MODEL SPECIFICATION FOR THE PURCHASE OF STRUCTURAL STEEL SECTIONS, PLATES AND BARS

1.0 INTRODUCTION

This model specification is for the purchase of steel products and should be used in conjunction with the National Structural Steelwork Specification for Buildings 6th edition [NSSS6].

This specification applies to suppliers of steel products placed on the market as structural steel sections, plate or bars for the fabrication of structural steelwork. Both the supplier and purchaser of the products shall comply with this specification.

Acceptance by the purchaser of steel products from the supplier is conditional on the supplier complying with the full requirements of this specification.

2.0 DEFINITIONS

**Purchaser:** the company purchasing the steel products. Generally this is a steelwork contractor that executes the structural steelwork, undertaking the role of constructor defined in BS EN 1090-2

**Supplier:** the company supplying the steel products. The supplier may be the producer of the steel products, a steel stockholder/distributor, and/or a steel service centre. The supplier may be an importer

*NOTE: It is assumed that the natural or legal persons to the transaction are companies.*

**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. Original producers of steel products are manufacturers. Steel service centres may be manufacturers if the steel products are processed in accordance with BS EN 1090-2. Suppliers may also be manufacturers if they place the product on the EU market under their own name/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. Steel stockholders are distributors. Steel service centres are distributors if they do not act as manufacturers by processing the product in accordance with BS EN 1090-2

Importer: means any natural or legal person established within the European Union who places a construction product from a third country on the EU market

NOTE: The terms “agent” and “trader” are also common usage in the steel supply chain, but these terms are not formally recognised under this specification.

Inspection document: document issued by the manufacturer in which the manufacturer declares the products supplied are in compliance with the requirements of the order and/or relevant standard, and in which the manufacturer supplies supporting test results.

3.0 TECHNICAL SPECIFICATION

3.1 Steel products, dimensions and tolerances

At the time of order the purchaser shall specify the relevant standards from Tables 1 and 2 below, and the relevant steel grades and qualities, and whether any options allowed by the standard are to apply.

At the time of order the purchaser shall specify any other special requirements (e.g. a particular steel chemistry, or a particular limit on the carbon equivalent value).

a. Rolled sections, plates and bars

Steel rolled sections, plates or bars shall comply with the appropriate standard shown in Table 1. Dimensions and tolerances shall comply with the standards shown in Table 1.
### TABLE 1: ROLLED SECTIONS, PLATES OR BAR MATERIAL AND DIMENSION STANDARDS

<table>
<thead>
<tr>
<th>Form</th>
<th>Material Quality</th>
<th>Dimensions</th>
<th>Tolerances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-alloy steels</td>
<td>Fine grain steels</td>
<td>BS EN 10365</td>
<td>BS EN 10034</td>
</tr>
<tr>
<td>Fine grain steels</td>
<td>Fine grain steels</td>
<td>BS EN 10365</td>
<td>BS EN 10024</td>
</tr>
<tr>
<td>Weathering steels</td>
<td>BS EN 10025-2(1)</td>
<td>BS EN 10025-3(2)</td>
<td>BS EN 10025-4(3)</td>
</tr>
<tr>
<td>Channels</td>
<td>BS EN 10279(4)</td>
<td>BS EN 10279(4)</td>
<td>BS EN 10279(4)</td>
</tr>
<tr>
<td>Rolled Asymmetric Beams</td>
<td>BS EN 10056-1</td>
<td>BS EN 10056-1</td>
<td>BS EN 10056-1</td>
</tr>
<tr>
<td>Angles</td>
<td>BS EN 10055</td>
<td>BS EN 10055</td>
<td>BS EN 10055</td>
</tr>
<tr>
<td>Rolled Tees</td>
<td>BS 4-1</td>
<td>As UB &amp; UC</td>
<td>BS EN 10029</td>
</tr>
<tr>
<td>Split Tees</td>
<td>BS EN 10051</td>
<td>BS EN 10051</td>
<td>BS EN 10051</td>
</tr>
<tr>
<td>Plates (Reversing Mill)(5)</td>
<td>-</td>
<td>BS EN 10029</td>
<td>BS EN 10029</td>
</tr>
<tr>
<td>Plates (Cut from Coil)(5)</td>
<td>-</td>
<td>-</td>
<td>EU 91</td>
</tr>
<tr>
<td>Wide Flats</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

(1) Steel grades S275 and S355 in qualities JR, J0 and J2 and S355K2
(2) Steel grades S275, S355 and S420 in qualities N and NL.
(3) Steel grades S275, S355 and S420 in qualities M and ML.
(5) The scope of BS EN 10029 covers plates of 3mm up to 250mm rolled in a reversing mill process, whereas BS EN 10051 covers plates up to 25mm de-coiled from continuously hot-rolled uncoated flat products.
(6) See manufacturers information for rolled asymmetric beams.

### b. Structural hollow sections

Structural hollow sections shall comply with the appropriate standards shown in Table 2. Dimensions and tolerances shall comply with the standards shown in Table 2.

### TABLE 2: STRUCTURAL HOLLOW SECTIONS MATERIAL AND DIMENSION STANDARDS

<table>
<thead>
<tr>
<th>Form</th>
<th>Material Quality</th>
<th>Dimensions &amp; Tolerances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hollow Sections (Hot Finished)</td>
<td>BS EN 10210-1</td>
<td>BS EN 10210-2</td>
</tr>
<tr>
<td>Hollow Sections (Cold Formed)</td>
<td>BS EN 10219-1</td>
<td>BS EN 10219-2</td>
</tr>
</tbody>
</table>

(1) Hollow sections for use in constructional steelwork (both Hot Finished and Cold Formed) are supplied in steel grade S355.
NOTE: Selection of either BS EN 10210 or BS EN 10219 specifies whether structural hollow sections are to be hot finished or cold formed. Hot finished structural hollow sections to BS EN 10210 cannot be directly replaced with cold formed structural hollow sections to BS EN 10219 as the properties do not correspond directly.

3.2 Toughness

Unless otherwise specified in the purchaser’s order, the steel qualities shall be in accordance with the requirements as given in Table 3. Unless the purchaser’s order specifies otherwise, then it shall be assumed that the steel products are for use in internal steelwork.

<table>
<thead>
<tr>
<th>Internal steelwork</th>
<th>S275 JR</th>
<th>S275 J0</th>
<th>S275 J2</th>
<th>S355 JR</th>
<th>S355 J0</th>
<th>S355 J2</th>
</tr>
</thead>
<tbody>
<tr>
<td>S275</td>
<td>40</td>
<td>70</td>
<td>102.5</td>
<td>22.5</td>
<td>45</td>
<td>67.5</td>
</tr>
<tr>
<td>External steelwork</td>
<td>22.5</td>
<td>60</td>
<td>85</td>
<td>12.5</td>
<td>37.5</td>
<td>55</td>
</tr>
</tbody>
</table>

(1) Based on BS EN 1993-1-10 and PD 6695-1-10 assuming steelwork to be welded generally with details being ‘moderate’ and the presence of tensile stress.

Alternatively, a fracture mechanics approach that conforms to the recommendations given in BS EN 1993-1-10 may be used to determine the toughness requirements.

4.0 CE MARKING

All steel products manufactured to harmonised BS EN standards shall be supplied complete with the Declaration of Performance and CE Marking as follows:

- Steel sections to BS EN 10025-1
- Hot finished hollow sections to BS EN 10210-1
- Cold formed hollow sections to BS EN 10219-1
- Fabricated sections to BS EN 1090-1

The information on the Declaration of Performance and the CE Marking shall be legible and written in English. The Declaration of Performance may be provided in electronic format or made available on a web site.

5.0 PRODUCT TESTING

5.1 Testing by the original manufacturer

All steel products shall have been specifically tested and the manufacturer shall declare the results using an inspection certificate type 3.1 to BS EN 10204. Traceability by lot or cast shall be maintained for steel products when distributed through the supply chain.

NOTE: Clause 2.2.2 of NSSS6 does not allow steel to be supplied with non-specific type 2.2 test reports even though BS EN 10025-1 does for some grades/qualities.
5.2 Supplementary testing

Any supplementary tests carried out by the supplier to establish whether the mechanical properties of the steel products are appropriate for use shall be undertaken by a laboratory certified as competent to BS EN ISO IEC 17025 by a UKAS (or equivalent) accredited certification body. The tests shall be carried out in accordance with the requirements for mechanical properties given in BS EN 10025-1, BS EN 10210-1 and BS EN 10219-1 as appropriate and by reference to the test sample location standard ISO377.

The supplier shall provide to the purchaser a copy of the test report from the certified laboratory showing the supplementary test data, together with a copy of the Declaration of Performance, CE Marking and type 3.1 inspection certificate issued by the original steel product manufacturer.

6.0 QUALITY MANAGEMENT

6.1 Products supplied direct from the original manufacturer

The manufacturer shall have a quality management system with a suitable scope that complies with the requirements of BS EN ISO 9001 and is certified by a certification body accredited by UKAS or an equivalent approved body. Prior to order the manufacturer shall provide verification of BS EN ISO 9001 compliance to the purchaser.

The manufacturer shall have a system of receipt, despatch and delivery that ensures traceability from manufacture to point of delivery of the steel products to the purchaser. The manufacturer shall also have in place a system of marking that ensures traceability of individual bars or bundles back to either a cast number/s or inspection certificate. Marking may be achieved using durable and distinguishing marks applied in a way that will not damage the section/s (e.g. stencils, machine markings, scribing, colour codes etc.). Chiselled notches are not permitted. Hard stamped, punched and drilled marks may be used subject to the following requirements:

a) They are permitted only for steel grades up to and including S500,
b) They are not permitted for stainless steels, and
c) They shall only be used in the specified area where the marking method would not affect the fatigue life.

If hard stamps, punched or drilled marks is not permitted, the steelwork contractor shall specify whether soft or low stress stamps may be used.

6.2 Products supplied by a supplier who is not the original manufacturer

The supplier shall have a quality management system with a suitable scope that complies with the requirements of BS EN ISO 9001 and is certified by a certification body accredited by UKAS or an equivalent approved body. Prior to order the supplier shall provide verification of BS EN ISO 9001 compliance to the purchaser.
The supplier shall have a system of receipt, despatch and delivery that ensures traceability from manufacture to point of delivery of the steel products to the purchaser. The supplier shall have in place a system of marking that ensures traceability of individual bars/plates or bundles back to either a cast number or inspection certificate. The supplier shall also have a system in place that ensures traceability of individual bars/plates or bundles back to either cast number/s or inspection certificate/s. Marking may be achieved using durable and distinguishing marks applied in a way that will not damage the section/s (e.g. stencils, machine markings, scribing, colour codes etc.). Chiselled notches are not permitted. Hard stamped, punched and drilled marks may be used subject to the following requirements:

a) They are permitted only for steel grades up to and including S500,
b) They are not permitted for stainless steels, and

c) They shall only be used in the specified area where the marking method would not affect the fatigue life.

If hard stamps, punched or drilled marks is not permitted, the steelwork contractor shall specify whether soft or low stress stamps may be used.

If the supplier processes the steel products in accordance with BS EN 1090-2, then the supplier shall have in place a certified factory production control system issued by a notified body in accordance with BS EN 1090-1.

For material supplied to this specification the supplier shall only purchase steel products from original manufacturers or other suppliers with suitably certified BS EN ISO 9001 systems in place.

The supplier shall have a system in place for checking whether products being supplied are in accordance with the Declaration of Performance, CE Marking and relevant inspection documents and the appropriate product standards. If discrepancies are found the products shall be quarantined and the non-compliance recorded.

7.0 RECORDS

The supplier shall retain copies of the Declaration of Performance, CE Marking, inspection document and laboratory test report (if appropriate), and keep records of checks carried out on these documents and any non-conformance reports for a period of 10 years.

8.0 REFERENCES

The supplier and the purchaser shall have access to up-to-date copies of all the relevant standards referred to in this specification.

BCSA
18th April 2017
9.0 UNDERTAKING

I/we the undersigned agree to supply steel products in accordance with this specification and any variation from this agreement will be agrees in writing.

On behalf of supplier:

Company: ______________________________
Signed: ______________________________
Print: ______________________________
Date: ______________________________

On behalf of purchaser:

Company: ______________________________
Signed: ______________________________
Print: ______________________________
Date: ______________________________