHIEVE CE MARKING?

### Step 1 – Do Products Fall Under The Scope of EN 1090?

The nature of construction steel and aluminium production is largely bespoke with very few “standard” offerings.

So, manufacturers are responsible for determining whether their products fall under the scope of EN 1090 and as a result need to be CE marked to trade legally in the UK or the EU.

EN 1090 does define the scope of products it covers including cold formed or hot rolled components.

The core criteria that EN 1090 covers include:

1. Does the product have steel or aluminium construction?
2. Is the product to be used for load-bearing purposes?
3. Will the product be erected in a permanent installation?
4. Does the product fall within the scope of the EN 1090 standard?
5. Does the product comply with any other harmonised standard besides EN 1090?

There are 3 “consequence classes” in EN 1090-1 and it is anticipated that the majority of structural steel fabricators in the UK will fall within consequence class 2.

Consequence class 1 (CC 1)	<b>Low</b>	Low possibility of loss of human life, or economic impact, social or environmental consequence – <b>minimal to negligible loss</b>	Agricultural buildings where people do not normally enter, low use, storage areas, greenhouses, etc.
Consequence class 2 (CC 2)	<b>Medium</b>	Medium possibility of loss of human life, or economic impact, social or environmental consequence – <b>considerable loss</b>	Residential and or office buildings with regular use, although not highly populated
Consequence class 3 (CC 3)	<b>High</b>	High possibility of loss of human life, or economic impact, social or environmental consequence – <b>very great and serious impact</b>	Stadium, concert hall, public buildings, etc. human activity very high usage most days of the year

You need to have what is known as an FPC (Factory Production Control system) this is set of procedures and documentation that ensure the following amongst other requirements:

- Traceability of materials (to original mill certs and test results)
- Competence of welders/fabricators (coded welders/weld testing)
- A responsible welding coordinator needs to be appointed
- Drawings and calculations to prove the structural integrity of materials/fabricated items
- Calibration of equipment (welding equipment)
- Control of defective materials and products with corrective action process (fixing errors)
- Purchasing procedures and approval for materials and subcontractors
- Quality control systems to ensure the quality of manufactured products

Holding certification to ISO 9001 will provide the majority of evidence required for EN 1090-1 but you will need some additional controls as detailed above. When all this is in place you need to have a third party audit/inspection by a notified body which is UKAS accredited.

## **Step 2 – Identify The Execution Class Required**

Once it has been established that CE marking is needed for one or a range of products, manufacturers are required to identify the appropriate Execution Class (EXC) the product or products fall under.

An EXC is a measurement of a product's material and physical construction, its mechanical performance, production processes and the consequence of failure to identify levels of risk involved.

In practice, the higher the EXC value, the more stringent the manufacturer's FPC should be in order to manufacture and subsequently CE mark the product.

When it comes to the choice of EXC, a number of manufacturers select a class that will cover the majority of their EN 1090 product profile.

## **Step 3 – Assess Factory Production Control vs Target Execution Class**

After selection of the EXC, manufacturers are required to their Factory Production Control assessed against the target Execution Class.

7 main criteria are used in these assessments including:

1. Employees
2. Fabrication & Assembly Equipment
3. Structural Design Intent
4. Constituents Used In Products During Production
5. Specification of Components
6. Evaluation of products
7. Noncompliant Products

Consideration of the above factors ensures that all manufacturing processes used to fabricate products to EN 1090 are carried out in a competent manner by qualified and experience employees subjecting products to rigorous quality inspection during manufacture.

Holding certification to ISO 9001 will provide the majority of evidence required for EN 1090-1 but you will need some additional controls as detailed above. When all this is in place you need to have a third party

If you don't currently hold certification and would like to find out more, please visit

<https://www.rkmsuk.co.uk/iso-consultancy/iso-9001-consultants/>

## WHAT SHOULD BE DONE TO GET TIMELY & COST EFFECTIVE EN 1090 CERTIFICATION?

Engage the services of RKMS to facilitate the acquisition of EN 1090 certification.

In order to qualify for CE Marking, manufacturers are required to obtain third party certification for their FPCs. As CE Marking falls within the scope of European Union Construction Products Regulation, the EU requires UK certification bodies to be accredited by UKAS.

We will assess your FPC against EN 1090 requirements. The FPC is comparable to a quality management system and is covered in the EN 1090-1 standard. If your organisation is already certified for ISO 9001 Quality Management systems, EN 1090 requirements may be partly satisfied.

## WHY CHOOSE RKMS?

At the end of the day, the reason you are employing a consultant is to save your time and provide you with a meaningful management system that will provide you with an economical, accredited and certified system that will enable you to grow your business and reach more service users.

Please consider our service features below; they will make a real difference to your business!

See page Appendix 1 on 9 for the detailed RKMS 3 Steps consultancy process.

### What Sets RKMS Apart From Other Consultants



Unlike Some, We Are Certified To 9001, 14001 & 18001



RKMS consultants are IRCA Lead Auditor Qualified



No Long Drawn Out Processes



Processes Streamlined With Unique Interactive Online QMS System



ISO Auditor Training Included For Your Staff

## ECONOMICAL CERTIFICATION & 100% SUCCESS RECORD

The RKMS ISO 9001 & BS EN 1090 consultancy works with all types and sizes of organisations in the UK to comply with ISO 9001:2015 and other standards successfully securing economical certification.

## MAKING THE STANDARD FIT YOUR BUSINESS

RKMS ISO 9001 & BS EN 1090 consulting won't force you to change your processes because we establish how each business functions, then create an ISO quality management system (QMS) that works in "synch" with it.

## INNOVATIVE ISSOSMART CLOUD MANAGEMENT

RKMS consulting provides clients with their easy to use, convenient tool to create and edit documentation.

## SYSTEM SUPPORTS REGULATORY & CERTIFICATION BODIES

ISSOSmart can be used with any British or ISO standard and fully supports UKAS, NQA, BSI, ISOQAR requirements.



Build Your Own ISO Management System Online In Around 30 Minutes

- Save implementation time & money
- Get a quicker pay back on ISO 9001 investment
- Added value from experience with vast client base
- Reduced costs & improved productivity
- Better products & services
- Organise & plan QMS project actions
- Identify & document organisational processes
- Process improvements suggested
- Benchmarking practices recommended

- Speeds up implementation times
- Reduces the workload on staff
- Build your own system in around 30 mins
- Or consultant partial or full system build
- Simple to use & fully compliant
- Add multiple standards eg ISO 9001 to ISO 27001
- Access via web browser, smartphone or tablet
- Staff training eg Auditor HABC Level 3 Qual
- Ongoing consultant support after certification

*If you have any further questions regarding EN 1090 and the CE Marking process, one of our specialists can help you.*

Call RKMS on +44 844 815 77 65 or email us at [info@rkmsuk.co.uk](mailto:info@rkmsuk.co.uk) or visit [rkmsuk.co.uk/en-1090-1](http://rkmsuk.co.uk/en-1090-1)

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## **Appendix 1 - 3 STRAIGHTFORWARD STEPS WITH RKMS TO GET EN 1090 CERTIFICATION**

### **Step 1 – Preparation**

a) Please send us an enquiry and an EN 1090 consultant will get in touch within 24 hours to assess your requirements.

b) The EN 1090 consultancy variables explored will include the:

- the parts of the standard you wish to obtain certification for
- timescales required for certification
- nature of your organisation
- markets you serve and / or your key stakeholders
- size of your organisation eg number of facilities, locations and employees

### **Step 2 - Implementation**

#### **Systems & Working Practices Assessment**

1. If fortunate to receive your instruction, an EN 1090 consultant will contact you to arrange an initial exploratory assessment visit
2. We will meet with your organisation's team to understand your business
3. Organisational processes will be identified & documented
4. A variance analysis will be conducted to identify where you comply or do not comply with EN 1090
5. EN 1090 consulting guidance will be given on how best to integrate EN 1090 within your current systems & working practices
6. If required, working with your team we will evolve processes suited to your organisation and make "benchmarking" recommendations
7. We will then begin working on your Quality Management System to bring it in line with the requirements.

#### **Creating Your Quality Management System**

1. Designated members of your team will be receive training on the use of the IssoSmart Cloud QMS Management system from an expert EN 1090 consultant who will provide all the documentation needed to comply with the ISO standard or standards being targeted
2. IssoSmart includes a manual, user guide, procedures, forms & registers
3. Our EN 1090 consultants will providing coaching on its practical use to enable your organisation to build its own system or let RKMS do all the work for you
4. When the RKMS EN 1090 consultancy receives instructions to create the entire QMS, we work closely with your team, then plan, timeline & organise all ISO QMS project implementation actions
5. We encourage meaningful input from your implementation team that is so important in gaining "buy in" for the new system to ensure a smooth assimilation into your organisation
6. All requisite EN 1090 documentation is then developed to create the quality management system (QMS)

### **Step 3 – EN 1090 Certification**

1. 4 months after the new QMS became operational in your organisation, an EN 1090 consultant will visit once more to carry out thorough internal audits on your processes and procedures to ascertain if the system / staff are working effectively in accordance with EN 1090
2. The RKMS EN 1090 consultancy will then hold a review with senior management to consider the findings from the audits which identify deviations from the EN 1090 standard which need to be rectified
3. After the new system is deemed in compliance, we arrange for an external assessment of your QMS to be carried out by an assessment organisation certified by UKAS
4. Once the assessment body are satisfied that your QMS complies with EN 1090, an official certificate of registration will be awarded which can be used to inform existing clients, identified in tenders and promoted to prospective customers
5. Key members of your team will also receive Lead Auditor training which confers a the regulated Highfield Awarding Body for Compliance [Level 3 Award in Effective Auditing and Inspection \(RQF\)](#)