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WICHTIG /  
IMPORTANT



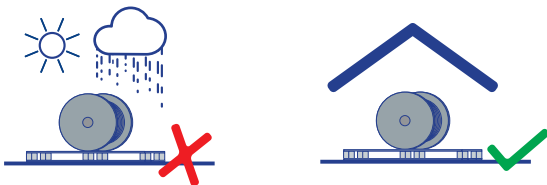
The BRUGG CTP rope is a high strength PU coated suspension rope designed to be used in elevators. The rope is used in combination with rope pulleys and traction sheaves furnished with semicircular traction grooves.

For details on the structure of the rope, on the rope pulleys and traction sheaves to be used as well as on further boundary conditions see the Type Examination Certificate.

## 1. GENERAL

The main causes of most rope defects and a short service life of ropes often are improper storage, handling, installation and maintenance. The following instructions will show you how to correctly handle and properly use coated ropes.

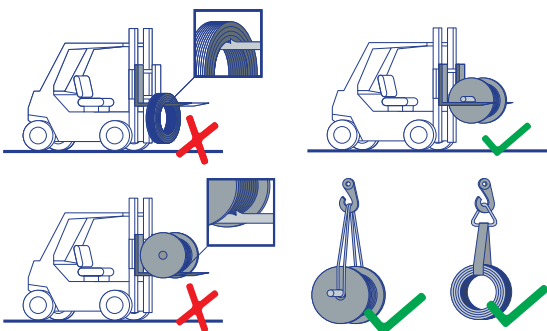
## 2. STORAGE



Always store the ropes in a dry, clean, frost-free place and provide for a good protection of the ropes against strong sunlight and mechanical damages. Where possible, store the ropes on pallets.



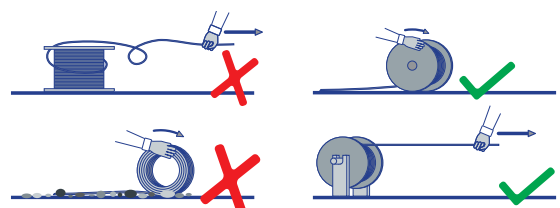
## 3. TRANSPORT



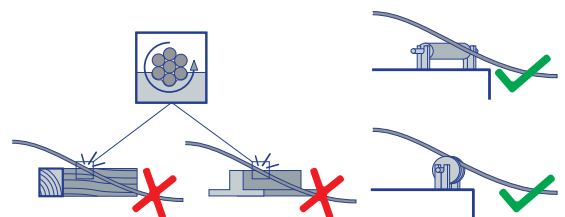
Use suitable lifting equipment to transport ropes. Where possible, always transport ropes on a rope reel. Preferably use a lifting belt to transport coiled rope sections. In any case, avoid contact of the rope with hard surfaces such as forks of lift trucks.

## 4. UNCOILING / WINDING UP

Make sure that the sheath is not damaged when transporting the rope.



Always uncoil the rope in a rotary movement directly from the reel. When uncoiling the rope, make sure that no loops will form. Where possible, keep the rope away from the ground and make sure that some tension remains applied to the rope.



In order to avoid damages to the sheath, do not drag the rope over sharp edges and corners. Therefore, always use a rotating appliance such as a reel.

## 5. INSTALLATION

All materials coming into contact with the coated rope must be completely free from fats, oils and other lubricating substances!

It is necessary that you inspect the traction sheave before mounting the ropes in accordance with the requirements as provided in the approval with respect to groove shape, material and appearance, etc.

The bottom of the grooves must not be varnished, soiled or furnished with any type of foreign substance!

It is necessary that you verify before the first trip that all ropes have the same rope tension (+/- 5%) and are not twisted. During the trip, the rope may rotate around its own axis a maximum of 1x throughout a length of 30 m.

When mounting the rope guide, such as rope pulleys and traction sheave, make sure that the maximum skew angle as designated in the approval is not exceeded.

It is necessary that you check the rope tension once again before the final acceptance. An uneven rope tension may result in premature wear of the ropes.

## 6. MAINTENANCE

Coated ropes are nearly maintenance-free. They must only be visually inspected within the maintenance intervals defined by the elevator manufacturer. In the maintenance process, check the ropes for any mechanical damages to the plastic sheath and for broken wires which perforate the plastic sheath.

Clean soiled ropes using a damp cloth (only use pure water). Never use solvents or other liquids for cleaning coated ropes!

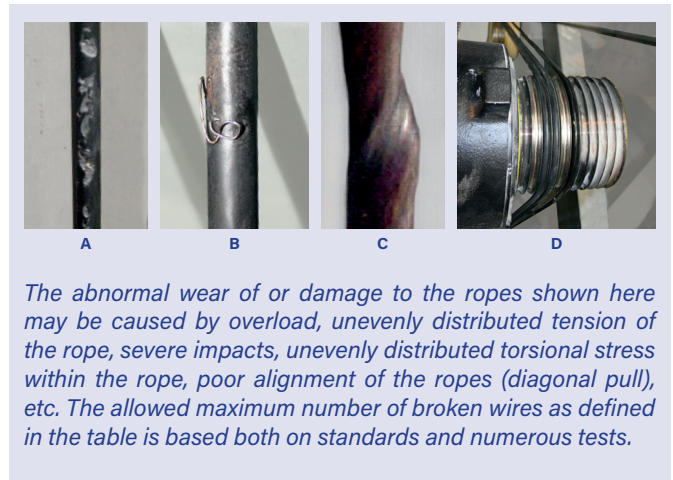
In the maintenance process, also check that the rope tension of the rope is even; readjust the tension, if required.

## 7. DISCARD CRITERIA

Since a visual inspection does not allow to check the rope core for wear, the installation of a trip counter is mandatory. The discard criterion for coated wire ropes is based on the number of trips of the elevator, with one trip corresponding to a change in direction of the elevator.

Most often bended part of the rope passes. After the predefined number of trips has been reached, the ropes have to be replaced irrespective of their condition and appearance.

During visual inspection, always ensure to check all ropes for abnormal wear as well. The table below shows the four typical symptoms indicating abnormal wear of the rope together with the related corrective actions to be taken by the elevator maintenance company:



*The abnormal wear of or damage to the ropes shown here may be caused by overload, unevenly distributed tension of the rope, severe impacts, unevenly distributed torsional stress within the rope, poor alignment of the ropes (diagonal pull), etc. The allowed maximum number of broken wires as defined in the table is based both on standards and numerous tests.*

| PROBLEM            | DESCRIPTION  | TIME FRAME   |           |
|--------------------|--|--|-----------|
| <b>A</b>           | Plastic sheath degradation   | Score marks, fissures or similar damages in the rope cover.  | <2 months |
| <b>B</b>           | Breakage of wire   | More than 10 wires protruding from the TPU sheath within 1 meter.  | <2 months |
|                    | Massive breakage of wires  | More than 5 wires protruding from the plastic coating within 40mm of the rope. Specific phenomenon located over a short run of the rope. | immediate |
| <b>C</b>           | Breakage of strand   | Specific rope breakage.  | immediate |
| <b>D</b>           | Rope out of groove   | Rope got out of its groove in the pulley or jumped into the adjacent groove.   | immediate |
| CORRECTIVE ACTIONS |  |  |           |
| <b>A / B</b>       | With these symptoms, the damage must be recorded and reported to BRUGG Lifting. All ropes must be discarded within 2 months. |  |           |
| <b>C / D</b>       | With these symptoms, the damage must be recorded and reported to BRUGG Lifting. All ropes must be discarded within 2 months. |  |           |