



## Instructions for the safe use of Flat Woven Webbing Slings



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## **This information should be made available to the user of the equipment.**

This document is issued in accordance with the requirements of the Health and Safety at Work etc Act 1974, amended March 1988 and the Supply of Machinery (Safety) Regulations 2008 (Machinery Directive). It outlines the care and safe use of FLAT WOVEN WEBBING SLINGS commonly known as BELT SLINGS and is based on section 16 of the LEEA Code of Practice for the Safe Use of Lifting Equipment. It should be read in conjunction with the requirements for general purpose slinging detailed in this document, the principles of which may be applied to the use of belt slings.

The information is of a general nature only covering the main points for the safe use of man-made fibre belt slings which comply with standard BSEN1492-1 2000 CE. It may be necessary to supplement this information for specific applications.

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### **ALWAYS**

- Ensure that the operator is properly trained to use belt slings.
- Store and handle belt slings correctly.
- Inspect belt slings and accessories before use and before placing in storage.
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- Follow safe lifting practices as detailed in this document.
- Position the bight for a choke lift at 120° (natural angle).
- Position the sling so the load is uniformly spread over its width and protect the sling from sharp edges.
- Apply the correct mode factor for the slinging arrangement.
- Use protection to avoid cutting, friction etc and fittings which allow the sling to form smooth radii.

### **NEVER**

- Attempt to shorten, knot or tie belt slings.
  - Expose belt slings to direct heat or flames.
  - Use belt slings at temperatures above 80° or below 0° without consulting the supplier.
  - Expose belt slings to chemicals without consulting the supplier.
  - Shock load belt slings.
  - Use belt slings with cuts or which have loose or damaged stitching.
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## Selecting the correct Sling

Belt slings are available in a range of materials in endless sling form. Select the slings to be used and plan the lift taking the following into account:

Material – polyester is resistant to moderate strength acids but is damaged by alkalis; polyamide (Nylon) is virtually immune to alkalis but is damaged by acids; polypropylene is little affected by acids or alkalis but is damaged by some solvents, tars and paints.

Capacity – the sling must be both long enough and strong enough for the load and slinging method, apply the mode factor for the slinging method.

For use at temperatures above 80° or below 0° refer to the suppliers' instructions.

If the slings are to be used in a multi leg arrangement the angle formed between the legs should not be less than 30° or greater than 90°.

If abrasion, heat generated by friction or cutting from sharp edges which may damage the sling are likely then select a sling fitted with additional protective sleeves and/or use suitable packing material.

## Storing and Handling Belt Slings

Never return wet, damaged or contaminated slings to storage, they should be cleaned with clear water and dried naturally. Never force dry belt slings.

Store belt slings by hanging on non-rusting pegs which allow the free circulation of air.

The storage area should be dry, clean, free of any contaminants and shaded from direct sunlight.

Do not alter, modify or repair a roundsling but refer such matters to a competent person.

*Note: The material from which a roundsling is made may be identified by the colour of the label or printing on the label: Polyester = Blue, Polyamide (Nylon) = Green, Polypropylene = Brown. The outer sleeve of the sling will also be colour coded to indicate the SWL in a straight pull.*

## Using Belt Slings Safely

Do not attempt lifting operations unless you understand the use and limitations to use of the equipment, the slinging procedures and the mode factors to be applied.

Do not use defective slings or accessories.

Check for correct engagement with fittings and appliances ensure smooth radii are formed. Do not twist or cross slings and do not overcrowd fittings.

Position the sling so that the load is uniformly spread across its width.

Position the bight for a choke lift at 120° (natural angle) to prevent friction being generated.

Ensure that stitching is in the standing part of the sling away from hooks and other fittings.

Keep labels away from hooks and fittings.

Take the load steadily and avoid shock loads.

Do not leave suspended loads unattended. In an emergency cordon off the area.

## In service Inspection and Maintenance

Maintenance requirements are minimal. Roundslings may be cleaned with clear water. Remember that weak chemical solutions will become increasingly stronger by evaporation.

Regularly inspect roundslings and in the event of the following defects refer the sling to a competent person for thorough examination:

- Illegible markings
- Damaged chafed or cut webbing.
- Damaged or loose stitching.
- Heat damage.
- Burns.
- Chemical damage.
- Solar degradation.
- Damaged or deformed end fittings (where fitted).

**In the case of re-selling and/or hire of equipment, this information must be passed onto the end user**

Further information can be found in the Code of Practice for the Safe Use of Lifting Equipment published by the Lifting Equipment Engineers Association and available as a free download on [www.leeaint.com/downloads](http://www.leeaint.com/downloads)

## GENERAL PURPOSE SLINGING PRACTICE

The following information is based on Section 1 – Appendix 1.5 of the LEEA Code of Practice for the Safe Use of Lifting Equipment. It should be read in conjunction with the instructions for the safe use given previously of which it forms an integral part and with any specific instructions issued by the supplier.

This information is of a general nature only covering the main points for the safe use of various types of slings for general lifting purposes.

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### ALWAYS

- Plan the lift, establish the weight of the load and prepare the landing area ensuring it will take the weight.
- Check slings and equipment are free of damage, use slings/slinging methods suitable for the load and protect slings from sharp edges and corners.
- Attach the sling securely to the load and appliance and position hooks to face outwards.
- Ensure the load is balanced and will not tilt or fall.
- Keep fingers, toes etc clear when positioning slings and landing loads.
- Ensure the load is free to be lifted.
- Make a trial lift and trial lower.

### NEVER

- Use damaged slings or accessories.
  - Twist, knot or tie slings.
  - Hammer slings into position.
  - Overload slings due to the weight of the load or the mode of use.
  - Trap slings when landing the load.
  - Drag slings over floors etc or attempt to pull trapped slings from under loads.
  - Allow personnel to ride on loads.
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## Sling Configurations and Rating

Slings are available in single, two, three and four leg or endless form. In practice it will be found that chain, wire rope and fibre rope slings are available in any of these configurations, but that flat woven webbing is limited to single leg and endless while roundslings are only supplied in endless form. The maximum load a sling may lift in use will be governed by the slinging arrangement (mode of use) and may vary from the marked SWL. In the case of textile slings the SWL for the various modes of use is usually given on the information label. In other cases, it is necessary to multiply the marked SWL by a mode factor.

The following three simple rules will ensure that the sling is not overloaded. In some cases, this will mean that the sling will appear underutilised although this should not hinder the user. Where the maximum utilisation is required, reference should be made to the competent person who understands the factors involved and can perform the necessary calculations.

1. For straight lift never exceed the marked SWL and in the case of multi-leg slings the specified angle or range of angles
2. When using slings in choke hitch multiply the marked SWL by 0.8 to obtain the reduced maximum load the sling may lift (i.e., SWL-20%)
3. With multi leg slings when using less than the full number of legs, reduce the maximum load in proportion to the number of legs being used. Simply multiply the SWL by the number of legs being used as a proportion of the whole (e.g., using three legs of four is  $\frac{3}{4}$  SWL, one of two is  $\frac{1}{2}$  SWL etc.)

## Operator Training

Slings should only be used by trained operatives who understand the methods of rating and application of mode factors.

### Safe Use of Slings

Good slinging practice must ensure that the load is as safe and secure in the air as it was on the ground and that no harm is done to the load, lifting equipment other property or persons.

Establish the weight of the load, ensure the lifting method is suitable and inspect the slings and attachments for obvious defects. Prepare the landing area making sure the floor is strong enough to take the load. Follow any specific instructions from the supplier.

Ensure the lifting point is over the centre of gravity. Any loose parts of the load should be removed or secured. Attach the slings firmly to the load onto lifting points or shackles etc. The sling must not be twisted, knotted or kinked in any way.

Use packing to protect the sling from damage and to protect the load.

Do not exceed the SWL or rated angle. Any choke angle must not exceed 120° and any basket 90°.

Do not hammer, force or wedge slings or accessories into position, they must fit freely.

When attaching more than one sling to the lifting appliance hook use a shackle to join the slings and avoid overcrowding the hook.

Use an established code of signals to instruct the crane driver.

Ensure the load is free to be lifted and not fixed down.

Check for overhead obstructions such as power lines.

Keep fingers, toes etc clear to ensure they do not get trapped.

Make a trial lift by raising the load a little to check for balance, stability and security., if not, lower and adjust the slinging arrangement.

Where appropriate use a tag line to control the load.

Except where special provision is made do not allow anyone to pass under or ride upon the load. Keep the area clear.

Make a trial set down, ensuring the slings will not become trapped and the load will not tip once the slings are released. Use supports which are strong enough to sustain the load without crushing.

Never drag slings across floors or attempt to a trapped sling from under a load. Never use a sling to drag a load.

Place the hooks of free legs back onto the master link and take care to ensure that empty hooks do not become accidentally caught.

Never use slings in contact with chemicals or heat without the manufacturer's approval. Never use damaged or contaminated slings.

On completion of the lift return all equipment to proper storage.