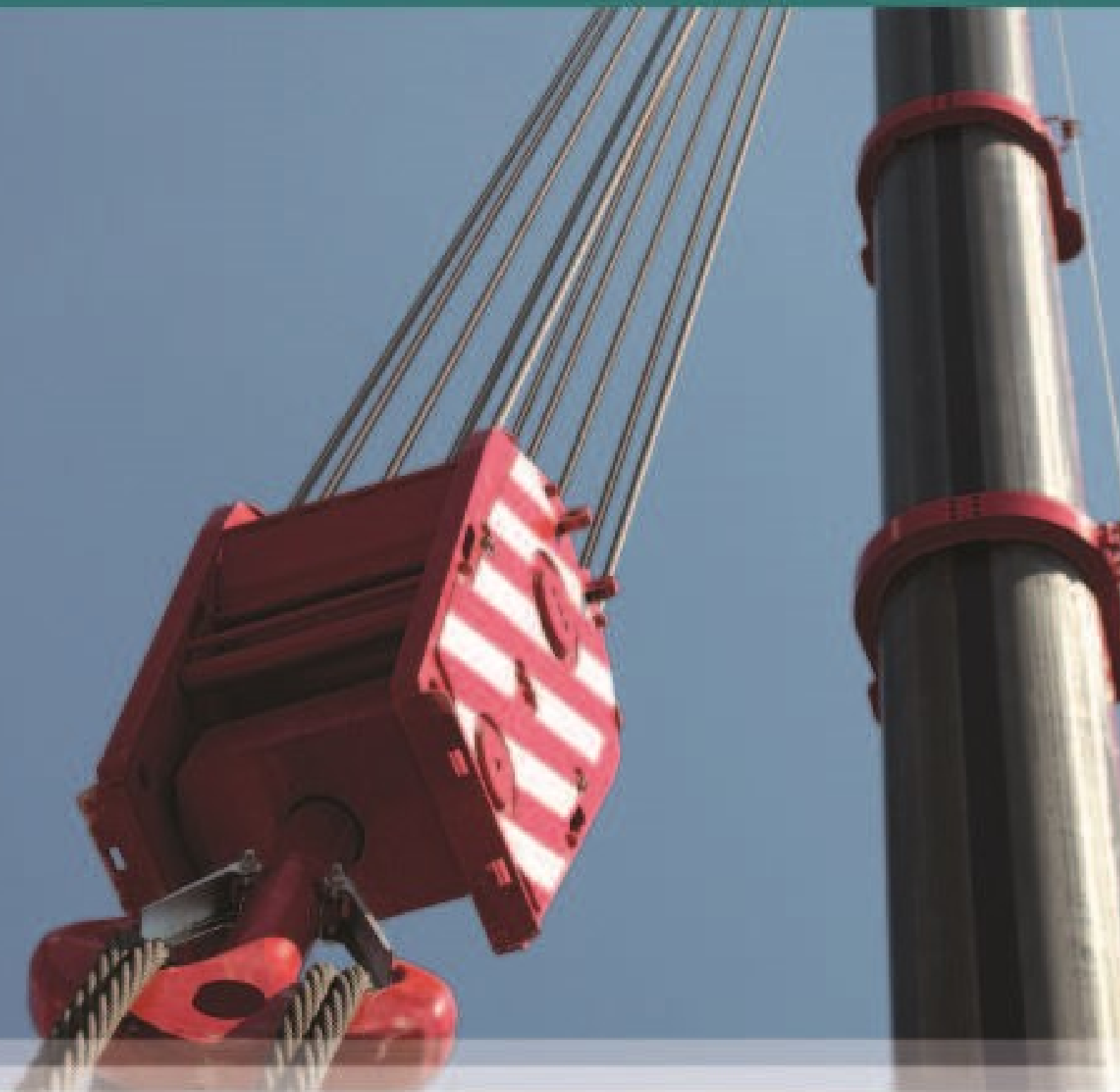


# Steelwire rope and accessories



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**Chapter 1**

## Steel wire rope and accessories

Crane steel wire ropes

Elevator ropes

Steel wire rope slings

General ropes

Braided wire rope slings

Grommet sling

Container wire slings

Thimbles

Ferrule

Wire rope clamps

Wedge sockets

Spelter sockets

Turnbuckles

Cable socks

Tighten clamps

Rigging screws

Blocks

Wire rope sheaves

Wire rope cutter

Crimping tools

Wire corner protection

Lubricants

Technical description

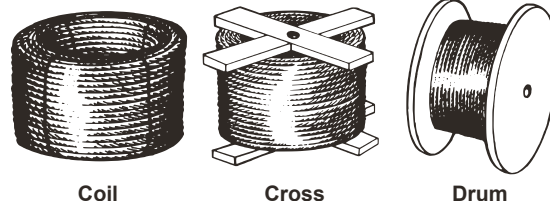
**Symbols**

 Right hand langs lay on request	 Right hand langs lay	 Left hand langs lay on request
 Left hand langs lay	 Ordinary right hand lay on request	 Ordinary right hand lay
 Ordinary left hand lay on request	 Ordinary left hand lay	 Right spiral strand
 Left spiral strand	 Hammered rope	 Double parallel lay construction
 Compacted strands	 Rotation resistant	 Not for lifting
 Can be used with swivel	 Can not be used with swivel	 Galvanized
 Galvanized on request	 Bright oiled	 Bright oiled on request
 Stainless steel	 Fill factor	 Maks. arbeidstemperatur
 Tolerance +2% - +4%	 Rope Category Number)	
 Tower crane	 Mobile crane	 Wire rope
 Kranbil	 Loading crane	 Elevator rope
 Mobile port crane	 Lattice	 Overhead cranes
 Piling crane	 Container crane	 Offshore crane

## Use and maintenance

### Packing

Wire rope is generally delivered in a coil, plywood or wooden reel. On the European mainland a cross reel is also common. Please specify packaging when ordering.



Coil

Cross

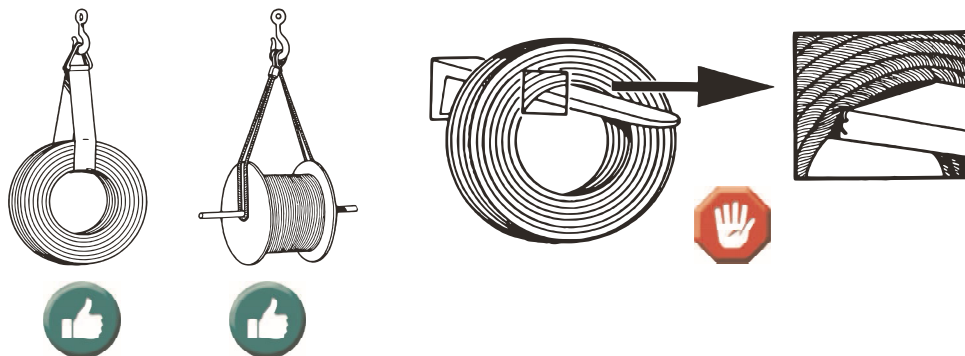
Drum



### Lifting and Handling

Ensure that the rope is not damaged by fork lifts or other handling equipment, by lifting or handling.

**WARNING!** Wrong handling/lifting can damage the rope.

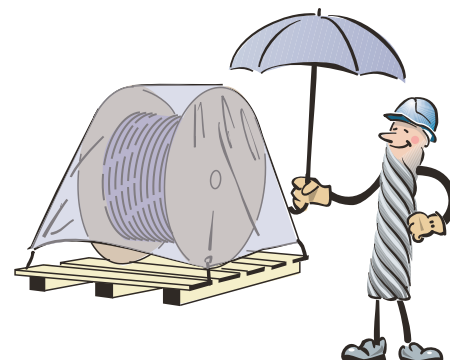


### Storage

Steel wire ropes shall be stored in a dry and well ventilated location. Cover with waterproof material for outside storage. Rotate the reel periodically during long periods of storage, particularly in warm environments. The ropes shall be examined regularly and lubricated if necessary.

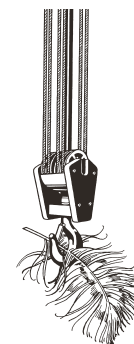


**WARNING!** Incorrect storing can cause damage to the wire rope. Never store the rope in an environment with large variations in temperature.



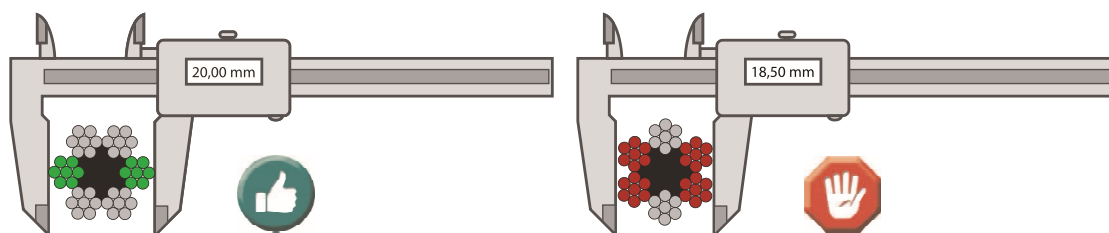
### "Breaking in"

After the rope has been installed and before it is taken into operation, several run-throughs of a normal operation cycle should be carried out under light load to let the rope adjust itself to the actual operating conditions.



### Wire Rope Diameter

The rope diameter should always be checked before installation. Measure a straight part of the rope. Two parts with minimum distance of one meter should be measured. At every point two measurements should be done, with an angle of 90 degrees displacement in relation to each other. The average between the two measurements should be according to the tolerance detailed in the tables below.



**Steel wire ropes for general applications**

Nominal rope Ø	Tolerance of nominal diameter	
	mm	on unloaded rope %
2 to <4		0 +8
4 to <6		0 +7
6 to <8		0 +6
=8		0 +5

Nominal rope Ø	The difference between two measurements expressed as the percent from nominal diameter for unloaded rope		
	mm	Rope with strands that are exclusively of wire max %	Ropes with strands that incorporate fibre centres max %
2 to <4		+7	-
4 to <6		+6	+8
6 to <8		+5	+7
=8		+4	+6

**Steel wire ropes for person elevators**


Nominal rope Ø	Tolerance for nominal diameter for ropes with fibre core/ synthetic core			Tolerance for nominal diameter for ropes with steel core		
	Unloaded	Loaded to 5% of min breaking load	Loaded to 10% of min breaking load	Unloaded	Loaded to 5% of min breaking load	Loaded to 10% of min breaking load
	max %	min %	min %	max %	min %	max %
=10	+6	+1	0	+3	0	-1
>10	+5	+1	0	+2	0	-1

Nominal-rope Ø	Difference between two measurements expressed as percentage of nominal diameter under a load equivalent to 5% or 10% of min breaking load	
	Rope ovality max %	Average diameter variation max %
<8	+4	+3
=8	+3	+2

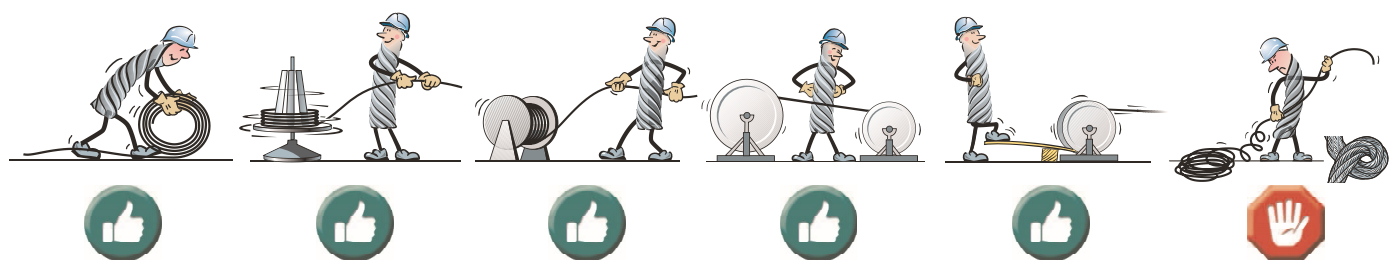
**Unwinding**

Wrong coiling can cause serious damage to the steel wire rope. Coil or wind according to the following:

- Reels should be rolled out or alternatively placed on a turnable centre.
- Cross reels and drums should be placed on a shaft that allows it to rotate.
- Wind and unwind the rope in the same direction.
- In some cases it may be necessary to brake the drum.

 **WARNING!** Wrong "opening" of packing can cause serious injury to personnel, first ensure that the rope is under control.

Never pull a rope from a stationary reel or drum - due to the risk of kinking.



## Cutting

Usually ropes are supplied in cut lengths, with "tapered" ends made by annealing. If the rope is required to be cut during assembly the rope shall be seized each side of the cut, to prevent damage from opening strands and/or changing lay length.

One seizing either side of the cut is normally sufficient for preformed ropes. For "rotation resistant" and special wire ropes a minimum of two seizings each side of the cut will be necessary. The length of each seizing should be a minimum  $2 \times$  rope diameter.

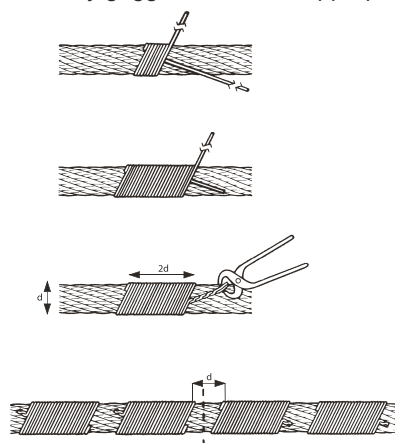
Cutting should be made with a high speed abrasive disc cutter, cutting torch or other suitable mechanical or hydraulic shearing equipment.

After the rope has been cut the seizing should be left until all the wires are welded or otherwise secured.



**WARNING!** Incorrect cutting can cause damage to the rope. Be extra careful when cutting rotation resistant ropes.

Use safety goggles and other appropriate safety equipment when using a disc cutter or other mechanical or electrical devices.



"Seizing"



Disc cutter



Oxy-Acetylene

## Drum - Connection

When installing a new rope a cable sock or alternatively a welded pad eye can be used as connection between the old and new rope.

Individual turn between two ropes when installing can be possible with a swivel, which avoids turn being transmitted from the "old" rope into the new rope.



**WARNING!** Always check that "rope torque" does not exist during installation. A cable sock or other connection should be equipped with a swivel.



## Steel wire rope

Along with the world's leading manufacturers of steel wire CERTEX Danmark A/S offers a complete program in ordinary steel wire ropes as well as crane wire ropes and special wire ropes.

We consider ourselves in a position to offer best quality and guidance when choosing a steel wire rope in cooperation with our various partners.

The crane wire ropes are designed and developed specifically in collaboration with crane manufacturers and crane users, so they can satisfy all needs.

### All crane wire ropes have extra security

A sample of each production has been tested and pulled to fracture and have achieved or exceeded the required minimum tensile strength.

Each product has undergone a test for steel wire-rotating properties.

