SELDIS polysteen

PRODUCT INFORMATION

USER INFORMATION

Fibre rope lifting slings in service

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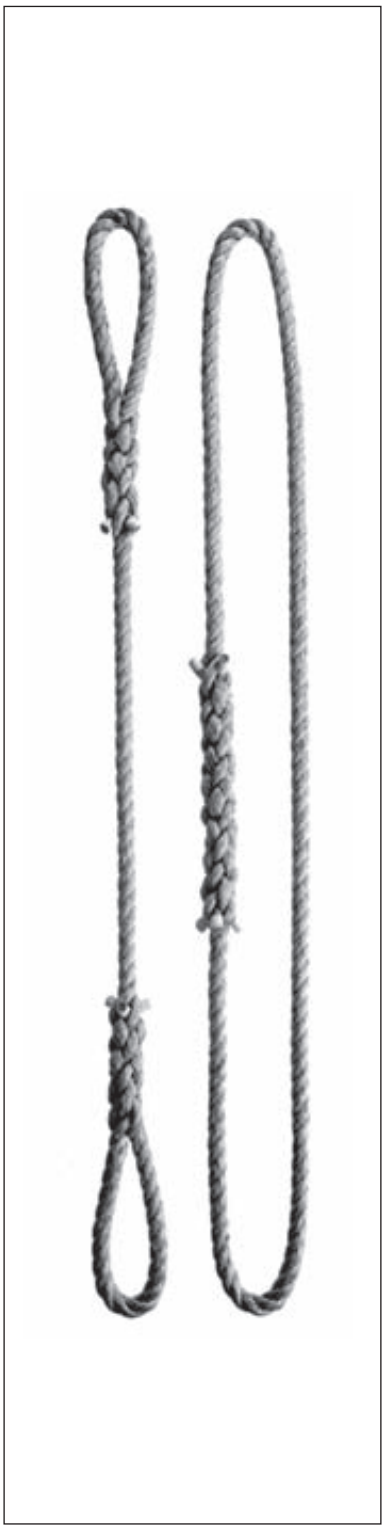
Usage guidelines



Service
Fibre rope lifting slings must only be used for lifting loads and only by trained personnel in consideration of existing safety regulations and working conditions.

Working load limit
The working load limit is the weight a lifted object must never exceed. It is derived from the minimum breaking strength of the rope divided by the design factor (safety factor normally = 7), multiplied by the mode factor. The mode factor is dependent, amongst others, on the tilt angle (maximum 60°) for endless or multileg slings. Where the load symmetry (even load distribution, central point of gravity) is not guaranteed for a multileg sling lifting operation, a maximum of two legs as load bearers must be assumed, based on the widest tilt angle, rather than for all legs.

Size
Fibre rope lifting slings with a diameter less than 16mm are not permissible. The length of a sling rope is the distance between the lifting points (incl. fittings). The aperture angle of loops must not exceed 30°. The free rope length between splices must not be less than 20d (d = rope diameter).

Rope connections and fittings
Rope connections must be spliced. Splices must conform to existing standards and be performed by trained personnel. Knots and other methods of connection are not permissible. The bending radius of the rope over hardware fittings must be no less than 0.5d. Thimbles might be needed if end loops are used.

Marking
To the extent that local regulations do not call for additional details, fibre rope lifting slings must be permanently labelled with manufacturer's trademark, dimensions, material, working load limit (WLL), date of manufacture, and tracing code. Material colour codes are as follows: green for polyamide, blue for polyester, brown for polypropylene, and white for all natural fibres.

Storage and maintenance
Before and during storage

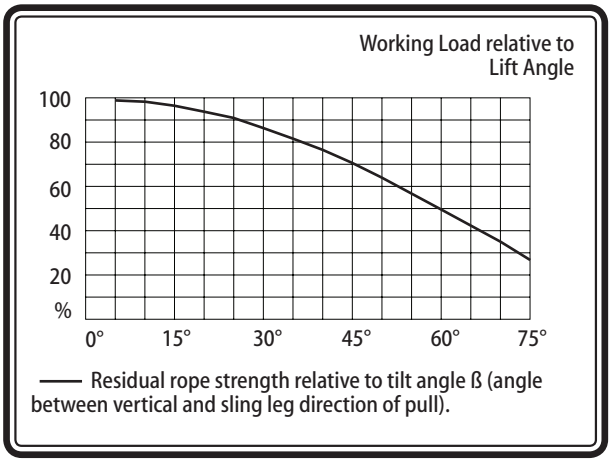
- Examine for damage; do not store damaged slings
- Rinse soiled fibre rope with water; use chemical detergents only after consultation with rope manufacturer or supplier
- Protect stored slings from dirt (e.g. storage on shelves), extreme warmth, dampness, chemicals, corroded surfaces, UV radiation and poor ventilation

Repairs must be performed by trained personnel only.

Inspection
Before first and every subsequent use a visual inspection must be performed to establish suitability for required purpose and absence of damage. Inspection should be conducted regularly, at least once a year by trained personnel. In the event of any damage or deformation of rope material and/or fittings the rope must be removed from service.

Precautions

- Do not use slings with illegible or missing markings
- The load to be lifted must be free to move; avoid swinging, tilting, slipping or dropping through choice of a suitable fastening, trial lift or repositioning of lifting points, use of guide ropes, spreaders or beams, avoid sudden or jerky movements
- Do not knot ropes
- Contact areas must be outside splices or fittings
- Do not pull unprotected ropes over sharp edges (if necessary use edge protectors)
- Do not expose ropes to permanent UV radiation



—— Residual rope strength relative to tilt angle ß (angle between vertical and sling leg direction of pull).

- Working load limit (WLL) is reduced if
  - non-symmetrical (uneven) load
  - choke lift
  - operating temperature outside -40° to +80° for polypropylene or natural fibre ropes, or -40° to +100° for all other ropes
- Do not wind out twisted ropes under strain
- If rope is wound around load several times ensure rope turns are parallel to each other (no crossing)
- Avoid tilt angles (ß) of less than 15° (risk of unstable load suspension)
- Pay attention to rope material sensitivities:
  - polyamide with mineral acids
  - polyester with alkalis
  - polypropylene with some organic solutions, rarely with acids and alkalis; light (if not UV-stabilised)
  - natural fibres with mould (after lengthy rainfall period), acids and alkalis
  - chemical fibres, especially chafing with polypropylene

Repairs must only be performed by trained personnel.

Removal from service
Discard in the event of:

- Broken strand
- Missing or incomplete marking
- Breakage of more than 10% of yarns in the rope cross-section
- Formation of kinks
- Heavy mechanical wear (more than 10% cross section loss)
- Melting signs on chemical fibre ropes (more than 10% cross section loss)
- Inner wear after intensive bending and pulling strain in association with internal outside substance contact (sand, water, ice)
- Shedding of fibre dust in natural fibre ropes
- Destruction of more than 10% of the yarns as a result of chemical influences (split, pulverised)
- Signs of rotting in natural fibre ropes (discoloration, fungus/mould formation, musty smell)
- Loosening of splices, if proper reconstruction no longer possible
- Destroyed, deformed, damaged fitting parts

General
Further information on 'Storage and maintenance' can be found on the pages 'Textile ropes in perspective' and 'Textile ropes in service'.

These usage guidelines are based on existing European recommendations and standards. Further to these, consideration should also be taken of applicable local, national and international legislation, standards, directives and regulations from official societies (professional organisations, classification bodies, etc.) with regard to equipment safety (personal protection, industrial safety, accident prevention), as well as recommendations and operating instructions from manufacturers and/or operators of the equipment being used (lifting gear, conveyor systems, etc.).

You are advised to consult the manufacturer or supplier if in doubt about properties of rope, conditions of usage and safety requirements.