

Breaking Load

How do CASAR Special Wire Ropes achieve their high breaking loads?

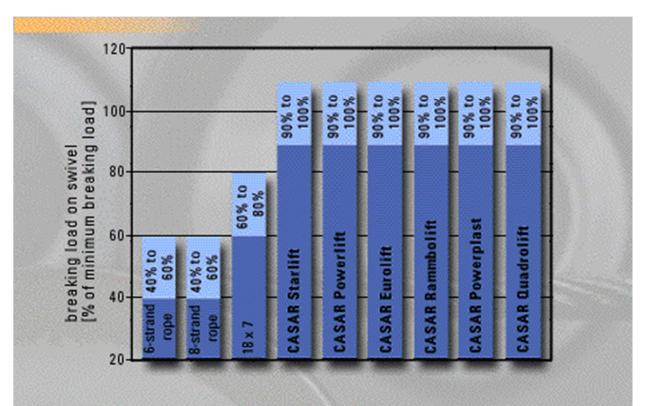
Conventional steel wire rope constructions can meet a requirement for higher breaking loads only by increasing the tensile strength of the individual wires.

Casar Special Wire Ropes are already designed for the highest breaking loads by a combination of various technologies:

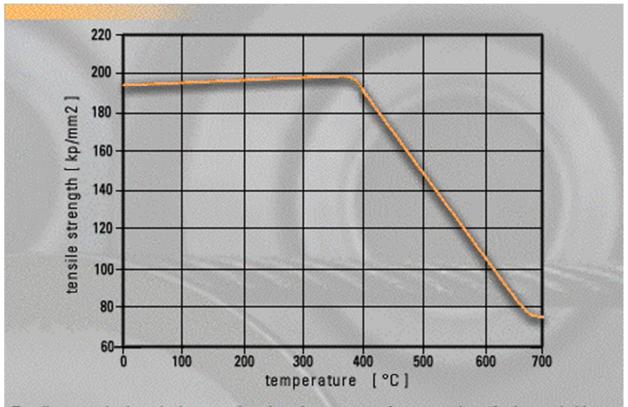
- A large number of strands increases the metallic area of the rope.
- Parallel lay leads to a more compact rope construction.
- A plastic layer reduces internal stresses.
- Compacting of the strands increases the fill factor of the rope elements.
- The tensile strength of the wires is chosen according to the requirements.

The high breaking loads of Casar Special Wire Ropes offer the user the following advantages:

- Design advantages by reducing the sheave and drum diameters and the size of motor and gearbox.
- Longer service life due to lower specific stress on the rope.
- Increased safety.



Breaking loads of steel wire ropes tested with a swivel. The breaking loads of 6-strand and 8-strand ropes decrease considerably, whereas the rotation-resistant CASAR Special Wire Ropes achieve values in the range of their minimum breaking loads.



Tensile strength of steel wires as a function of temperature (exposure time 10 min., cooled in air). Temperatures up to 300°C (~600°F) reduce residual stresses, higher temperatures reduce the tensile strength drastically.