If you are involved in the manufacture of structural steelwork products, then you are likely to be aware that as of 01 July 2014 the choice is simple; no certification, no business!

[The Construction Products Directive (CPD) of 1989](https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/construction-products_en) was conceived to provide a common framework across the whole of the European Union to ensure the integrity of buildings and construction works.

Because fabricated steel components are deemed “safety critical”, if you are involved in the manufacture or supply of these products then under the CPD it is now a legal requirement for you to adhere to the stringent requirements of EN 1090. You must also ensure that your products are appropriately CE marked.

Introducing EN 1090 and its constituent parts

EN 1090 (Execution of steel structures and aluminium structures – Technical requirements for steel structures) is the harmonised European standard covering fabricated structural steelwork. It comprises three parts:

* EN 1090-1: CE Marking- details the requirements for assessing and verifying product or service conformity.
* EN 1090-2: Details the technical requirements in the manufacture and assembly of steel structures.
* EN 1090-3: Details the technical requirements in the manufacture and assembly of aluminium structures.

Who does EN 1090 affect directly?

The standard affects all companies who manufacture and sell steel and aluminium structures and structural products within the EU. The standard will be relevant to several disciplines within an organisation including;

* Civil engineers
* Construction engineers
* Directors, general and site managers
* Quality assurance and quality control personnel
* Procurement personnel
* Inspection and non-destructive testing personnel

Having ISO 9001 certification in place will help ease the pain.

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.

Furthermore you must also demonstrate that this quality management process has been independently assessed and certified by an accredited body, which has been approved by the European Commission.

Regardless of the mandatory requirements relating to EN 1090, many companies have already recognised the advantages of holding certification to ISO 9001. Implementing an effective quality management system can help reduce waste, ensure the effective use of resources, deliver enhanced customer satisfaction and in many cases is a pre-requisite to be considered for tender opportunities.

If your business is already certified to ISO 9001 and you have been audited by a INAB accredited body then your processes will already show an element of compliance with the requirements of EN 1090.

Traceability, compliance, and verification throughout the manufacturing process.

The requirements of EN 1090 ensure that appropriate controls are in place at every stage of the manufacturing process. The standard embraces all processes from the procurement of raw materials through to final inspection and testing. Verification of compliance will include such areas as;

* Material certification of analysis, testing and storage
* Staff training, testing and qualification.
* Equipment calibration
* Consumable certification and control
* Quality control and testing of product
* Control of records and documents, including control off issue
* Product identification and marking
* Internal audit
* Control of non-conforming product

What is an Execution Class?

EN 1090 sets out four Execution Classes (EXC’s), as given below. These classes are based on the end use of the structure and how critical it would be if it failed:

* EXC1 – e.g. Agricultural buildings
* EXC2 – e.g. Residential or Commercial structures
* EXC3 – e.g. Bridges or Stadia
* EXC4 – e.g. Special structures (long-span bridges, frames for structures within the nuclear sector and structures within seismic active areas) etc.

(please note that in the case of EXC2, 3 and 4 all welding activities must be controlled by a Responsible Welding Coordinator). For EXC 3 and 4 there must also be verified welding procedures also.

Steps to successful certification and CE Marking

To gain certification and be awarded a CE Mark, you are required to undertake the following:

* Initial type-testing of your products
* Factory Production Control  which includes:
	+ Implementation of FPC system procedures
	+ Appointment of a responsible welding coordinator (RWC)
	+ Implementation of welding quality management system (WQMS) procedures
	+ Further testing of samples taken at the factory in accordance with the prescribed test plan

You must also be assessed by a Notified Body that will carry out:

* Initial inspection of your manufacturing plant
* Initial inspection of your FPC
* Continuous surveillance, assessment and approval of your FPC

The Notified Body will then issue an FPC certificate and Welding Certificate identifying the Execution Class that you have achieved.

Beyond safety (the driving force behind EN 1090)

Increased safety spawned the birth of EN 1090 and there is no better cause. But implementing a quality management system is not just something worth doing because it is obligatory. Change can be disruptive, can feel uncomfortable and will cost money! But there are numerous up sides to being certified;

* Will allow you to continue selling your products within the EU
* The control of your processes will make for better organisation efficiency
* Better control will ensure effective resource management
* You are likely to reduce waste
* Improved procedures and processes are likely to enhance customer satisfaction

Your next steps to meeting the mandatory requirements of BS EN 1090 and CE Marking

Contact a INAB accredited certification body.