



Machinery Directive now, and what is next ...

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Compliance with the Machinery Directive ...



Current hindrances



Relevant parts of MD 2006/42/EC

Definitions:

Article 2 (e)

‘chains, ropes and webbing’ means chains, ropes and webbing designed and constructed **for lifting purposes** as part of lifting machinery or lifting accessories;



Presumption of conformity ...

Compliance with harmonized standards (EN-standards) implies presumption of conformity with Machinery Directive



CE-marking can be added to a webbing, rope or round sling made with PA, PET or PP **ONLY** when tested according to EN 1492 standards

Compliance with **NON**-harmonized standards does **NOT** directly **imply** presumption of conformity with Machinery Directive



CE-marking can **NOT** be added to a webbing/rope/round sling made with fibres other than PA, PET, or PP (e.g. HMPE) in case such slings are **ONLY** tested according to a EN 1492 standard or non-harmonized standard

Relevant parts of MD 2006/42/EC

ESHR: Annex I chapter 4 (lifting operations):

- 4.1.2.4 - Pulleys, drums, wheels, ropes and chains
- 4.1.2.5 - Lifting accessories and their components

Annex I (ESHR) - chapter 4 (lifting operations)

4.1.2.4 - Pulleys, drums, wheels, ropes and chains

[...]

Complete ropes and their endings must have a working coefficient chosen in such a way as to guarantee **an adequate level of safety**.

As a general rule, this coefficient is equal to 5.

Lifting chains [...]. As a general rule, this coefficient is equal to 4.

In order to verify that an **adequate** working coefficient has been attained, the manufacturer [...] must [...] perform the **appropriate** tests or have such tests performed.



Relevant parts of MD 2006/42/EC

Annex I (ESHR) - chapter 4 (lifting operations)

4.1.2.5 - Lifting accessories and their components

[...]

(b) where **chains with welded links** are used, they must be of the short-link type. The working coefficient of chains [...] is, **as a general rule, equal to 4;**

(c) the working coefficient for **textile ropes or slings** is dependent on the material, method of manufacture, dimensions and use. This coefficient [...] is, **as a general rule, equal to 7,** provided the materials used are shown to be of **very good quality** and the **method of manufacture is appropriate to the intended use**. Should this not be the case, the coefficient is, as a general rule, set at a higher level in order to secure an equivalent level of safety. Textile ropes and slings must not include any knots, connections or splicing other than at the ends of the sling, except in the case of an endless sling;

(f) in order to verify that an adequate working coefficient has been attained, the manufacturer [...] **perform the appropriate tests or have such tests performed.**



Overarching challenges to remove hindrances when dealing with the Machinery Directive ...

Complexity Uncertainty Ambiguity

A closer examination of the hindrances ...



MD 2006/42/EC ...

Problem

Solution

Key questions

1



Problem - 1

Background

Currently available new textile materials and solutions allow for working coefficients lower than the 'general rules' laid down in **Annex I, clause 4.1.2.4. & 4.1.2.5**

Problem

Unclearity regarding deviation (incl. **downward** deviation) of working coefficients for textile ropes/chains/... and textile lifting accessories from the '**general rules**' (**resp. 5 or 7**) as laid down in MD Annex I clause 4.1.2.4 & 4.1.2.5

→ **unclearity in interpreting allowable working coefficients, AND limiting introduction of innovative solutions**

NOTE

problem relates to ropes for lifting purposes as part of lifting machinery, and textile components of lifting accessories, for which **NO harmonized standards** are yet available, which is very often the case.



Solution - 1

Source: “Guide to application of the Machinery Directive 2006/42/EC”

Elements from §340-341 of the guidance document:

- “... ensure an adequate level of safety ...”
- “... risk assessment by the manufacturer ...”
- “... more appropriate working coefficients ... are duly justified in the manufacturer’s technical file ...”

Solution

- Follow element from §340-341.
- Fulfill MD requirements by:
 - Approach driven by the final application, fit for intended purpose, and components being part of a system
 - Technical file (acceptance criteria, failure modes and risk assessments, ...) in accordance with Annex VII of MD

NOTE

Following the guidance document, we interpret more appropriate working coefficients as smaller **OR** larger than the ‘general rule’



Key question - 1

- Are working coefficients ***higher and/or lower*** than the ***'general rules'*** given in ***Annex I clause 4.1.2.4. & 4.1.2.5*** appropriate?
- Do solutions with working coefficients ***lower*** than the 'general rule' meet the MD requirements, ***provided the measures are taken*** as noted in the previous slide?
 - If ***NO***, how does Administrative Cooperation Group interpret ***§341*** from the guidance document regarding:
 - *"... ensure an adequate level of safety ..."*
 - *"... risk assessment by the manufacturer ..."*
 - *"... more appropriate working coefficients ... are duly justified in the manufacturer's technical file ..."*



MD 2006/42/EC ...

Problem

Solution

Key questions

2



Problem - 2

Definition:

chains, ropes and webbing designed and constructed **for lifting purposes** as part of lifting machinery or lifting accessories;

4.1.2.4 (“Pulleys, drums, wheels, ropes and chains”):

- Complete ropes and their endings ... (working coefficient = 5)
- Lifting chains ... (working coefficient = 4)

4.1.2.5 (“Lifting accessories and their components”):

- wire-rope/ rope-end combinations ... (working coefficient = 5)
- chains with welded links ... (working coefficient = 4)
- textile ropes or slings ... (working coefficient = 7)

→ **uncertainty and ambiguity in interpreting and understanding clauses 4.1.2.4 & 4.1.2.5**



Solution - 2

Proposed change to clause 4.1.2.4:

- Complete ropes and their endings **for lifting purposes as part of lifting machinery** must have a working coefficient chosen in such a way as to guarantee an adequate level of safety. As **'a general rule'**, this coefficient is equal to 5.

Proposed change to clause 4.1.2.5 (c):

- the working coefficient for **textile components of lifting accessories** is dependent on the material, method of manufacture, dimensions and use. This coefficient must be chosen in such a way as to guarantee an adequate level of safety; it is, as **'a general rule'**, equal to 7;



Key question - 2

- Would AdCo support the proposed changes to the Machinery Regulation?
- If **YES**, what is the best way forward?



Connecting to remove hindrances ...

Connecting with ...

- **EC Legal & Policy Officers**
- **EC Machinery Expert Group (EC MEG)**
- **EC Editorial Group (EC EdGr)**
- **EC Administrative Cooperation (EC AdCo) – Machinery Directive**
- **CEN TC168**

What is next ...

Initiatives running in parallel

- Continue trying to influence wording of the new Machinery Regulation (MR) via AdCo
- Achieve clarification in the Guidance document of the new Machinery Regulation (MR) via the Editorial Group (EdGr)
- Revision of existing and creating of new EN-standards via CEN TC168 WG3 – starting under the current Machinery Directive (MD), progressing under the new Machinery regulations

NOTE

Machinery Directive 2006/42/EC will become Machinery Regulation



EC MEG/EdGr/AdCo ...

- Status : ongoing
- EC Liaison Team: 1) Marc Eijssen (DSM)
2) Susanna Schiemer (Teufelberger)
3) Philippe Verschueren (Eurocord)
- Task at hand : getting support from Delegates of EU Member States for 'Problems/Solutions/Key questions' addressed, and integration in revision of 'Guide to the Application of the Machinery Directive' after issuing the new Machinery Regulation



CEN TC168 WG3 (reactivated) ...

- Scope : revision of existing and creation of new EN-standards for lifting accessories and components as part of lifting machinery
- Convenor : Mr. Werner Glasen (Spanset)
- Task at hand : 1) structural review of existing (EN 1492-1/1492-2/1492-4) and creation of new EN-standards (high-performance fibers)
2) adaptation to Machinery Regulation
- Focus : safety, reliability, long-term performance, adoption of innovations, and integration of sustainability (**NEW: integration of SDG's**)
- Who : YOU !!

SDG = Sustainability Development Goals as defined by United Nations





***Thanks a lot for
your attention***