



MALAYSIAN STANDARD

MS EN 13414-1:2012

Steel wire rope slings - Safety - Part 1: Slings for general lifting service

ICS: 53.020.30

Descriptors: wire rope slings, steel wire rope, safety, slings for lifting

FOR SALE WITHIN MALAYSIA ONLY

© Copyright 2012

DEPARTMENT OF STANDARDS MALAYSIA

DEVELOPMENT OF MALAYSIAN STANDARDS

The **Department of Standards Malaysia (STANDARDS MALAYSIA)** is the national standards and accreditation body of Malaysia.

The main function of STANDARDS MALAYSIA is to foster and promote standards, standardisation and accreditation as a means of advancing the national economy, promoting industrial efficiency and development, benefiting the health and safety of the public, protecting the consumers, facilitating domestic and international trade and furthering international cooperation in relation to standards and standardisation.

Malaysian Standards (MS) are developed through consensus by committees which comprise balanced representation of producers, users, consumers and others with relevant interests, as may be appropriate to the subject at hand. To the greatest extent possible, Malaysian Standards are aligned to or are adoption of international standards. Approval of a standard as a Malaysian Standard is governed by the Standards of Malaysia Act 1996 [Act 549]. Malaysian Standards are reviewed periodically. The use of Malaysian Standards is voluntary except in so far as they are made mandatory by regulatory authorities by means of regulations, local by-laws or any other similar ways.

STANDARDS MALAYSIA has appointed **SIRIM Berhad** as the agent to develop, distribute and sell the Malaysian Standards.

For further information on Malaysian Standards, please contact:

Department of Standards Malaysia
Ministry of Science, Technology and Innovation
Level 1 & 2, Block 2300, Century Square
Jalan Usahawan
63000 Cyberjaya
Selangor Darul Ehsan
MALAYSIA

Tel: 60 3 8318 0002
Fax: 60 3 8319 3131
<http://www.standardsmalaysia.gov.my>

E-mail: central@standardsmalaysia.gov.my

OR **SIRIM Berhad**
(Company No. 367474 - V)
1, Persiaran Dato' Menteri
Section 2, P.O. Box 7035
40700 Shah Alam
Selangor Darul Ehsan
MALAYSIA

Tel: 60 3 5544 6000
Fax: 60 3 5510 8095
<http://www.sirim.my>

E-mail: msonline@sirim.my

Committee representation

The Industry Standards Committee on Mechanical Engineering (ISC F) under whose authority this Malaysian Standard was adopted, comprises representatives from the following organisations:

Department of Occupational Safety and Health Malaysia
Department of Standards Malaysia
Jabatan Kerja Raya Malaysia
Machinery and Equipment Manufacturers' Association
Malaysian Industrial Development Authority
Malaysian Iron and Steel Industry Federation
Ministry of International Trade and Industry
National Institute of Occupational Safety and Health
Petroleum Nasional Berhad
Science and Technology Research Institute for Defence
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
Suruhanjaya Perkhidmatan Air Negara
Suruhanjaya Tenaga
The Institution of Engineers, Malaysia
Universiti Kebangsaan Malaysia
Universiti Malaya
Universiti Sains Malaysia
Universiti Teknologi Malaysia

The Technical Committee on Lifting Devices which recommended the adoption of the EN Standard as Malaysian Standard consists of representatives from the following organisations:

Construction Industry Development Board Malaysia
Department of Occupational Safety and Health Malaysia
Favelle Favco Cranes (M) Sdn Bhd
IKRAM QA Services Sdn Bhd
MHE-Demag Malaysia Sdn Bhd
MS Elevator Engineering Sdn Bhd
Northport (Malaysia) Berhad
SIRIM Berhad (Secretariat)
SIRIM QAS International Sdn Bhd
Southern Wire Industries (M) Sdn Bhd
Tenaga Nasional Berhad
The Institution of Engineers, Malaysia
Top Safe OSH Training Solution
Universiti Kebangsaan Malaysia

NATIONAL FOREWORD

The adoption of the EN Standard as a Malaysian Standard was recommended by the Technical Committee on Lifting Devices under the authority of the Industry Standards Committee on Mechanical Engineering.

This Malaysian Standard is identical with EN 13414-1:2003, *Steel wire rope slings - Safety - Part 1: Slings for general lifting service*, including its Amendment 1:2005 and Amendment 2:2008, published by the European Committee for Standardization (CEN). However, for the purposes of this Malaysian Standard, the following apply:

- a) in the source text, “this European Standard” should read “this Malaysian Standard”;
- b) the comma which is used as a decimal sign (if any), to read as a point;
- c) Annexes ZA and ZB have been removed, as these informative annexes are not relevant for application in Malaysia; and
- d) reference to European Standards should be replaced by corresponding Malaysian Standards as follows:

<u>Referenced European Standards</u>	<u>Corresponding Malaysian Standards</u>
EN 292-2:1991/A1:1995, <i>Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications</i>	MS ISO 12100-2, <i>Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles</i>
EN 13889, <i>Forged steel shackles for general lifting purposes - Dee shackles and bow shackles - Grade 6 - Safety</i>	MS ISO 2415, <i>Forged shackles for general lifting purposes - Dee shackles and bow shackles</i>

MS EN 13414 consists of the following parts, under the general title *Steel wire rope slings - Safety*:

Part 1: Slings for general lifting service

Part 2: Specification for information for use and maintenance to be provided by the manufacturer

Part 3: Grommets and cable-laid slings

This standard is published with the permission of the European Committee for Standardization. Such permission is hereby acknowledged.

Compliance with a Malaysian Standard does not of itself confer immunity from legal obligations.

English Version

Steel wire rope slings - Safety - Part 1: Slings for general lifting service

Elingues en câbles d'acier - Sécurité - Partie 1: Elingues pour applications générales de levage

Anschlagseile aus Stahldrahtseilen - Sicherheit - Teil 1: Anschlagseile für allgemeine Hebezwecke

This European Standard was approved by CEN on 26 June 2003 and includes Amendment 1 approved by CEN on 29 April 2005 and Amendment 2 approved by CEN on 18 September 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents	Page
Foreword.....	3
Introduction	4
1 Scope	4
2 Normative references	5
3 Terms and definitions	5
4 Hazards	6
Table 1 — Hazards and associated requirements.....	6
5 Safety requirements and/or measures	6
5.1 General.....	6
5.2 Single-leg sling	7
Table 2 — Examples of single-leg slings and terminal fittings.....	9
5.3 Ferrule-secured and spliced endless slings.....	10
5.4 Multi-leg sling.....	11
Figure 1 — Multi-leg slings	13
Table 3 — A_1 Working load limits for slings using fibre cored rope of classes 6x19 and 6x36 in grade 1770 and having ferrule-secured eye terminations A_1	14
Table 4 — A_2 Working load limits for slings using steel cored rope of classes 6x19, 6x36 and 8x36 in grade 1770 and having ferrule-secured eye terminations A_2	15
6 Verification of the safety requirements and/or measures	16
6.1 Components of the wire rope sling.....	16
6.2 Rope construction	16
6.3 Length of the sling.....	16
6.4 WLL of terminal fittings.....	16
6.5 Formation of a multi-leg sling	16
7 Information for use	16
7.1 Marking	16
7.2 Certification.....	17
Annex A (informative) Information which should be supplied with an enquiry or order.....	18
Annex B (informative) Rating of multi-leg slings for general service.....	19
Annex ZA (informative) A_2 Relationship between this European Standard and the Essential Requirements of EU Directive 98/37/EC A_2	20
Annex ZB (informative) A_2 Relationship between this European Standard and the Essential Requirements of EU Directive 2006/42/EC A_2	21
Bibliography	22

Foreword

This document (EN 13414-1:2003+A2:2008) has been prepared by Technical Committee CEN /TC 168, "Chains, ropes, webbing, slings and accessories - Safety", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2009, and conflicting national standards shall be withdrawn at the latest by December 2009.

This document supersedes EN 13414-1:2003.

This document includes Amendment 1, approved by CEN on 2005-04-29 and Amendment 2, approved by CEN on 2008-09-18.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A_1}$, $\boxed{A_3}$ and $\boxed{A_2}$, $\boxed{A_2}$.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports essential requirements of EU Directive(s).

$\boxed{A_2}$ For relationship with EU Directive(s), see informative Annexes ZA and ZB, which are integral parts of this document. $\boxed{A_2}$

The other Parts of this European Standard are:

- Part 2: Specification for information for use and maintenance to be provided by the manufacturer
- Part 3: Grommets and cable-laid slings

Annexes A and B are informative.

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.