

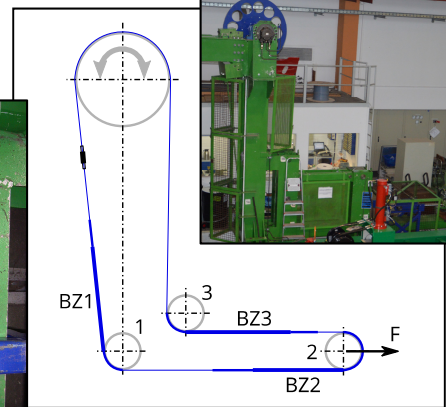
WIRE ROPE TESTING AND RESEARCH

Endurance Testing – Bending Fatigue

- Recording of the development of visible wire breaks until the discard criteria are reached.
- Evaluation of internal rope deterioration by magnetic-inductive testing and detailed follow-up examination.
- Performance of bending fatigue testing until rope failure under variable loads and different D/d-ratios.



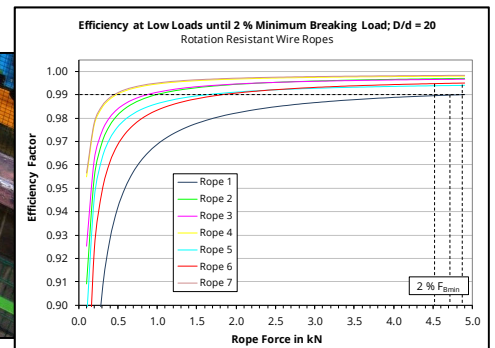
Hoisting test station



Rope test rig with three bending zones

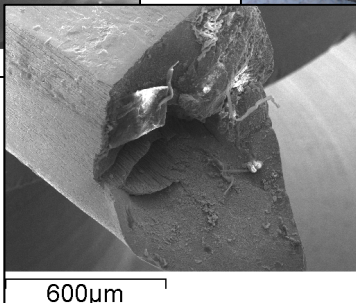
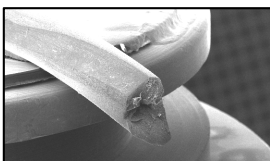
Wire Rope Bending Efficiency

- Testing the bending resistance of a wire rope running over a rope sheave (efficiency).
- Determination of the load-dependent efficiency progression for different rope constructions.
- Efficiency is considered as an important factor for multiple-part reeving (e.g. lowering hook blocks without loads).



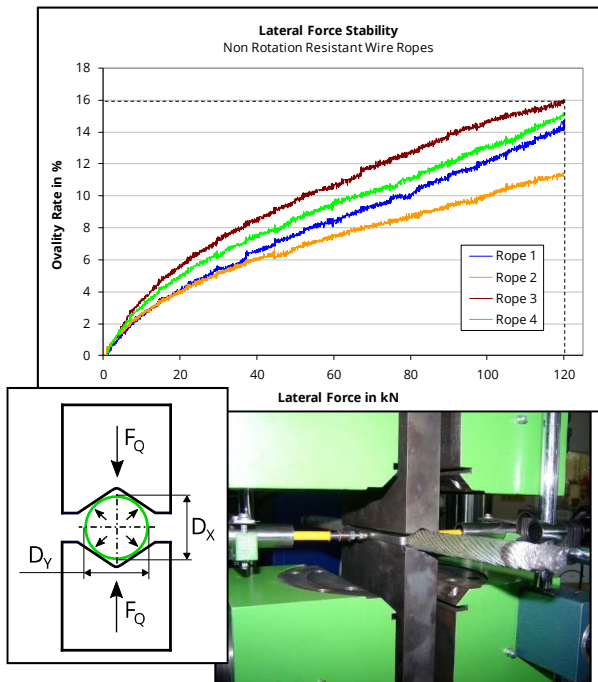
Wire Rope Examinations

- Examination of damaged wire ropes with a macroscopic and microscopic record of status.
- Evaluation of possible causes by analysing the rope drive system and the operation conditions.



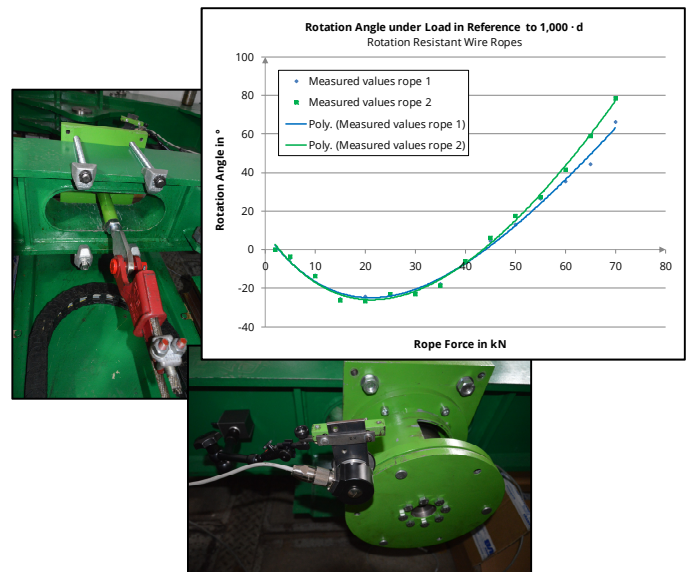
Lateral Force Stability

- Test is performed with a defined experimental tool.
- Determination of the vertical and horizontal deformation against the lateral force.



Rotational Behaviour of Rotation Resistant Ropes

- Determination of the rotation angle of rotation resistant wire rope constructions.
- Determination of the torque and torque factor by torque measurement.
- Analysis of the rotation due to manufacturing and load and evaluation of the rotation characteristics affecting bottom hook blocks to prevent twisting.

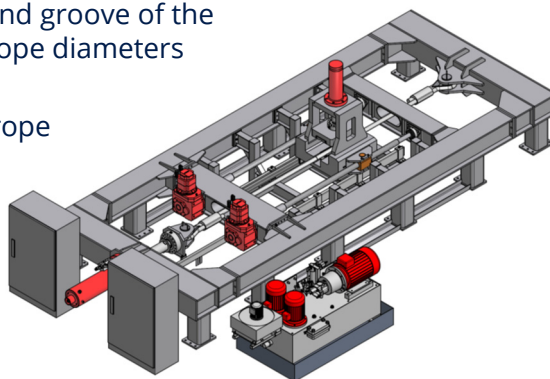


Lifetime Estimation for Running Wire Ropes

- Applying the method "Leipzig" acc. to VDI 2358 (2012), which is based on the design of the rope construction and evaluates the fatigue of the wires in the rope under operation conditions.
- Estimation of the external and internal wire fatigue directly and in consideration of bending fatigue tests.
- The parameters of the theory are based on many previous bending fatigue tests – adjusting the parameters for state-of-the-art rope designs by currently running bending fatigue.

Friction Tests acc. to DIN 21258

- Determination of friction coefficient between wire rope and groove of the traction sheave for rope diameters up to 52 mm.
- Testing with a max. rope force of 400 kN and a pressing force up to 250 kN.



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