Sling assessment and how to meet the requirements in the ISO standard

SAFER Handling Conference
BRISBANE
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I live in Lillehammer, Norway. (*Not* Sweden)

This is my wife in our “backyard”…

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Introduction

Choosing the right sling is essential to secure a safe and comfortable transfer for both the caregiver and the client.

It is important to make an individual assessment in every situation where a client is mechanical lifted.

Introduction, - Causes of hoisting incidents

Cause of incident	Number	%
Fall from hoist	99	61
Equipment failure	31	19
Incorrect equipment used	8	5
Left unattended	7	4
Hoist overturn	5	3
Others	13	8
Total	163	100

Reported incidents (2001-2007) to the Health & safety executive (HSE) in the UK, in which people have been injured while being moved using hoisting equipment
(Boulton 2009)

Causes of incidents

Fall from hoist

- Use of a sling that is too large, no adequate support, a large aperture
- Using toileting sling for all hoisting task, leading to lack of support
- Failing to attach or attach securely one or more loops/clips

Equipment failure

- Slings with damaged stitching, loops and clips
- “worn out” hoist

Incorrect equipment used

- Wrong size of sling, caused by appropriate sling was not being available
- Use of standing hoist, unsuitable for the patient

The requirements in the ISO Standard

The international standard for hoists and slings is the ISO 10535-2006.
Most manufacturers of hoists and slings are testing their products according to this standard.

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The requirements for body-support units

ISO 10535-2006

4 General requirements and test methods

4.4 Requirements for body-support units

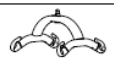
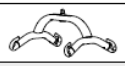
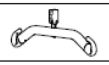
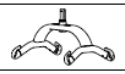
The manufacturer of the body-support unit shall indicate with which hoist(s) and spreader bar(s) it is compatible in order to ensure a safe combination

A combinationlist for spreaderbar & slings

The manufacturer of the body-support unit shall indicate with which hoist(s) and spreader bar(s) it is compatible in order to ensure a safe combination

Etac Molift RgoSling / www.molift.com / www.etac.com

Combination list

Suspension		Rgo Sling Medium back / Rgo Sling High back		
		XXS - XS	S - L	XL - XXL
Mover 180				
	2-pt Small 340mm	✔		
	2-pt Medium 440mm	✔	✔	
	2-pt Large 540mm		✔	
	4-pt Medium 440mm	✔	✔	✔
	4-pt Large 540mm		✔	✔
Mover 205				
	2-pt Small 340mm	✔		
	2-pt Medium 440mm	✔	✔	
	2-pt Large 540mm		✔	
	4-pt Medium 440mm	✔	✔	✔
	4-pt Large 540mm		✔	✔
Mover 300				
	4-pt Medium 440mm	✔	✔	✔
	4-pt Large 540mm		✔	✔
Partner 255				
	4-pt Medium 440mm	✔	✔	✔
	4-pt Large 540mm		✔	✔

Suspension		Rgo Sling Medium back / Rgo Sling High back		
		XXS - XS	S - L	XL - XXL
Smart				
	4-pt Medium 440mm	✔	✔	✔
Nomad				
	4-pt Medium	✔	✔	✔
Nova				
	2-pt Small	✔		
	2-pt Medium	✔	✔	
	2-pt Large		✔	
	4-pt Medium		✔	✔
	4-pt Large			✔

Slingguide

The size to choose depends partly on the user's weight, function and body circumference/size. SWL (Safe Working Load) 300 kg.

Size	Weight (Kg)
XXL	230-300
XL	160-240
L	90-160
M	45-95
S	25-50
XS	17-25
XXS	12-17

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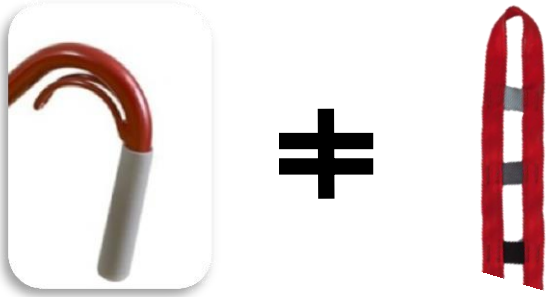
Non-compatible spreaderbars & slings

The connection points of the spreader-bar and the sling are compatible

Example of non-compatible connection points:



Requirements for risk assessment

ISO 10535-2006

8 Non-rigid body-support units – specific requirements and test methods

8.4.2 Instruction for use

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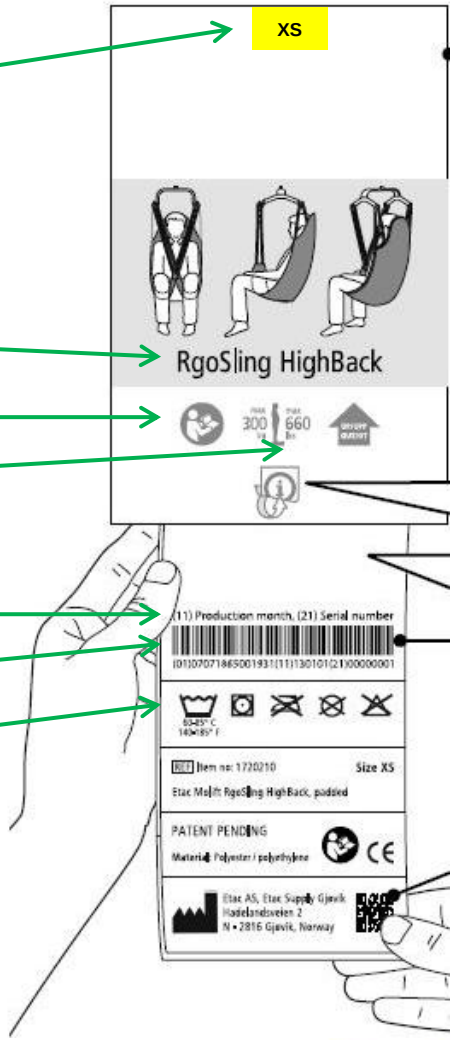
A statement shall be included, warning the user that a risk assessment shall be carried out to ensure that the correct size, type and shape of body-support unit is being used for the patient

Information required on the sling or in the User Manual

The demands in ISO 10535 – 2006

Minimum information on the sling:

- Size
- Model definition
- Attention mark referring to the instruction of use
- Maximum load
- Batch and/or serial number
- Year and month of manufacture
- Cleaning instruction
- If the sling is dedicated to use on one type of spreader bar



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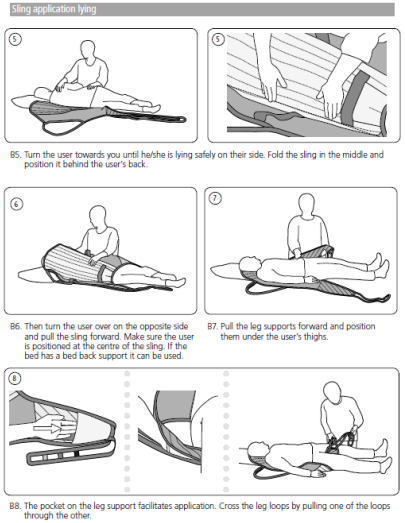
Information on the sling or in the User Manual

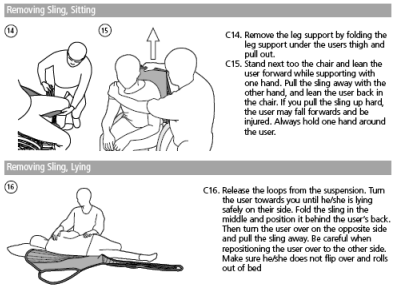
The demands in ISO 10535 – 2006

Information that are allowed given in the instruction of use:

- Field of application, direction of use
- The method of lifting
- Materials used
- A warning not to use a damaged or badly worn sling
- The method by which the sling can be removed
- A statement telling the carer that a risk assessment shall be carried out for each patient.



Never use a faulty or damaged sling as it can break and cause personal injury. Destroy and discard damaged and old slings



It is important that the sling has been tested with the individual user and for the intended lifting situation. Make a decision on whether one or more assistants are required.

Plan the lifting operation in advance to ensure that it is as safe and smooth as possible. Remember to work ergonomically.

Assess the risks and take notes. You as a carer are responsible for the safety of the user.

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Periodic Inspection

ISO 10535 – 2006, Annex B: 8 -11

B.8 Periodic inspection of the non-rigid body-support unit should be undertaken at the time intervals stated by the manufacturer, but at least every 6 months. More frequent inspections may be required where a non-rigid body-support unit is used or cleaned more frequently than normal.

B.9 Inspections should be performed by a person who is suitably and properly qualified and well acquainted with the design, use and care of the body-support unit.

The inspection should be to find signs of damage, wear or potential failure.

B.10 The inspection record should be retained safely for examination in the event of an incident.

B.11 The inspection record should include the following information:

— date of inspection;

— identification details and serial number of the body-support unit;

— information about the condition of the body-support unit;

— date next inspection is due;

— identification and signature of the inspector.


INTERNATIONAL STANDARD

ISO 10535

Second edition 2006-12-15

Hoists for the transfer of disabled persons — Requirements and test methods

Lève-personnes pour transférer des personnes handicapées — Exigences et méthodes d'essai

Reference number ISO 10535:2006(E)

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Periodic Inspection record

RgoSling

Periodic Inspection

According to ISO:10535 2006 Annex B

PI40001 Rev A 2013-08-15

Scope

Periodic inspection must be carried out at least every 6 months. More regular inspection may be required if the sling is used or washed more often than is normal. Inspection shall be performed by trained personell. Use this checklist to find signs of damage, wear or potential failure. Verify that the sling is safe to use until next periodic inspection. Inspection record should retained safely for examination in case of an accident.

⚠ Destroy and discard damaged and old slings that does not pass inspection.

Prouct Information (use list if more then one):

Sling Model: (Ex. Toilet lowback) ....

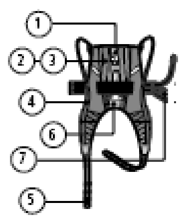
Art.No: ....

Size: ☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL

Serial no.: ....

Checklist

OK	Failure	N/A	
☐	☐		**1. Product label** It is possible to read; Maxload (SWL), Article no., Serial number, Size, Washing symbols.
☐	☐		**2. Fabric** No tears or frays, burnmarks, holes, color variations, bad smell or other signs of wear.
☐	☐	☐	**3. Padding** No shrinkage, bulks, bolds or folds.
☐	☐		**4. Seams** No loose threads, or damaged seams/stiches.
☐	☐	☐	**5. Lifting Straps and edge band** No tears or frays, stretchmarks, burnmarks or other signs of wear.
☐	☐	☐	**6. Guide handles and pockets** No tear, frays or loose stitches.
☐	☐	☐	**7. Details** Ladderlocks, buckles or rings have no damage or cracks
☐	☐		**8. User manual** User manual is available (User manuals can be downloaded from www.molift.com)



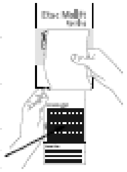
Approved by:

Check all 8 points in checklist. If one or more of the points has a failure, the sling is not approved for use.

Date: ....

Name of Inspector: (Capital letters) ....

Signature ....



Use permanent marker or hole punch to mark sling label with date of performed inspection. Next inspection is due within 6 months from this date.

Etac AS,
Etac Supply Gjøvik
Hadelandsveien 2,
2816 Gjøvik, Norway
Tel +47 4000 1004
molift@etac.com www.molift.com

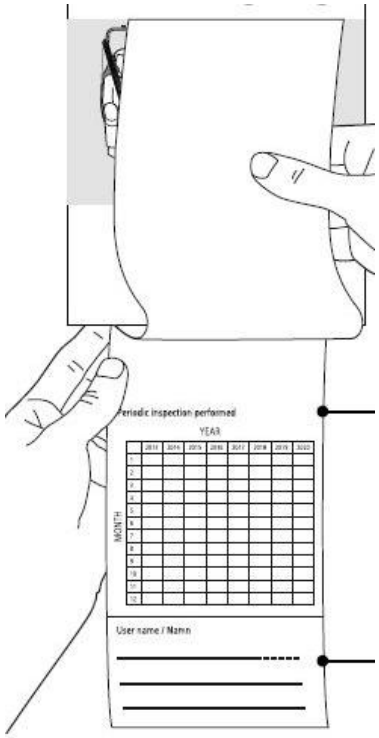
Product information List

Sling Model: (Ex. Toilet lowback)	Art.No:	Size:	Serial no.:	OK	Not OK
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐ ☐XXS XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			
		☐XXS ☐XS ☐S ☐M ☐L ☐XL ☐XXL			

⚠ Destroy and discard damaged and old slings that does not pass inspection.

Recording of periodic inspection on the sling

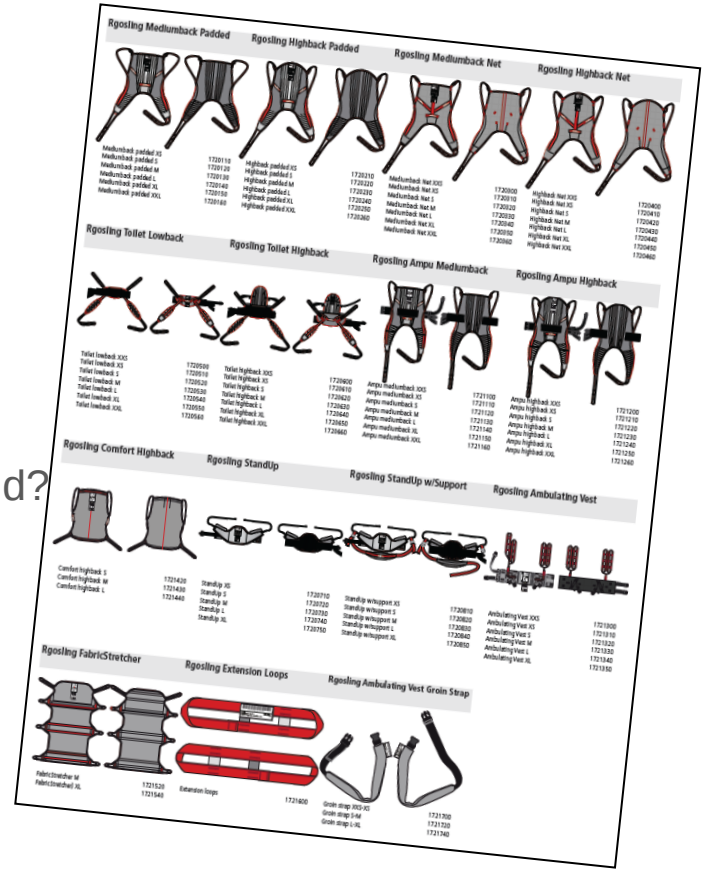
- Some manufacturer have a possibility to record the performed periodic inspection on the sling.
- Also a possibility to record when the sling is put into service for the first time



Sling Assessment

Considerations to make when choosing a sling

- The medical condition of the client
  - Does the client have muscle tonus?
  - Is the client able to sit without support?
  - Is the client able to sit at all?
  - Does the client have head control?
  - Does the client have involuntary movements?
  - Is the client able to understand and take command?
  - Does the patient have any decubitus?
  - Breathing affected?
  - Does the patient have leg amputees?
  - Pain issues?
  - How is the sensibility of the patient?



Sling Assessment

Considerations to make when choosing a sling

- What kind of lift will be used? Lifting height?
  - Over-head/ceiling lift
  - Floor-based lift
  - Sit to stand lift

- What environment the sling has to be used
  - Mainly in a dry environment
  - For bathing
  - In a toilet situation
  - in an area with high demands for infection control

- Which transfers will be done?
  - From sitting to sitting
  - From lying to sitting
  - Lifting to and from the floor

Sling Assessment

Considerations to make when choosing a sling

- The size of the sling
  - Consequences when the sling is too small
    - The sling is squeezing the client and thereby causing pain
    - The leg rest are too short
    - The backrest is too short
    - The lifting straps are too short and the spreader bar is in the face of the client
  - Consequences when the sling is too big
    - There is an increased tendency for the client to slide through the sling
    - The sling gives less support
    - The lifting straps are too long and the lifting height is compromised

Sling Assessment

Considerations to make when choosing a sling

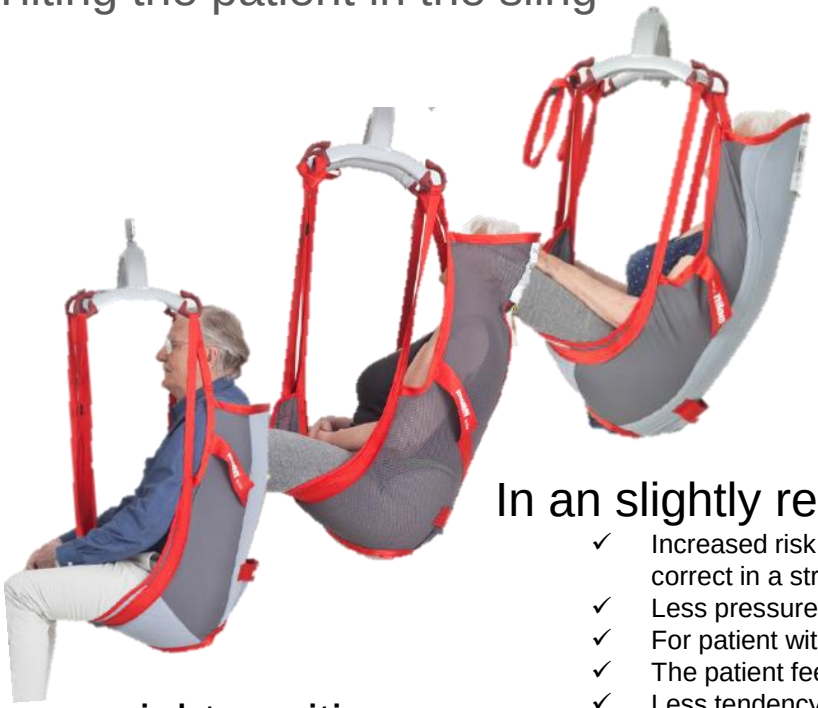
- The spreader bar 2, 3 or 4 point
  - Advantages with a 3 or 4 point spreader bar
    - Stability
    - More open space for the client
    - Highly recommended for bariatric users
    - Easy to reach the hooks when lifting from a lying position

- The spreader bar width
  - The width of the spreader bar can effect how much stability and support the sling gives the client
  - If the patient has pain over the shoulders a wider spreader bar can be helpful to avoid pressure.
  - During gait training, a spreader bar with a width of the shoulders gives a better support of the walking vest.

Sling Assessment

Considerations to make when choosing a sling

- Tilting the patient in the sling



In a reclined position

- ✓ Difficult to position the patient correct in a straight chair or toilet
- ✓ Tilt in space wheelchair is recommendable
- ✓ Less pressure on the legs – More on the back
- ✓ For patient with severe reduced upper body stability
- ✓ Less tendency to fall forward out of the sling
- ✓ Recommendable to use a HighBack sling

In an slightly reclined position

- ✓ Increased risk of not positioning the patient correct in a straight chair or toilet
- ✓ Less pressure on the legs – More on the back
- ✓ For patient with reduced upper body stability
- ✓ The patient feels more secure
- ✓ Less tendency to fall forward out of the sling

In an upright position

- ✓ Easier to access a straight chair or toilet
- ✓ A lot of pressure on the legs – less on the back
- ✓ The patient must have good upper body stability
- ✓ The patient could feel more insecure
- ✓ Tendency to fall forward out of the sling

References

BS EN ISO 10535:2006
Hoists for the transfer of disabled persons - Requirements and test methods
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The guide to the Handling of People a systems approach
6th edition
Published by the National Back Pain Assosiation

Arbeta med personlyft – skrift,
Reifeldt, Skebäck,
Published by HjälpmedelsCenter Väst 2009

Thank you for your attention!

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