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# Mandatory certification and CE marking for structural steel

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## Introduction

The European Commission estimates that the turnover in the EU steel industry is €150bn per year, and employing over 400,000 people it represents 1.25% of the EU-wide manufacturing workforce. In the UK alone there are nearly 10,000 companies involved with the manufacture of structural metalwork, and many hundreds of steel fabricators and processors. One of the most significant changes to impact the steel industry in recent years is the start of mandatory CE Marking through the BS 1090 standard – and in July 2014, BS 1090-1 came into force for structural steelworks, and for those who are part of supply chains handling such products.

### Industry Facts

- There are nearly 10,000 companies involved with the manufacture of structural metalwork in the UK alone
- July 2014 heralded the start of mandatory CE Marking and compliance with the BS EN 1090 standard - one of the most significant changes to impact the steel industry for many years
- It is now a criminal offence to supply and trade structural metalwork on the European market unless it adheres to BS EN 1090 and carries a legitimate CE mark
- CE Marking is also a requirement of the Construction Products Regulation to harmonise the safety performance of construction products across the EU
- CE marking carries implications throughout the supply chain, which means the onus is on all parties involved with the product throughout the supply chain

**How did we arrive at this latest development?**
The original EU directive, the Construction Products Directive (CPD), launched in 1988, applied to all construction products intended to be part of permanent 'construction works' from structural steel down to bolts and welding components. The Directive covered anything defined as a product or kit placed on the market (made available for sale) for incorporation in a permanent manner in construction works.

The Directive was enforced in the UK through CPR 1991, the Construction Products regulations – which described compliance either through CE marking, or through Trading Standards Officers – though was not mandatory.

The aim of directives were to clarify and bring together safety performance of construction products, and thereby reduce technical barriers to trade across the EU, in seven dimensions:

- Mechanical resistance & stability
- Safety in case of fire
- Hygiene, health & the environment
- Safety in use
- Protection against noise
- Energy economy & heat retention
- Sustainable use of natural resources

The CPD was replaced by the CPR, the Construction Products Regulation, in 2013, having been in effect simultaneously since 2011. European Regulations are, in contrast to Directives, mandatory in all member states. The CPR requires any construction product that is covered by either a harmonised standard or an ETA (European Technical Assessment) in force to be CE marked. European Harmonised Standards (hEN) apply across the EU and take the seven general requirements above, and break them down into properties where measurement, 'performance characteristics,' such as toughness, yield strength, and standards of performance can be set and compared across jurisdictions - hence 'harmonised'. In steelwork, some of the key harmonised standards include fabricated structural steelwork, steel sections and plates, sheet, rods, and welding consumables.

One key factor of CE marking is that it carries implications throughout the supply chain, which means the onus is not necessarily on the original manufacturer, but on other parties involved with the product further down the supply chain.

**The Standard: BS EN 1090-1**

The heart of the standard is the Execution Class, which is a clarification system designed to incorporate the intended use for the steelwork and thereby determines the requirements placed on the manufacturer or end user of that product. Usage characteristics (Consequences, Service and Production) all feed into the ultimate execution class; EXC1, 2, 3 or 4 – 1 being the lowest and least onerous, 4 being the most.

The first step is to determine the consequence class – the potential outcome in respect of human life, in the event that the construction product fails and the structure collapses or becomes unstable. Factors such as the frequency with which humans will occupy the structure, and how many at a time will be within it (comparing for instance a cow barn with a 5,000 seater football stand), influence the level of consequence class.

The service category judges the degree to which the steelwork will be subject to fatigue and/or seismic forces through erection and use. The production category assesses the complexity of fabrication of the structure or components (though note that production category does not affect the eventual execution class).

The eventual execution class determines the level of contractor (and therefore of steelwork) that must be used in a project. The main contractor cannot use materials, a subcontractor or manufacturer who does not meet or exceed the required execution class standard; however within for example an overall execution class of 4 certain items of a lower class may be allowed for less critical items.

Steve Stubley, Technical Director at Alcumus ISOQAR, outlines some of the differences between the final execution class requirements, such as the frequency of future audits, the welding procedures that need to be created and documented, and the training and competency requirements within an organisation. The bulk of the clients seen recently at his organisation are EXC2 – the class where the majority of smaller fabricators and manufacturers are likely to be involved.

As a company moves up the execution class scale, additional requirements are expected of it - the higher the declared class, more stringent and technical quality criteria will apply with more procedures / criteria required.

Through the use of CE marking, this standard places obligations not only on the manufacturer, but also on distributors and importers. The wording puts the onus on those who 'make available on the market' a construction product – therefore distributors will come into that category. Importers too – if steel is brought into the EU then it is treated the same way and must have the same degree of traceability in production and process (specific legal obligations apply under the CPR to both importers and distributors and these should be carefully checked).

"Any organisation wishing to supply fabricated steel to the European market has no option but to meet these mandatory requirements.
Certification to BS EN 1090 and CE marking provide a 'passport' to do this whilst also demonstrating the vigour of the organisation's processes and the integrity of its products."
Martin Smith, Alcumus Chief Executive Officer

**The audit process**
The audit is not as onerous as some, and if your organisation has already been certified to ISO 9001 then some of the documentation and management systems will already be in place. Some bodies offer grants to support businesses through the certification process and your local MAS (Manufacturing Advisory Service) may be able to provide further information.

There are several basic requirements that will form the basis of the audit of a 'manufacturer', these include the following (not an exhaustive list):

- Preparation and maintenance of a Quality Control / FPC system
- An audit by a Notified Body of the Quality Control / Factory Production Control (FPC) system that includes:
  - A Responsible Welding Coordinator (RWC) for Execution Classes 2, 3 & 4 and
  - An appropriate Welding Quality Management System (WQMS) according to the appropriate part of BS EN 3834 (For example EXC 2 refers to Part 3 of BS EN 3834)

Some of the most significant items for companies, especially those that are not ISO 9001 accredited, will be the control systems, and the RWC. Some industry membership organisations have estimated that the process of assessment and certification will take up to 12 months from start to finish; other sources suggest that the process can take between 3 and 24 months, depending on the execution class and whether or not the company has an ISO 9001 quality management system in place.

According to Steve Stubley of Alcumus ISOQAR, in general their clients will have a Stage 1 assessment either on site, or an Office (ISOQAR) Document Review allowing the documentation to be reviewed appropriately. Key points he has seen before include documentation that isn't fully comprehensive, an insufficient number of appropriately trained welders, and difficulty gaining sufficient access to a registered welding coordinator (this role can be outsourced /sub-contracted though this tends to be more expensive). Some estimates place a time figure of approximately 60 person-days to meet the commitments of BS EN 1090-1 in-house – depending on the internal management and systems competencies. Other alternatives include hiring a consultant to support this process, which could mean the systems required can be put in place sooner.

"By employing the services of a competent Notifed Body, manufacturers, specifiers and contractors will gain the help and assurance they need to comply with the legal requirements of the Construction Products Directive."
Martin Smith, Alcumus Chief Executive Officer

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**What to do next**

A key part of the new certification is the creation of Notified bodies – notified and approved by member states (in the UK this is through the DCLG) as competent to act as third party notified bodies to audit BS 1090 Part 1. In the UK there are fewer than 10 such notified bodies, one of which is Alcumus ISOQAR.

Alcumus ISOQAR reports that in May 2014, one in ten of their applications were for the BS 1090 certification, and in June this had doubled to one in five in the eventual run-up to the July deadline at which point the CE marking became mandatory. Enquiries for the audit are coming from outside the UK, from Italy and further afield.

What this means is that if plans aren't already in place in your organisation to make the changes that, at time of writing, have already become law – then you must act immediately. Fortunately a lot of manufacturers already are, or are well on their way to becoming compliant. Depending on their output, some manufacturers will see very little change resulting from the new regulation. But penalties are stiff and legal, financial and along with competitive pressure will become more and more apparent in the coming months.

*Alcumus ISOQAR's technical consultants will be happy to help you understand the requirements of the standard and how to successfully gain the correct CE mark for your products; please get in touch by calling 0161 866 6186 for an instant free no obligation quote.*

**Alcumus action points**

- It is important to note that your products will not achieve a CE Mark unless you can prove that they have been manufactured under a robust Factory Production Control (FPC) system which meets the requirements of ISO 9001 or a similar quality management system. Having ISO 9001 certification in place will help ease the pain and demonstrate that you have suitable processes and systems in place.
- Introducing system standards and CE marking can be a daunting exercise if you are doing it for the first time. Consider the level of internal knowledge within your business that will be required to achieve successful certification. Management system awareness training courses are a good way to get to grips with the basics and promote general understanding within your business.

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**What not being certified could mean for your business**

Not being certified to the level required to continue working on current projects will have significant and serious effects. Producing structural steelwork that is not appropriately CE marked is illegal, and the Trading Standards Authority has the power to enforce the standard through a series of measures including stopping a business from trading until it complies with the regulations, forfeiture of product, fines, or in extreme cases, company Directors may face custodial sentences.

An important point to remember is that as the CE marking sits within various parts of the supply chain, different regulations may apply in more than one way – for instance a distributor selling construction products from outside the EU would be both a distributor and an importer.

Setting aside the legal ramifications posed by not meeting the standard, in reality, there is also a significant amount of self-policing already being seen across the market, both from manufacturers and from key industry bodies. Some of the larger steel manufacturers such as Tata were already CE Marking several of their products, adding competitive pressure to the production quality marketplace.

Insurance of all kinds may become more expensive for companies that do not comply. The BCSA (The British Constructional Steelwork Association) made certification to BS 1090 a condition of membership.

**About Alcumus**

Alcumus is a market-leading provider of technology-enabled compliance risk management and certification services, supporting both UK and International clients with their Testing, Inspection & Certification (TIC) and Governance, Risk & Compliance (GRC) strategies. We have experience of working with organisations of all sizes within the manufacturing sector.

As a UKAS accredited certification body, Alcumus ISOQAR is able to offer the structural steel industry assessment and certification to the quality management system standard, ISO 9001 which is a critical part of the CE Marking process. As a Notified Body our services also include Factory Production Control (FPC) certification to BS EN 1090 for structural metal products and ancillaries.

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