

**SINGAPORE STANDARD**  
**SS 311 : 2005**  
(ICS 77.140.75)

**SPECIFICATION FOR**  
**Steel tubes and fittings used**  
**in tubular scaffolding**

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## **Foreword**

This Singapore Standard was revised by the Technical Committee on Construction Management under the purview of the Building and Construction Standards Committee.

This standard lays down the requirements pertaining to steel quality and mechanical properties of the tubes (mild or high tensile steel) and fittings, the finishes and the requisite tests. It is a revision of SS 311 : 1994 'Specification for steel tubes and fittings used in tubular scaffolding'.

The changes include:

- (a) New clause on dimensional checks on steel tubes;
- (b) Dimensions and tolerances for a new type of 3.2 mm thick mild steel tubes (see Table 3);
- (c) New clause on 'Marking' of steel tubes;
- (d) Definition of the frequency of sampling for tubes and fittings for testing;
- (e) Updates on Table 1 'Chemical composition' and Table 2 'Mechanical properties' of steel tubes.

In preparing this standard, reference was made to:

- (1) BS EN 39 : 2001 Loose steel tubes for tube and coupler scaffolds – Technical delivery conditions
- (2) JIS A 8951 : 1995 Tubular steel scaffolds

Acknowledgement is made for the use of information from the above standards.

Attention is drawn to the possibility that some of the elements of this Singapore Standard may be the subject of patent rights. SPRING Singapore shall not be held responsible for identifying any or all of such patent rights.

### **NOTE**

- 1. *Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The changes in Singapore Standards are documented through the issue of either amendments or revisions.*
- 2. *Compliance with a Singapore Standard does not exempt users from legal obligations.*

## Specification for steel tubes and fittings used in tubular scaffolding

### 1 Scope

This Singapore Standard specifies the minimum requirements for steel tubes and related fittings for use in tubular scaffolding used as temporary structures for access or on which persons work and which provide support for the materials used. It is applicable to construction, maintenance, repair and demolition work in building, shipbuilding and repair, petrochemical and other industries.

### 2 Normative references

The following referenced standards are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the reference document (including any amendments) applies.

BS 970	Specification for wrought steels for mechanical and allied engineering purposes – Part 1 : General inspection and test procedures and specific requirements for carbon, carbon manganese, alloy and stainless steels
BS 1449	Steel plate, sheet and strip. Carbon and carbon-manganese plate, sheet and strip
BS EN 39 : 2001	Loose steel tubes for tube and coupler scaffolds – Technical delivery conditions
BS EN 10025	Hot-rolled products of non-alloy structural steels – Technical delivery conditions
BS EN 10113	Hot rolled products in weldable fine grain structural steels
ISO 1461	Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test methods
ISO 2409 : 1992	Paints and varnishes – Cross-cut test
ISO 4016	Hexagon head bolts – Product grade C
ISO 4018	Hexagon head screws – Product grade C
ISO 8492	Metallic materials – Tube – Flattening test
JIS A 8951 : 1995	Tubular steel scaffolds
JIS G 3444	Carbon steel tubes for general structural purposes
JIS Z 2201 : 1998	Zinc alloy ingot for die casting
JIS Z 2241	Method of tensile test for metallic materials
SS 5	Methods of test for paints, varnishes and related materials Part G1 : Determination of resistance to continuous neutral salt spray Part H3 : Designation of degree of rusting <sup>120</sup>
SS 280	Frame scaffolding
SS 456	Metallic materials – Tensile testing at ambient temperature