BS 7668:2016

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Weldable structural steels – Hot finished structural hollow sections in weather resistant steels – Specification

bsi.

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 18, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 September 2016. It was prepared by Technical Committee ISE/103, *Structural steels other than reinforcements*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

This British Standard supersedes BS 7668:2004, which is withdrawn.

Information about this document

This standard applies to hot finished structural hollow sections with enhanced atmospheric corrosion resistance and includes grades that are not currently covered by BS EN 10210-1:2006 and BS EN 10210-2:2006. The grades in BS 7668:2016 are compatible with those of similar strength level in BS EN 10025-5:2004.

This is a full revision of the standard, and introduces the following principal changes:

- inspection documentation requirements updated (**4.2**, **7.1** and **7.2**);
- new grades introduced to ensure compatibility with those of similar strength level specified in BS EN 10025-5 and to reflect currently proposed future updates to BS EN 10210-1:2006;
- classification and designation updated to reflect the new grades;
- the use of open hearth steel prohibited where secondary steelmaking is not also applied;
- impact testing now based on BS EN ISO 148-1 using a 2 mm radius striker (**6.5.3**, **8.2.3.3** and **9.2.2**);
- repair of the weld in SAW hollow sections permitted;
- welding procedures updated;
- test unit requirements revised;
- tensile testing now based on BS EN ISO 6892-1 (**8.2.3.2** and **9.2.1**);
- amendments made to specified NDT requirements (**9.4.2** and **9.4.3**).

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Requirements in this standard are drafted in accordance with *Rules for the structure and drafting of UK standards*, subclause **J.1.1**, which states, "Requirements should be expressed using wording such as: 'When tested as described in Annex A, the product shall ...'". This means that only those products that are capable of passing the specified test will be deemed to conform to this standard.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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1 Scope

This British Standard specifies the technical delivery requirements for weldable weather resistant hot finished seamless, electric welded and submerged arc welded (longitudinal or helical) steel structural hollow sections of circular, square, rectangular or elliptical forms. It applies to hollow sections formed hot with or without subsequent heat treatment, or formed cold with a subsequent full body heat treatment to obtain equivalent metallurgical conditions to those obtained in a hot formed product.

The products are equally suitable for welded, bolted and riveted structures. The hollow sections specified in this British Standard are intended for use in construction or for general engineering purposes. Requirements for tolerances, dimensions and sectional properties are specified in BS EN 10210-2.

NOTE Four material grades are specified in this standard and the user should select the grade appropriate to the intended use and service conditions.

This British Standard does not apply to products currently covered by, BS EN 10210-1, BS EN 10219-1, BS EN 10219-2 or BS EN 10225. However, the grades in BS 7668:2016 are compatible with those of similar strength level specified in BS EN 10025-5.

In addition to the definitive requirements, this standard also requires the items detailed in Clause **4** to be documented. For compliance with this standard, both the definitive requirements and the documented items are to be satisfied.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 287-1, *Qualification test of welders — Fusion welding — Part 1: Steels*

BS EN 1011-1, *Welding — Recommendations for welding of metallic materials — Part 1: General guidance for arc welding*

BS EN 1011-2, *Welding — Recommendations for welding of metallic materials — Part 2: Arc welding of ferritic steels*

BS EN 10021, *General technical delivery requirements for steel products*

BS EN 10027-1, *Designation systems for steel — Part 1: Steel names*

BS EN 10052, *Vocabulary of heat treatment terms for ferrous products*

BS EN 10079, *Definition of steel products*

BS EN 10168, *Steel products — Inspection documents — List of information and description*

BS EN 10204, *Metallic products — Types of inspection documents*

BS EN 10210-2, *Hot finished structural hollow sections of non-alloy and fine grain steels — Part 2: Tolerances, dimensions and sectional properties*

BS EN ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

BS EN ISO 377, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing*

BS EN ISO 2566-1, *Steel — Conversion of elongation values — Part 1: Carbon and low alloy steels*