SINGAPORE STANDARD

SS 343 : Part 1 : 2001

(ICS 13.110)

SPECIFICATION FOR

Lifting gear

Part 1 : Wire rope slings

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Contents

Foreword

This Singapore Standard was prepared by the Technical Committee on Lifting and Hoisting Systems under the direction of the Mechanical Standards Committee. It has three parts as follows:

Part 1 : Wire rope slings

Part 2 : Hooks

Part 3 : Shackles

Under the Factories Act, wire rope slings, hooks and shackles are classified as lifting gear which must be inspected and tested by Approved Persons at regular intervals. The standard was first drawn up in 1989 to facilitate enforcement of the Act. As part of the process of regular updating, this standard was revised in 2001 to align its contents with prevailing practices to serve the needs of the industry.

The revision of this Part of the standard is primarily based on the following standards:

(a) BS 1290 : 1983 Wire rope slings and sling legs for general purposes

(b) ISO 7531 : 1987 Wire rope slings for general purposes – Characteristics and specifications

The following clauses and appendices in BS 1290 : 1983 are reproduced with the permission of British Standards Publishing Limited:

(a) Clauses 4 to 8 and Clause 10

(b) Appendices A and C

Reference was also made to the following documents:

(a) ISO 4778 : 1981 Chain links of welded construction – Grades M (4), S (6) and T (8)

(b) ISO 8792 : 1986 Wire rope slings – Safety criteria and inspection procedures for use

(c) The Factories Act, Cap. 104

Where necessary and appropriate, amendments were made to suit local requirements. In this revision, the requirements on testing and inspection have been made clearer and the responsibility of the owner is also emphasised.

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

NOTE

1. *Singapore Standards are subject to periodic review to keep abreast of technological changes and new technical developments. The revisions of Singapore Standards are announced through the issue of either amendment slips or revised editions.*

2. *Compliance with a Singapore Standard does not exempt users from legal obligations.*

Specification for lifting gear – Part 1 : Wire rope slings

1 Scope

This part of the standard specifies the dimensions, constructions, working load limits, testing and marking of wire rope slings for general lifting purposes.

It deals with slings with fibre or independent steel wire main core and having one, two, three or four legs of general engineering steel wire rope complying with the requirements of SS 297. The legs are constructed in ordinary lay wire rope, in the sizes and construction specified in SS 297 and in one of the following forms:

(a) Single-part terminated by hand-spliced or ferrule-secured eyes;

(b) Double-part hand-spliced or ferrule-secured endless;

(c) Double-part grommet.

For multi-legged slings, it shall have legs of equal nominal length, construction and diameter that are designed for use with the uniform load method of rating. Such slings are not intended to withstand greater loads at smaller included angles than those specified.

Annex A lists the information to be specified when ordering the sling.

NOTE – The titles of the publications referred to in this part of the standard are listed at the end of the standard.

2 Definitions

For the purpose of this Part of the standard, the following definitions shall apply:

2.1 Approved person

A person who is authorised by the Chief Inspector of Factories to conduct inspection, testing and certification of lifting gear.

2.2 Load

Encompasses the concept of either mass or force and is expressed in the appropriate units (e.g. In SWL, the term ‘load’ denotes a mass quantity, whereas in MBL, it denotes a force quantity).

2.3 Manufacturer

The company which fabricates wire rope slings in accordance with the requirements of this Part of the standard.

2.4 Minimum breaking load (MBL)

The load below which a sample of the rope will not break when tested to destruction in the prescribed manner.

NOTE – The theoretical value of the MBL is calculated from the product of the square of the nominal diameter of the rope, the tensile grade of the wire and a coefficient appropriate to the construction of the rope.