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(ICS 53.020.30; 77.140.65)

SINGAPORE STANDARD

Specification for lifting gear

– Part 1 : Wire rope slings

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This Singapore Standard was approved by the General Engineering and Safety Standards Committee on behalf of the Singapore Standards Council on 31 October 2014.

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The General Engineering and Safety Standards Committee, appointed by the Standards Council, consists of the following members:

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The Technical Committee on Safety and Health Involving the Use of Equipment, appointed by the General Engineering and Safety Standards Committee and responsible for the preparation of this standard, consists of representatives from the following organisations:

		Name	Capacity
Chairman	:	Assoc Prof Hoon Kay Hiang	*Member, General Engineering and Safety Standards Committee*
Secretary	:	Ms Julia Yeo	*Singapore Manufacturing Federation – Standards Development Organisation*
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		Mr Seah Chong An	*TÜV SÜD PSB Pte Ltd*
		Mr Alex Teo	*Association of Singapore Marine Industries*

The Working Group, appointed by the Technical Committee to assist in the preparation of this standard, comprises the following experts who contribute in their *individual capacity*:

		Name
Convenor	:	Mr Mohamad Japa Bin Rusdi
Members	:	Mr Chee Chee Chiat
		Assoc Prof Chew Chye Heng
		Mr Chia Chee Yong
		Mr Benjamin Dobbs
		Mr Han Kin Sew
		Er. Winson Lee Soo Hui
		Mr Eddie Seet
		Dr Sun Qiqing
		Mr Jason Tan
		Mr Jonathan Tan Aik Leong
		Mr Yeo Kim Hock

The organisations in which the experts of the Working Group are involved are:

Association of Singapore Marine Industries
Building and Construction Authority
Institution of Engineers, Singapore
Lifting Equipment Engineers Association
Ministry of Manpower
National University of Singapore
Singapore Contractors Association Limited
Singapore Institution of Safety Officers
Teho Ropes and Supplies Pte Ltd
TÜV SÜD PSB Pte Ltd
Workplace Safety and Health Council

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Contents

National Foreword

This Singapore Standard was prepared by the Working Group on Lifting Gear appointed by the Technical Committee on Safety and Health Involving the Use of Equipment under the direction of the General Engineering and Safety Standards Committee.

SS 343 consists of the following three parts, under the general title 'Specification for lifting gear':

- Part 1: Wire rope slings (Modified adoption of ISO 7531 : 1987 (2012))
- Part 2: Hooks (Modified adoption of ISO 7597 : 2013)
- Part 3: Shackles (Modified adoption of ISO 2415 : 2004)

This part of SS 343 is a modified adoption of ISO 7531 : 1987 (2012) – 'Wire rope slings for general purposes – Characteristics and specifications', published by the International Organization for Standardization.

The modifications are given as follows:

Clause	Modifications
3	*Add* 'See Annex ZA.' at the end of the clause. Explanation: More definitions were added in Annex ZA to provide a clearer understanding to the readers.
4.6	*Add* 'See Annex ZB.' at the end of the clause. Explanation: Annex ZB was added to provide more information on the wire rope sling terminations to the readers.
6	*Add* 'See Annex ZC.' at the end of the clause. Explanation: Annex ZC includes information on the testing and inspection of wire rope slings to suit local requirements and the needs of the industry.
7 and 8	*Add* 'See Annex ZD.' at the end of the clause. Explanation: Annex ZD contains information on the identification and marking of wire rope slings to suit local requirements and the needs of the industry.

Figure ZB.1 of this part of SS 343 is reproduced from Table 2 – 'Examples of single-leg slings and terminal fittings' of EN 13414-1:2003+A2:2008 'Steel wire rope slings – Safety – Part 1: Slings for general lifting service', with the permission of the European Committee for Standardization.

Attention is drawn to the following:

1. Where the words 'this International Standard' appear, they shall be read as 'this part of SS 343'.

2. The comma has been used throughout as a decimal marker in ISO 7531, whereas in Singapore Standards it is a practice to use a full-point on the baseline as the decimal marker.

In preparing this standard, reference was made to the following publications:

1.	ASME B30.9 : 2010	Slings. Safety standard for cableways, cranes, derricks, hoists, hooks, jacks and slings
2.	EN 13414-1 : 2003+A2:2008	Steel wire rope slings – Safety – Part 1: Slings for general lifting service
3.	ISO 2262 : 1984 (2009)	General purpose thimbles for use with steel wire ropes. Specification
4.	ISO 4778 : 1981 (2010)	Chain slings of welded construction. Grades M (4), S (6) and T (8)
5.	ISO 8792 : 1986 (2012)	Wire rope slings. Safety criteria and inspection procedures for use

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

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

NOTE

1. *Singapore Standards (SSs) and Technical References (TRs) are reviewed periodically to keep abreast of technical changes, technological developments and industry practices. The changes are documented through the issue of either amendments or revisions.*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7531 was prepared by Technical Committee ISO/TC 105, *Steel wire ropes.*

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

Specification for lifting gear – Part 1 : Wire rope slings

1 Scope and field of application

This International Standard specifies a series of wire rope slings for general purposes. It covers the type of sling, the working load limit, and the manufacture of slings and sling assemblies.

The multilegged slings covered by this International Standard are constructed with legs of equal nominal length.

NOTE - Slings of unequal leg length may also be constructed generally in accordance with this International Standard, but the rating of such slings requires special consideration by a competent person.

2 References

ISO 2408	Steel wire ropes for general purposes – Characteristics
ISO 8793	Steel wire ropes – Ferrule-secured eye terminations
ISO 8794	Steel wire ropes – Spliced eye terminations for slings