

SINGAPORE STANDARD

Steel wire ropes for hoisting

– Part 2 : Specification for selection of wire ropes

[ISO title : Cranes and lifting appliances – Selection of wire ropes – Part 1 : General]



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Contents

	Page
National Foreword.....	6
Foreword.....	7
1 Scope.....	8
2 Normative references	8
3 Terms and definitions.....	9
4 Type of rope.....	9
5 Duty conditions	9
6 Selection procedure.....	10
6.1 Calculation of <i>C</i> values.....	10
6.2 <i>Z_p</i> values.....	10
6.3 Calculation of minimum rope diameter	11
6.4 Calculation of minimum breaking force	11
7 Diameter of rope drums and sheaves.....	12
8 Stationary ropes.....	13
9 Dangerous conditions	13
10 Care, maintenance, examination and discard.....	13
Annex A (normative) Lifting appliances to which this part of ISO 4308 is applicable	14
Annex B (informative) Examples of wire rope selection	15
Annex C (informative) Other selection aspects.....	16
Annex D (normative) Hoists — Diameter of compensating sheaves.....	28
Bibliography	29

National Foreword

This Singapore Standard was prepared by the Working Group 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.

The review of SS 297 : 1996 – ‘Specification for steel wire ropes for hoisting’ and CP 35 : 1996 – ‘Code of practice for the selection, care and maintenance of steel wire ropes for hoisting’, resulted in the development of a new Singapore Standard, SS 595, which consists of the following three parts, under the general title ‘Steel wire ropes for hoisting’:

- Part 1 : Specification for steel wire ropes (Modified adoption of ISO 2408 : 2004)
- Part 2 : Specification for the selection of wire ropes (Identical adoption of ISO 4308-1 : 2003)
- Part 3 : Code of practice for the care, inspection and maintenance of steel wire ropes for hoisting (Modified adoption of ISO 4309 : 2010)

SS 595 is intended to replace SS 297 and CP 35.

This part of SS 595 is identical with ISO 4308-1 : 2003 – ‘Cranes and lifting appliances – Selection of wire ropes – Part 1 : General’, published by the International Organization for Standardization.

Attention is drawn to the following:

1. Where the words ‘this part of ISO 4308’ appear, they should be interpreted as ‘this part of SS 595’.
2. The comma has been used throughout as a decimal marker in ISO 4308-1, whereas in Singapore Standards it is a practice to use a full-point on the baseline as the decimal marker.
3. The reference to International Standards shall be replaced by the following Singapore Standards:

International Standard	Corresponding Singapore Standard
ISO 2408	SS 595 : Part 1
ISO 4309	SS 595 : Part 3

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.*
2. *An SS or TR is voluntary in nature except when it is made mandatory by a regulatory authority. It can also be cited in contracts making its application a business necessity. Users are advised to assess and determine whether the SS or TR is suitable for their intended use or purpose. If required, they should refer to the relevant professionals or experts for advice on the use of the document. Enterprise Singapore shall not be liable for any damages whether directly or indirectly suffered by anyone or any organisation as a result of the use of any SS or TR.*
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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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 4308-1 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 3, *Selection of wire ropes*.

This third edition cancels and replaces the second edition (ISO 4308-1:1986), which has been technically revised.

ISO 4308 consists of the following parts, under the general title *Cranes and lifting appliances — Selection of wire ropes*:

- *Part 1: General*
- *Part 2: Mobile cranes — Coefficient of utilization*

Steel wire ropes for hoisting – Part 2 : Specification for selection of wire ropes

1 Scope

This part of ISO 4308 specifies two methods for the selection of wire rope to be used on lifting appliances as designated in ISO 4306-1, one based on the value of the rope selection factor C and the other based on the value of the coefficient of utilization Z_p

This part of ISO 4308 establishes the minimum requirements for acceptable strength and performance levels of wire ropes with respect to the design, application and maintenance of the lifting appliance.

This part of ISO 4308-1 establishes the minimum requirements for the diameters of drums and sheaves that are to be associated with the selected wire rope.

A non-exhaustive list of types of lifting appliance to which this part of ISO 4308 is applicable is given in Annex A.

Annex B provides some examples of rope selection.

Annex C gives factors, additional to those mentioned above, which may need consideration when selecting the wire rope.

Annex D specifies the selection method for the diameter of the compensating sheave when used in relation to hoists.

2 Normative references

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

ISO 2408:1985, *Steel wire ropes for general purposes — Characteristics*

ISO 4301-1:1986, *Cranes and lifting appliances — Classification — Part 1: General*

ISO 4306-1:1990, *Cranes — Vocabulary — Part 1: General*

ISO 4309, *Cranes — Wire ropes — Care, maintenance (including installation), inspection*