

# Wire Rope Handling, Surface Line, Tensioning and Field Lubrication

## HANDLING OF WIRE ROPES PRIOR TO AND DURING INSTALLATION

Reels are best transported on the job site by rolling on a clean flat surface or by lifting from a pipe in the reel center hole.

Wire rope should be stored indoors, off the ground and covered to protect it from moisture, dirt, dust, sunlight, etc.

Care must be taken to unroll and not laterally pull wire rope when paying it off the reel. Kinking and dragging ropes over sharp edges must be avoided.

Ropes must be prevented from rotating during installation since free-hanging ropes will untwist under their own weight. The use of reeving splices is recommended.

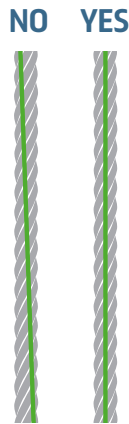
Loose rope ends should always be seized or secured with cable bands to prevent untwisting.

The installers should continually inspect wire rope during installation to identify any areas which may have been damaged in shipment or while in storage on the job site.

## SURFACE LINE

Some hoist ropes come with surface lines which help the installers in determining if the ropes have untwisted (this weakens the rope structure and reduces the rope service life).

To use the surface line, make a full up or down run of the elevator after rope installation and count the number of rotations of the surface line. If the rotations per 100 feet • 30 meters of rope exceed the numbers below, the ropes should be adjusted by rotating the wedge sockets prior to tensioning, installing the retaining clips or tying off the hoist ropes:



- Wire ropes with 1:1 roping = 1.5
- Wire ropes with 2:1 roping = 3.0

## TENSIONING OF HOIST ROPES

It is required that equal tension be maintained between individual ropes in a set. In order to avoid differential wear of sheave grooves and ropes, and to extend rope service life, it is recommended that hoist ropes be equally tensioned at time of installation, after 4-6 weeks, after 6 months and annually thereafter.

Ropes are considered to be equally tensioned when the smallest tension measured is within 10% of the highest tension measured. Ropes with greater tension/load will press harder into the sheave grooves resulting in increased overall rope wear while ropes with lesser tension/load will slide through the sheave grooves causing increased crown and sheave wear.

The use of "tuning/plucking" or a torque wrench to determine tensioning is not recommended.

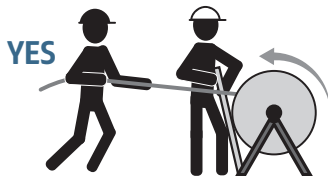
Today, highly accurate electronic rope tension measuring devices are available which allow the quick and accurate checking and adjustment of tension.

## FIELD LUBRICATION POLICY

It is strongly recommended that an annual lubrication application be done every spring, if the ropes become dry to the touch or at 250,000 starts, whichever occurs first.

NOTE: Governor ropes should NEVER be re-lubricated.

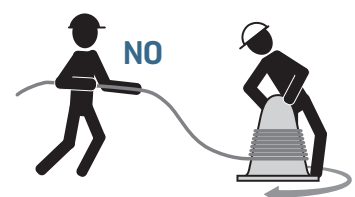
Wire rope may be paid off a reel supported by jack stands with a helper using a board as a brake...



...or by paying it off a coil as the helper rotates it.



When paying rope off a reel or coil, DO NOT pay it off the top or pull it laterally as this can lead to kinking.



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