**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.



**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 rusting120 |
| SS 280 | Frame scaffolding |
| SS 456 | Metallic materials – Tensile testing at ambient temperature |