Guide to

CE Marking & Construction Product Regulations 2013

Issue 1.2

www.parkersteel.co.uk
CONSTRUCTION PRODUCT REGULATIONS 2013

Introduction from Guy Parker, Managing Director, ParkerSteel

Dear Customer,

With effect from the 1st July the Construction Products Regulations 2013 (CPR) come into force in the United Kingdom. This places legally binding obligations on everyone in the supply chain from this date. This will apply in 2 parts.

1. The first relates to constituent Structural Steel Products used in construction and is effective from 1st July 2013
2. The second part relates to Fabricated Structural Steel Components used in construction and is effective from 1st July 2014

The CPR can be a complex and daunting process to comprehend and implement and has wide ranging implications for fabricators, their subcontractors and suppliers who are all required to comply.

This document is intended to help anyone, affected by this change in legislation, understand the requirements, the timetable for implementation, how compliance can be achieved and how we at ParkerSteel can help you in achieving and maintaining your compliance.

ParkerSteel are the first (and only, at the time of writing) steel distributor and processor in the United Kingdom to be fully complaint for CE marking with ISO 9001 accreditation and full Factory Production Control (FPC) to meet the requirements of BS EN 1090-2 systems and are approved by a Notified Body (Steel Construction Certification Scheme)

We are fully compliant with the BCSA standard conditions of supply and the National Structural Steelwork Specification V5 CE Marking Version when requesting Execution Class 2 or higher

I hope you find this publication helpful and if you have any further questions please do not hesitate to contact your normal Relationship Manager, who will be delighted to help.

Yours Sincerely

Guy Parker

Visit us online: www.parkersteel.co.uk  Sales office: 01227 783333
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Got a Question? Email us at support@parkersteel.co.uk
PART 1 - CONSTRUCTION PRODUCTS REGULATIONS AND CONSTITUENT PRODUCTS 1ST JULY 2013

1.0 INTRODUCTION

The Construction Product Regulations 2013 (CPR) came into force on 1st July 2013 in the United Kingdom for the supply of structural steel products.

This requires that structural construction products “placed on the market” (available for sale) after 1st July 2013 are CE marked to indicate appropriateness for use in construction in the European Union where a European Harmonised Standard (hEN) or European Technical Assessment (ETA) exists for the product. It places duties upon Importers, Distributors and Manufacturers to ensure that these CE marking and associated obligations are met.

CE Marking applies to components for incorporation in the vast majority of steel structures including buildings, bridges, towers and masts and has implications for all steelwork contractors, steel stockholders, service centres and distributors. It also applies to manufacturers of light-gauge purlins, decking and sheeting and the manufacturers of proprietary products including cellular beams etc. It also has implications for galvanising and steel bending. For the steel fabrication industry, one is required to have a fully certified Factory Production Control (FPC) system specified to the appropriate execution class however, should the products be purchased direct from a CE approved supplier such as ParkerSteel and delivered and fabricated on site (end user location), that party would not require CE Marking.

1.1 COMMONLY USED “CE” PRODUCTS IN STEELWORK

For steelwork, the main harmonised product standards are:

- Steel Sections and Plates BS EN 10025-1
- Hollow Sections
  - Hot Finished BS EN 10210-1
  - Cold Formed Welded BS EN 10219-1
- Stainless Steels
  - Sheet, Plate & Strip BS EN 10088-4
  - Bars, Rods, Wire, Sections and Bright Products BS EN 10088-5
- Aluminium BS EN 15088-1
- High Strength Structural Bolting Assemblies for Preloading BS EN 14399-1
- Non-Preloaded Structural Bolting Assemblies BS EN 15048-1
- Fabricated Structural Steelwork BS EN 1090-1
- Welding Consumables BS EN 13479
1.2 CE MARKING

A “CE” mark indicates that a product is consistent with its Declaration of Performance (DoP) as made by the manufacturer. Marking may be on the product, delivery paperwork or other as appropriate.

By making a DoP the Importer, Distributor or Manufacturer is assuming legal responsibility for the conformity of the product with its declared performance.

Importer, Distributor and Manufacturer are defined as follows
• Manufacturer - ‘Means any natural or legal person who manufacturers a construction product or who has such a product designed or manufactured and markets that product under his name or trademark’
• Distributor - ‘Means any natural or legal person in the supply chain, other than the manufacturer or the importer, who makes a construction product available on the market’
• Importer - ‘Means any natural or legal person established within the Union, who places a construction product from a third country on the Union market’

Other obligations also apply to the Manufacturer, Importer and Distributor and include the following
• Keep records of all products placed on the market for a minimum period of 10 years.
• Keep a record of all complaints and non-conformance that relate to a product
• Take immediate corrective action if a product is found to be non-conforming
• Make available all relevant documentation whenever a sale is made

1.3 CPR OFFICIAL LINKS AND GUIDANCE

Official link to the EU Construction Product Regulation

UK’s “Product Contact Point for Construction” as required by the CPR
http://www.planningportal.gov.uk/buildingregulations/buildingpolicyandlegislation/cpr

Detailed guidance on the CPR

Additional information is also available from the Steel Construction website
http://www.steelconstruction.org/
1.4 FABRICATED STEEL PRODUCTS

The CPR also requires that Fabricated Steel Products are CE marked after 1st July 2014 when the European Harmonized Standard for fabricated steel products BS EN 1090-1 and BS EN 1090-2 came into force. However all products used in the manufacture of fabricated steel work after the 1st July 2013 must be supplied as CE compliant in line with the CPR regulations. This includes all structural steel, welding consumables and structural fixings. CE Marking of Fabricated products is covered in Section 2, and applies to those fabricating/welding steel in their designated facility through a controlled FPC (as opposed to onsite where there is no requirement for CE Marking).

1.5 EXECUTION CLASS (EXC)

BS EN 1090-2 introduces the concept of execution class. This enables Design Engineers to select the level of quality management suitable for the construction product and has a direct tie in with specified.

<table>
<thead>
<tr>
<th>Execution Class</th>
<th>System Level</th>
<th>Type Of Work Undertaken</th>
<th>Test Cert Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXC1</td>
<td>Elementary Quality System</td>
<td>Farm Buildings</td>
<td>N/A</td>
</tr>
<tr>
<td>EXC2</td>
<td>Standard Quality System</td>
<td>Buildings</td>
<td>2.2/3.1</td>
</tr>
<tr>
<td>EXC3</td>
<td>Comprehensive Quality System</td>
<td>Bridges, Stadia etc</td>
<td>3.1</td>
</tr>
<tr>
<td>EXC4</td>
<td>Comprehensive Quality System</td>
<td>Special Structures*</td>
<td>3.1/3.2</td>
</tr>
</tbody>
</table>

*Power Stations, Long Span Bridgeworks etc

See pages 29-30 for further information on how to determine the execution class.

Specification of an Execution Class (EXC) for steel structures is a new concept within the steel construction industry. In BS EN 1090-2 these range from Execution Class 1 to Execution Class 4 (EXC1, EXC2, EXC3 and EXC4). The strictness of requirements increases from EXC1 to EXC4.

The choice of execution class is a design issue where each class is based on the criticality of a structure in terms of its service conditions and the consequence of its failure. However, whilst the designer is responsible for determining the required execution class, to enable CE Marking of its fabricated steelwork, a steelwork contractor must declare and demonstrate its capability to produce a structure that will conform to a specified execution class.

All material supplied with a CE mark must be supplied to an Execution Class with effect from 1st July 2013. The purchaser must specify the Execution Class required from the supplier.

The importance of a steelwork contractor declaring the correct Execution Class for its range of fabricated steelwork cannot be overstated, since this not only impacts on the stringency of the systems and competency of personnel used to implement and control its manufacturing operations but also the work to be tendered for. A steelwork contractor declaring conformance to a particular Execution Class can undertake work in a lower class but not to a higher class.

Further guidance on the selection of Execution Class is given in the BCSA guide to CE Marking of Structural Steelwork publication available for download here: http://parkersteel.net/steel/media/pdf/literature/Steel_construction_CE_Marking.pdf
1.6 EUROPEAN HARMONISED STANDARDS (HEN) & EUROPEAN TECHNICAL ASSESSMENTS (ETA)

A full list of harmonised standards can be found on the EU’s Nando website

The harmonised product standards establish common test methods and reporting styles for declaring the essential characteristics of a product in the information accompanyng CE Marking - for example the required yield strength of nominal S275 steels reducing with thickness. They also define the test methods and the testing frequency if sampling is to be adopted.

There are seven ‘essential requirements’ that apply to all civil engineering works, these are listed below:
1. Mechanical resistance and stability
2. Safety in case of fire
3. Hygiene, health and the environment
4. Safety and accessibility in use
5. Protection against noise
6. Energy economy and heat retention
7. Sustainable use of natural resources

These essential requirements derive from a comparison of what public safety provisions are included in the building and construction regulations of the EU’s member states. In essence, meeting the provisions should ensure that the products meet the regulatory requirements of all EU member states, including, for instance, the provisions on materials and workmanship in Regulation 7 of the Building Regulations applicable to England and Wales.

For steel products and ancillaries only mechanical resistance, stability and safety in case of fire apply. The harmonised product standards break down these general requirements into specific measurable properties termed essential ‘performance characteristics’ (e.g. yield strength, toughness and load bearing capacity) and establishes the values to be met.
1.7 IDENTIFICATION, INSPECTION AND DOCUMENTATION

Under the CPR, documents will be supplied to verify that the information on the products supplied matches those ordered.

- These documents include inspection certificates, test reports, declaration of compliance and declaration of performance (DOP) as relevant for plates, sections, hollow sections, welding consumables, mechanical fasteners, studs etc.
- This documentation check is intended to obviate the need for testing products generally.

Specific testing of products unless otherwise specified is not required.

For compliance with BS EN1090-2 (CE Marking of Fabricated Steelwork) inspection documents to EN 10204 are required as follows.

- Structural Steel to S355J0 – 3.1 Type Certification
- Stainless Steel - 3.1 Type Certification
- Structural Bolt Assemblies - 2.1 Type Certification
- Welding Consumables - 2.2 Type Certification

BS EN 10025 requires full CEV values to be included and these are available on 3.1 / 3.2 type Test Certificates

For EXC3 and EXC4 constituent products will require full traceability at all stages from receipt to handover of the works.
1.8 CLASSIFICATION OF TEST CERTIFICATES

Manufacturers of structural steel products provide a declaration that their products conform to the specified properties (yield strength, tensile strength, elongation etc) by supplying either a Type 2.2 ‘Test Report’ or a Type 3.1/3.2 ‘Inspection Certificate’ (formally called Test Certificates) in accordance with BS EN 10204.

- **INSPECTION CERTIFICATE 2.1 “Type 2.1”**
  Statement of compliance with the order by the manufacturer.
  Type 2.1 Certificates declares the manufacturers compliance to the standard the product is produced to but does not specifically inspect the product and does not normally include any test/sample results or CEV Values.

- **INSPECTION CERTIFICATE 2.2 “Type 2.2”**
  Statement of compliance with the order by the manufacturer based on non-specific inspections (tests) by the manufacturer.
  The Type 2.2 Test Report is a declaration by the manufacturer that its product results are ‘typical’ of product characteristics for that particular product type. Tests results are supplied on the certification based on initial type testing or sampling, but are not specifically tests on the material being supplied. This is formally referred to as “non specific testing”, and as such does not include Chemical Analysis or CEV values required for welding or galvanising.

- **INSPECTION CERTIFICATE 3.1 “Type 3.1”**
  Statement of compliance with the order by the manufacturer with results of specific inspection
  A Type 3.1 Test Cert is a declaration by the manufacturer that the products supplied are in compliance with the specifications supported by test results. The information given on a Type 3.1 Inspection Certificate are actual test results from the material in the lot/batch from which the steel products have been supplied (formally referred to as “specific testing”). The test unit and the tests to be carried out are defined by the product specification, the official regulation and corresponding rules and/or the order.

  A 3.1 Inspection Certificate is approved only by the manufacturers own representative who has to be independent from the manufacturing process (Test House Manager). Full Chemical Analysis is provided from the Mill from the cast the product was produced from, including CEV values.

- **INSPECTION CERTIFICATE 3.2 “Type 3.2”**
  Statement of compliance with order with indication of results of specific inspection
  A Type 3.2 Test Cert expands on 3.1 with the addition that the inspection document is also authorised by an independent 3rd party inspector designated by the official regulations and in which they declare that the testing and inspection process required by the specifications have been fully complied with.
**PART 2 - CONSTRUCTION PRODUCTS REGULATIONS AND FABRICATED STEELWORK 1ST JULY 2014**

**2.0 INTRODUCTION**

In order to be able to CE Mark the fabricated structural steelwork that they produce, steelwork contractors are required to declare performance to the System 2+ level of assessment (as described in Annex V of the CPR[1]). This requires them to undertake:

- Initial type-testing of the product
- FPC, which will include
  - implementation of FPC system procedures
  - appointment of a Responsible Welding Coordinator (RWC), if classified as execution class 2 and above
  - implementation of welding quality management system (WQMS) procedures
  - further testing of samples taken at the factory in accordance with the prescribed test plan

They must also be assessed by a notified body that will carry out:

- Initial inspection of the manufacturing plant
- Initial inspection of the FPC
- Continuous surveillance, assessment and approval of the FPC, which will typically include:
  - an annual audit to ensure continued competence to the declared Execution Class
  (Table B.3 of BS EN 1090-1[8] sets out minimum levels for the routine surveillance intervals)

The notified body will then issue a FPC certificate and Welding Certificate identifying the Execution Class that the steelwork contractor is approved to.

**2.1 CE MARKING OF FABRICATED PRODUCTS**

Contracts for fabricated structural steelwork to be delivered to site on or after 1st July 2014 must be CE certified. This certification includes the obligations of BS EN 1090-1 and BS EN 1090-2 on the steelwork contractor. It will therefore be a legal requirement for all fabricated structural steelwork delivered to site from that date to be CE Marked. However, products delivered direct to end site and fabricated onsite do not have a CE Marking stipulation and will rely solely on the CE and FPC credentials of the supplier.

BS EN 1090-1 requires that ALL structural material supplied conforms to BS EN 1090-2. The BCSA have developed a specific structural steel work specification for CE marking (NSSS V5 CE Marking Version) that incorporates the requirements of BS EN 1090-2. This requires that ALL Importers, Distributors, Manufacturers and Fabricators who change the original properties of a structural component are CE approved by an independent nominated body with a Factory Production Control System (FPC) and an ISO 9001 or equivalent quality system.

Changing the original properties includes but is not limited to, shotblasting, painting, cutting, cold forming, drilling, flame cutting, bending, rolling, marking welding etc.
2.1.1 BS EN 1090-1 and BS EN 1090-2

BS EN 1090-1 and BS EN 1090-2 require that ALL structural material supplied conforms to BS EN 1090-2 including NSSS V5 CE Marking Version and that all fabricated products comply in a similar manner. This will require that ALL Importers, Distributors, Manufactures and fabricators who change the original properties of a structural component are CE approved by an independent nominated body with a Factory Production Control System (FPC) and an ISO 9001 or equivalent quality system.

BS EN 1090-1 is the harmonised standard covering fabricated structural steelwork and covers the execution of steel structures and aluminium structures. Copies of the BS EN 1090-1 & 2 are available from the British Standards website http://shop.bsigroup.com/

Part 1 of the standard is the Requirements for Conformity Assessment of Structural Components. It describes how manufacturers can demonstrate that the components they produce meet the declared performance characteristics (the structural characteristics which make them fit for their particular use and function).

Part 2 is the Technical Requirements for Steel Structures. It specifies the requirements for the execution of steel structures to ensure adequate levels of mechanical resistance and stability, serviceability and durability. It determines the performance characteristics for components that the manufacturer must achieve and declare through the requirements of Part 1. It also covers other activities such as erection and bolting. Its scope is also very wide in that it covers all types of steel structures and structures subject to fatigue and seismic stress.

The requirements of part 2 are very similar to previous requirements and these are covered in detail in the BCSA NSSS (National Structural Steelwork Specification) V5 CE Marking Version. Copies are available from the website http://www.steelconstruction.org/

Undertaking projects to the NSSS should ensure that the steelwork complies with the provisions relevant to all types of building construction designed for static loading in EXC2 according to BS EN 1090-2.

With respect to CE Marking the relevant sections of BS EN 1090-2 are as follows:

- Documentation (clause 4 and Annex A);
- Constituent Steel Products (clauses 5, 12.1 and 12.2);
- Geometrical Tolerances (clauses 11 and 12.3 and Annex D);
- Welding and other fabrication operations (clauses 7, 6 and 12.4);
- Surface treatment for corrosion protection and durability (clauses 10 and 12.6 and Annex F).
- Welding / Welding Quality Management Systems / Welding Coordinator
- Execution Class
- Technical instructions
- Implementation
- Factory Production Control (FPC)
2.2 COMPLIANCE WITH THE CPR AND CE MARKING

In order for a steelwork contractor to demonstrate their right to CE Mark their products, they must be able to provide the following three documents:

1) Factory Production Control Certificate
2) Welding Certificate
3) Declaration of Performance

2.3 ROUTES TO GAINING CE APPROVAL

In order to be able to CE Mark the fabricated structural steelwork that they produce, steelwork contractors are required to declare performance to the System 2+ level of assessment. Only Notified Bodies are able to carry out certification assessment to award CE Marking (FPC and Welding Certificates).

Current approved notified bodies for any regulation are listed on the European Commissions website. With reference to BS EN 1090-1, the list of notified bodies can be viewed below:


Basic requirements that need to be addressed ready for assessment by the Notified Body:

1. A Quality Control system that is preferably compliant with BS EN ISO 9001
2. Factory Production Control (FPC) – Initial type testing and implementation of FPC system procedures
3. Employ/Subcontract and International Welding Engineer/Technologist (IWE/IWT) as a Responsible Welding Coordinator, if classified as execution class 2 and above.
4. A Welding Quality Management System (WQMS) is required that is in accordance with ISO 3834 and depending which part of this standard, 2, 3 or 4 you work to, determines which Execution Class you can work in.
5. Purchasing - All products covered by the CPR must be purchased CE Marked and come with the appropriate test certification as of 1st July 2013. Non Conformance of this will mean failure of the audit

Certification will generally be ongoing unless there are any changes to procedures and annual surveillance of the FPC is passed.
Before embarking on the route to CE Marking it is essential that steelwork contractors become familiar with BS EN 1090-1 and BS EN 1090-2.

Notes referred to in flow-chart
1. If your certified ISO 9001 is with a notified body then the FPC certification assessment is in lieu of one notified body ISO 9001 surveillance visit
2. If your certified ISO 9001 is with a notified body then the FPC surveillance visit in lieu of one notified body ISO 9001 surveillance visit

Definitions
QMS – Quality Management System  IWE – International Welding Engineer
PWS – Responsible Welding Coordinator  IWT – International Welding Technician

2.4 HOW LONG WILL IT TAKE TO GET A CERTIFIED FPC SYSTEM?

For those companies without certified BS EN ISO 9001 and certified BS EN ISO 3834 systems in place the process can take between 12 months and 2 years.

With a compliant ISO 9001 quality system in place, one of the biggest requirements is to have a certified Welding Quality Management System (WQMS to ISO 3834) and employ/subcontract a Responsible Welding Coordinator (RWC). The level of execution class you require to work to will depend on how detailed and skilled your WQMS will need to be. Due to these variables the process can take from 3 to 12 months.

3.0 COMPLIANCE

ParkerSteel are the first fully certified for ISO 9001 and CE Approved distributor and processor in the UK. Both our Canterbury and Shoreham depots are fully covered with a Factory Production Control system to Execution Class 4 – meaning we can process to the strictest standards.

We are fully compliant with all CPR requirements as a Distributor, Manufacturer and Importer and to the requirements of BS EN1090-1 and BS EN 1090-2 and have been approved by an independent assessment body effective from 1st July 2013 for all structural steel supplies, bolts and fasteners and pre fabrication processors of structural steel.

We are fully compliant with the BCSA standard conditions of supply and the National Structural Steelwork Specification V5 CE Marking Version for goods supplied to Execution Class 2, 3 and 4.
PART 3 - PARKERSTEEL: COMPLIANCE WITH THE CONSTRUCTION PRODUCT REGULATION

3.1 HOW WE COMPLY

- Our Suppliers
  - Our suppliers are audited on an annual basis to ensure their certification such as ISO 9001 and FPC certificates among other criteria are current.

- Documentation
  - We keep a full history of documentation for a minimum of 10 years. Current records go back over 25 years.
  - Test Certificates of CE products can be downloaded from our website whenever required. When you place an order with ParkerSteel, you have full traceability at your fingertips
  - Copies of all our current accreditation certificates are available to download

- Regular Auditing
  - Our ISO 9001 quality management system (QMS) accreditation and Factory Production Control (FPC) means that we are regularly audited by both the BSI and SCCS

- Initial Type Testing
  - The general principles behind evaluation of conformity are to use initial type testing and factory production controls measures. We have and will carry out regularly testing of all our processing to ensure they conform to the requirements.

- Factory Production Control (FPC)
  - Both our processing centres (Shoreham and Canterbury) are fully covered by FPC to ensure we can produce conforming products in regular ongoing production. The FPC is based on sampling being taken throughout the process meeting and recording the finding of the quality gates. For products of BS EN 10025-1 we use lot or cast tractability and normally these are 3.1 but in some products it could be only 2.1 certs (for Hollow Section S235, 3.1 type test certificates are not currently available). Many of these quality gates are audited by our BS EN ISO 9001 systems and ensure compliance and highlight any non conforming products.

- Dealing with Non Conforming Products
  - Non-conforming materials (whether due to defective material or defective documentation e.g. certificates) are controlled to prevent their sale or dispatch. When material is supplied to a customer, which does not conform to the specified requirements, but is accepted as non-conforming material, the description of the non conformity, that has been accepted, shall be recorded to denote the actual condition.

- Product Recall
  - In the event of manufacturers product recall, the Company is able to identify who has been supplied the recalled product, using the product recall facility on the computer. Customers will be notified of recall in writing and advised of necessary action. Those materials recalled will be quarantined and the manufacturer informed.
3.2 BCSA MODEL PURCHASE SPECIFICATIONS

ParkerSteel are compliant with BCSA model purchasing specifications for the supply of steel products and adheres to the standards of the National Structural Steelwork Specification for Buildings 5th edition (CE Marking Version)

Copies of the BCSA Model specifications for the Supply of Steel Products can be found at the BCSA website http://www.steelconstruction.org/
Our signed compliance can be downloaded at http://www.parkersteel.co.uk/dop

3.3 HOW CAN PARKERSTEEL HELP?

At time of writing ParkerSteel are the only steel stockholder and processor to have full CE Approval to Execution Class 4. This means no matter what the scale of the job, ParkerSteel can supply steel stock and processed steel to the Execution Class required and fully compliant to NSSS V5 CE.

Our processing machines have all been tested for conformance to the relevant Execution Class (Section 3.4). This can help benefit your business as it means laborious tasks such as marking out, drilling, cutting and coping etc can be supplied to any execution class required, leaving skilled personnel free to focus on more value adding services.

Our website also gives you access to Test Certs instantly, which means you can quickly and easily attain the relevant test certs for a job as/when required. (see page 28)
3.4 PROCESSING CONFORMITY

A stockholder may purchase and supply (non processed) material to EXC4 as long as the associated documentation is supplied to the relevant standard. However, as soon as the material is altered in anyway (this includes any of the processes below) the stockholder/processor immediately becomes the “manufacturer”. To supply CE marked material a FPC is therefore required and the processor will only be able to supply processed material to the maximum execution class their certification allows.

Our FPC certificate is valid up to Execution Class 4 (the highest) which means we can process material to any level. This request for execution class needs to be explicitly notified to us and this will commonly be detailed in your purchase order.

<table>
<thead>
<tr>
<th>Process</th>
<th>EXC1</th>
<th>EXC2</th>
<th>EXC3</th>
<th>EXC4</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sawing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Tolerance +/-2mm length</td>
</tr>
<tr>
<td>Shot blasting</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>To s.a 2.5 finish grey or red paint</td>
</tr>
<tr>
<td>Drilling</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Tolerance +/-2mm on location.</td>
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<tr>
<td>Etching</td>
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<td>✓</td>
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<td>✓</td>
<td>Unlimited number of numbers</td>
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<tr>
<td>Hard stamping</td>
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<td>Coping - Acetylene</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>** See 3.4.3</td>
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<tr>
<td>Coping - Plasma</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>** See 3.4.3</td>
</tr>
<tr>
<td>Shearing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Tolerance +/-2mm angles &amp; flat bar</td>
</tr>
<tr>
<td>Shearing</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td>Tolerance +/-2mm</td>
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<tr>
<td>Punching and Holing</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Punching is not recommended for Execution Class 3 or 4 ** See 3.4.2</td>
</tr>
<tr>
<td>Forming</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Above Grade S355 may need heat treatment</td>
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<td>✓</td>
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<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>** See 3.4.3</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Tolerance +/-2mm on position</td>
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</tbody>
</table>
3.4.1 Exclusion classes
- EXC1 - Farm buildings.
- EXC2 - Buildings (similar to the scope of the NSSS).
- EXC3 - Bridges.
- EXC4 - Special structures (power stations, long span bridges etc.).

3.4.2 Punching and holing*
Holes for fasteners or pins may be formed by any process (drilling, punching, laser, plasma or other thermal cutting) provided that this leaves a finished hole such that:

A) Cutting requirements relating to local hardness and quality of cut surface to 6.4 (BS EN1090-2) are fulfilled.
B) All material holes for fasteners or pins register with each other so that fasteners can be inserted freely through the assembled members in a direction at right angles to the faces in contact.

Punching is permitted provided that the nominal thickness of the component is not greater than the nominal diameter of the hole or for a non circular hole its minimum dimension.

For EXC1 and EXC2 holes may be formed by punching without reaming unless otherwise specified.

For EXC3 and EXC 4, punching without reaming is not permitted if the plate thickness is greater than 3mm then the hole will be punched at least 2mm undersize in diameter. For plate or sheet thickness less than or equal to 3mm the holes may be by full size punching.

When punching cut outs in plate over 16mm in thickness the deformed material shall be removed by grinding punched cut outs and not permitted for EXC4.

3.4.3 Cut outs and corners**
Over Cutting of re-entrant corners shall not be permitted. Re-entrant corners are those where the open angle between the faces is less than 180 deg.
Re-entrant corners and notches shall be rounded off with a of 10mm that will cover up to Exc Class 2 or higher

Figure 2 — Example of cut outs $r=10mm$

Key
1. Not permitted
2. Form A (recommended for fully mechanised or automatic cutting)
3. Form B (permitted)
3.5 CERTIFICATION - ISO 9001 – QUALITY MANAGEMENT SYSTEM

Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that: John Parker and Son Limited
Vauxhall Industrial Road
Canterbury
CT1 1HD
United Kingdom

Holds Certificate Number: RS 28966

and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

Steel fabrication, stockholding and supply of metals.

For and on behalf of BSI: Gary Fenton, Global Assurance Director

Originally registered: 17/08/1994
Latest Issue: 22/02/2013
Expiry Date: 21/01/2016

Page: 1 of 2
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<th>RS 28966</th>
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<td><strong>Registered Activities</strong></td>
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<td>Stockholding and supply of metals including fixings and fasteners.</td>
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<tr>
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<td>22/02/2013</td>
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</table>

This certificate was issued electronically and remains the property of BSI and is bound by the conditions of contract. An electronic certificate can be authenticated online. Printed copies can be validated at www.bsigmap.com/ClientDirectory.

Information and Contact: BSI, Kitemark Court, Davy Avenue, Knowlhill, Milton Keynes MK5 8PP. Tel: + 44 845 080 9000 BSI Assurance UK Limited, registered in England under number 7805321 at 389 Chiswick High Road, London W4 4AL, UK. A Member of the BSI Group of Companies.
EC Certificate of Factory Production Control (FPC)

2273 – CPR – 0025

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR)

It has been stated that the construction product:

Structural Components for Steel Structures

<table>
<thead>
<tr>
<th>Harmonised</th>
<th>Type / Execution Class of the Construction Product</th>
<th>Declaration Method</th>
</tr>
</thead>
</table>

placed on the market by

John Parker and Son Limited

and produced in the factory(ies)

Vauxhall Road, Canterbury, Kent, CT1 1HD

Fishgate Terminal, Basin Road South, Portishead, Brighton, BN41 1WF

is submitted by the manufacturer to the initial type-testing of the product, a factory production control and to the further testing of samples taken at the factory in accordance with a prescribed test plan and that the notified body No. 2273 – Steel Construction Certification Scheme Ltd. has performed the initial inspection of the factory and of the factory production control and performs the continuous surveillance, assessment and approval of the factory production control.

Attestation

This certificate attests that all provisions concerning the attestation of factory production control described in Annex 2A of the standard: BS EN 1090-1: 2009 + A1:2011 were applied.

Date of first issue: June 2012

Date of this issue: 13 May 2014

Date of next Surveillance: by 31 May 2016

Validity Period

This certificate remains valid as long as the conditions laid down in the harmonised standard in reference to the manufacturing conditions in the factory or the FPC itself are not modified significantly.

Chairman:

D Woodward

Scheme Manager:

SL Blackman
CE Marking and the Construction Product Regulation 2013 Issue v1.2

WELDING CERTIFICATE

SACS

Steel Construction Certification Scheme Limited
4 Whitehall Court, Westminster, London Sw1A 2ES
Tel: +44 (0) 20 7638 0960
Fax: +44 (0) 20 7747 8199
Email: scs@steelconstruction.org
www.steelconstruction.org

BS EN 1090-1:2009 + A1:2011
John Parker and Son Limited
Factory Production Control Schedule

Certificate number: 2273-CPR-0025

Product Type(s) / Range(s):
Universal beams and columns, rolled steel joists and channels
Rectangular, square and circular hollow sections
Sheet and plate

Parent material(s) (including quality levels):
Up to BS EN 10025 S355JR
Up to BS EN 10219 S355J0H
Up to BS EN 10025 S355J2

Execution class(es) (in accordance with BS EN 1993-1-2:2006): 1, 2, 3 and 4
Limitations (where applicable):
None

Welding Processes:
(As per EN ISO 4063)
None

Responsible Welding Co-ordinators:
(As per EN ISO 14731)
None

Date of first issue: June 2012
Date of this issue: 13 May 2014
Date of next Surveillance: by 31 May 2015

Validity Period:
This certificate remains valid as long as the conditions laid down in the technical specification in reference (in connection with BS EN 1090-1:2009+A1:2011) or the manufacturing conditions in the factory or the FPC itself are not modified significantly.

Chairman: D Woodhead
Scheme Manager: S L Beastman

Got a Question? Email us at support@parkersteel.co.uk
EDGE HARDNESS TEST CERTIFICATES

All our processing machines have UKAS Accredited verification in compliance with 1090-2. They include our Laser, Plasma, Profile, Gemini and Coping lines.

To view or download all our edge hardness test certificates please visit:

www.parkersteel.co.uk/dop
4.0 FREQUENTLY ASKED QUESTIONS

4.1 What is CE marking as required by the Construction Product Regulation?
CE marking is the record of the performance of the product as stated in the Declaration of Performance. From 1st July 2013 construction products in conformity with a Harmonised Standard (hEN) or a European Technical Assessment (ETA) must have CE marking.

4.2 Does material have to be physically marked ‘CE’?
No, CE Marking can be either affixed to the product, issued with accompanying documentation or made available on demand through electronic means.

4.3 What is the aim of CE marking?
The aim of CE marking in the steel industry is to harmonise the safety performance of construction products across the EU.

4.4 Who needs to comply?
• Importers of structural steelwork.
• Stockholders and Metal processors.
• Fabricators of Metal components that have a structural use in civil engineering

4.5 I use a Sub Contract Fabricator, how are they covered?
The sub contractor is covered under the main fabricators CE accreditation but it is his responsibility to ensure that all procedures for CE marking are carried out and that any sub contractor used is included in their Factory Production Control (FPC) system.

4.6 Does my FPC need to cover me for onsite fabrication?
No, CE Marking for fabrication only covers work carried out within your factory/fabrication premises. Work on site does not require fabricated structural steelwork to BSEN 1090 to be CE Marked. Note: This does not affect the products which must always come CE Marked.

4.7 Main Contactors Responsibility?
The main contractor or client should appoint a steelwork contractor with an Execution Class (1.5 page 5) equal to or higher than that required for the project. As determined in BS EN 1090-1.

4.8 When does it come into force?
• 1st July 2013 for construction products
• 1st July 2014 for fabricated structural steelwork to BS EN 1090-1

4.9 What is defined as a construction product?
Any product or kit (two or more products which are put together) placed on the market for incorporation in a permanent manner in construction works, the performance of which affects the performance of the construction works with respect to the seven Basic Requirements (see page 6).

4.10 What are the main products are covered?
The main products affected in steel construction are indicated on page 3 (1.1) but include hot rolled steel sections, plate, hollow sections, fixings, fasteners and welding consumables. Basically, if it’s due to used permanently as part of the structure it will need to be CE marked according to the CPR.
4.11 Can I still upgrade material?
Yes. A sample of the material will be sent to an independent test house, as long as the tests pass, the material can be upgraded to a higher specification. The test report will be supplied along with the original material inspection report.

4.12 What's the difference between CE and non-CE Steel products
For Steel Construction Products, not too much has changed, as for a number of years prior to the new regulations, material in the industry has been supplied to the harmonised standard (i.e. BS EN 10025-1). New CE requirements will mainly affect the paperwork (marking and labelling).

4.13 What's the difference between CE and non-CE Fixing & Fasteners Products
The CPR states that only bolts M12 and above in diameter require CE Marking. The majority of non preloaded bolts supplied into the industry prior to 1st July 2013 was to a worldwide DIN standard. These are now illegal to use as a structural bolt as defined in the CPR.
- For non preload bolts BS EN 15048 must be used – these will generally come ready assembled and the load bearing nut and bolt are subject to much stringent tests to ensure quality and performance. 3.1 certs generally issued, although 2.2 is acceptable. The easiest visual check is CE approved structural bolts will have 8.8SB stamped on the bolt head and nut.
- Pre-loaded bolts have generally been supplied to BS EN 14399 for a number of years, so this will not have as significant impact as long CE marking information (including test certs) is supplied.

4.14 Who is responsible for providing the CE marking information?
The manufacturer of the construction product who makes it available on the market.
Note: From July 2014, if you alter a CE marked product in any way (i.e. drill, cut, weld it etc) you become the manufacturer so must have a FPC system in place to allow you to “CE Mark” the product or kit.

4.15 How does a distributor who makes the product available on the market provide the CE marking information?
If the product has been transferred from the manufacturer to a distributor and the distributor has not changed the integrity or declared performance of the product in any way, the distributor must ensure that the product is issued with the manufacturer’s CE marking (inspection documents “test certs”). The Distributor must ensure full traceability of the product (ISO 9001).

4.16 Does a Test Cert mean a product is CE Approved?
On its own, No. The material must be purchased from a supplier with a quality management system (ISO 9001) which means the material is fully traceable back to source. If this is fulfilled and the product was placed on the market prior to 1st July 2013 this will still meet the requirements of the CPR - as long as the test cert is to the required standard (page 7).

4.17 How long do Declarations of Performance and the CE marking information have to be retained/filed by the manufacturer and distributor?
Technical documentation, Declarations of Performance and the CE marking information must be retained for a period of 10 years.
4.18 Does it apply if I don’t fabricate steel?
Yes, any product covered by a harmonised standard or ETA which has an end use in construction must be CE marked.

4.19 If I fabricate structural steelwork what do I need to do to comply?
From July 2013 any products you use in fabricating a component/kit for use in structural steel work must be CE marked when a harmonised standard exists.

From the 1st July 2014 fabricated steelwork require a CE mark. This means fabricators will not be able to fabricate any construction products without a FPC Cert for BS EN 1090-1, as by changing the integrity of the product they effectively become the manufacturer for the component or kit. This is covered in detail in 2.3 (pages 12 & 13). The basic requirements are:

- To have purchasing systems in place to ensure you buy only CE marked sections, bolts and welding consumables
- Install a Factory Production Control system
- Where welding is involved, a Welding Quality Management System (WQMS) is needed and to include the appointment of a Responsible Welding Coordinator
  - Your WQMS will need to cover you for the maximum Execution Class required
- Once the above is in place the Company is ready to become certified by a notified body, this can take up to 12 months to achieve.

An important note is that only fabrication carried out within your factory falls under the BS EN 1090 requirements for CE Marking. Work carried out on site is not covered by a FPC, therefore fabrication is not required to be CE marked to BS EN 1090-1. The construction products used must still be CE marked and traceable, work must be carried out to standards as set out in NSSS V5, but your final “kit of parts” fabricated on site does not fall under the same requirements to produce a declaration of performance & thus CE marking is not required.

4.20 What happens if I don’t comply?
The legislation is now law throughout the UK. As a steelwork contractor you will be responsible to conform to the regulations as set out in NSSS V5CE. This requires the construction product regulations and CE marking to be adhered to and if not are in breach of your contractual agreements and completion certificate.

As well as this if your purchasing systems are not in place, for simply not purchasing CE compliant bolts for example, you could also fail your FPC audit which would mean you fail any surveillance visits putting future contracts at risk.

4.21 How will it be enforced?
Legislation will be brought in 2013 to enable enforcement by the Trading Standards Authority, which will have the power to stop a business from trading until the company shows that it complies with the regulations. In severe cases the Directors may be imprisoned.

4.22 Does it just apply to “New Builds”?
No, the construction product regulation will apply to any work be carried out to UK building regulations.
4.23 If I purchase from Parkers will I be covered?
In a word, Yes. Any product you request for execution class 2+ will be CE Marked and the appropriate inspection report will be issued along with CE marked paperwork.

4.24 Are Parkers Covered to supply CE Marked Fabricated Products
Yes, we were among the first processors in the country to gain our Factory Production Control (FPC) Certification (page 19) which means we can fabricate the material and supply the goods with full CE Approval.

4.25 Is CE Marking anything to do with BREEAM?
No, BREEAM is an independently assessed method of building and sets the standard for the best practice in sustainable design. A BREEAM compliant building will be required to comply with UK building regulations and as such CE Marked material will still be required.

4.26 Will I need a test certificate for every item purchased?
No, a fabricator can ask the stockholders to hold the certificates and make them available when required. The Construction Products Regulations require Steelwork Contractors to retain the technical documentation (including CE marked Test Certificates) for a period of 10 years.

4.27 What is CEV?
This is the Carbon Equivalent Value and which is an indication of the materials weld ability. The steel specification states that the CEV must be .45 or below to conform.

The following list is a non-exhaustive list of items not covered by EN 1090:2009+A1:2011. This list was produced to provide clarity into commonly used items that the EU have deemed as not falling under the CE requirements of BS EN 1090. However, products may still require CE marking where a harmonised standard exists as a constituent product.
It is limited to the items on which there is CEN consensus:
• Aluminium and aluminium alloys – Structural products for construction works according to EN 15088
• Bearings and steel components used in bearings according to EN 1337
• Blind rivets
• Cabinets for cables and power supply installations
• Cables, ropes and wires
• Castings
• Circulation fixtures except sign gantry and cantilevers
• Cladding kits according to ETAG 034
• Cold formed steel tubes according to EN 10219-1
• Components for suspended ceilings
• Curtain walling according to EN 13830
• Doors
• Expansion joints for road bridges according to ETAG 032
• External blinds according to EN 13561
• Non structural fences and railings
• Fasteners glued to wooden structure
• Fastening plates and other cast into concrete fasteners not covered by design codes
• Flagpoles
4.28 List of items not covered by EN 1090:2009+A1:2011 (continued)

- Forgings
- Foundation bolts, column shoes
- Free-standing steel chimneys according to EN 13084-7
- Fully supported metal sheet for roofing, cladding and lining according to EN 14783
- Gates
- Hangers and brackets for masonry according to EN 845-1
- Hot finished steel tubes according to EN 10210-1
- Hot rolled steel flat products and sections according to EN 10025-1
- Industrial, commercial and garage doors and gates – without fire resistance or smoke control according to EN 13241-1
- Lightning columns according to EN 40-5
- Lintels for masonry according to EN 845-2
- Masonry anchors according to EN 845-1
- Metal anchors for use in concrete according to ETAG 001
- Metal anchors for use in masonry according to ETAG 029
- Metal chimneys according to EN 1856-1
- Metal frame building kits according to ETAG 025
- Metal framing components for plasterboard according to EN 14195
- Metal liners according to EN 1856-2
- Noise barriers (except their steel frame components) according to EN 14388
- Non-pre-loadable bolts according to EN 15048
- Ornamentations
- Pedestrian door sets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resistance and/or smoke control characteristics according prEN 16034
- Piles if non-fabricated
- Pipelines and pipes
- Powder actuated fasteners Prefabricated building units according to ETAG 023
- Prefabricated stair kits according to ETAG 008
- Prefabricated steel and stainless steel wire rope systems with end connectors
- Prefabricated tension rod systems with fork end connectors
- Pre-loadable bolts according to EN 14399-1
- Pressure vessels not incl. the supporting structure
- Rails or sleepers for railway systems
- Reinforcing steel for concrete or masonry
- Road parapets, crash barriers, crash cushions according to EN 1317-5
- Roof safety products incl. roof ladders and walkways
- Scaffoldings
- Sculptures (Metal Art)
- Self-drilling and self-tapping screws
- Self-supporting insulating panels (sandwich panels) according to EN 14509
- Self-supporting metal sheets for roofing, cladding and lining according to EN 14782 used in structural class III as defined in EN 1993-1-3 and EN 1999-1-4.
- Sheet piling according to prEN 10248-1 and prEN 10249-1
- Shutters according to EN 13659
- Stainless steel strip according to EN 10088-4
- Stainless steel bars, rods, wire, sections according to EN 10088-5
4.28 List of items not covered by EN 1090:2009+A1:2011 (continued)

- Steel and aluminium components and elements produced on work site
- Steel and aluminium stairs, walkways and fences forming integral part of a machine
- Steel beams for composite steel concrete structures not covered by design codes
- Steel casting for structural use according to EN 10340
- Steels for quenching and tempering for construction purposes according to EN 10343
- Steel lintels according to EN 845-2
- Structural components for the moving parts of cranes
- Structural components for offshore structures
- Structural metal faced sandwich panels
- Tanks - Workshop fabricated steel tanks according to EN 12285-2
- Traditional craft type and non-structural components (e.g. blacksmith making weather cocks, letter boxes, bicycle racks, fences)
- Traffic sign supports according to EN 12899-1
- Timber connectors according to EN 14545
- Timber dowel–type fasteners according to EN 14592.

1 An appropriate consultation among CEN members is still ongoing.
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- Access available online 24 hours after delivery
- Stored indefinitely for your convenience
- Search for your test certs by your job number, sales order or invoice
- You can also access test certs for all your fixings & fasteners

1) Login to your online account
2) Click on manage account
3) Select invoices, credits & certs
4) Use quick search filters or scroll to find order
5) Click on view test cert
6) Download or print your required test cert

Got a Question? Email us at support@parkersteel.co.uk
DETERMINATION OF THE EXECUTION CLASS

Determine the Execution Class in four stages:

Stage 1: Determine the Consequence Class

The reason behind categorising the Consequence Class is to ensure that buildings and other structures are constructed with the appropriate level of quality control within the fabrication process. Consequence Classes are derived by the type of building, i.e.: building height (Storeys), floor area per storey (for retail) and occupancy. A structure, or a part of it, could also contain components with different Consequence Classes.

Details for Consequence Class can be found under the BS EN 1990 guidelines in Table B1.

Examples of categorisation of building type and occupancy according to Consequence Classes that assist with the implementation of Annex B of BS EN 1990 can be found in Table A.1 of BS EN 1991-1-7

Stage 2: Define the Service Category

Service categories are the method used in BS EN 1090-2 to account for the risk from the actions to which the structure and its parts are likely to be exposed during construction and use, such as fatigue and likelihood of seismic actions. They also consider the stress levels in the components in relation to their resistance.

Table B.1 of BS EN 1090-2 determines Service categories but for most UK buildings, SC1 will be adequate.

Stage 3: Define the Production Category

Production categories are the method used in BS EN 1090-2 to consider the risk from the complexity of the fabrication of the structure and its components, e.g. application of particular techniques, procedures or controls.

Table B.2 of BS EN 1090-2 determines the production categories and it should be noted that a structure or part of a structure could contain components or structural details that belong to different production categories.

But, in all cases, the Execution Class is not sensitive to the Production Category selected.
DETERMINATION OF THE EXECUTION CLASS

Stage 4: Derive the Execution Class

Having decided the Consequence Class, Service Category and Production Category for a building, Table B.3 of BS EN 1090-2 gives the required Execution Class.

Table B.3 - Recommended Matrix for Determination of Execution Classes

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<tr>
<td></td>
<td>PC2</td>
<td>EXC2</td>
<td>EXC2</td>
</tr>
</tbody>
</table>

* EXC4 should be applied to special structures or structures with extreme consequences of a structural failure as required by national provisions.

Note:
Annex B of BS EN 1090-2 is classed as 'informative'. Therefore the approach described is not mandatory and the engineer can base the selection of Execution Class on experience provided they can support their decision.

EXC2 will be the appropriate requirement for the most of buildings constructed in the UK. Where no Execution Class is specified, Clause 4.1.2 of BS EN 1090-2 states that EXC2 will apply.

The engineer should always derive the Execution Class based on the design parameters appropriate to each project. The requirements to each Execution Class are listed in Table A3 of BS EN 1090-2 and can be reviewed by the engineer if desired.

However, the engineer should avoid over-specification of the Execution Class to avoid unnecessary costs. For example, EXC2 is the Execution Class derived for a project but the engineer requires full traceability (an EXC3 requirement) instead of the partial (or batch) traceability requirement of EXC2. Rather than specifying EXC3 on the basis of achieving this single Clause requirement, it is suggested that EXC2 is still specified but with the higher level of traceability added to the specification.