

Test facility for torsionable cables and connections in wind turbines



Cable loop – the key component in the wind turbine

Strong torsional forces act on the cable loop and cause stressing of all power and data connections in the loop. During a planned life cycle of around 20 years, these cables are subjected to up to 15,000 torsion cycles. These enormous stresses applied to the cables require not only quality but also reliable tests.

Test facility conducts tests under real-life conditions

In order to minimize operational disruptions and downtimes which can result in high costs, tests must be carried out under the most realistic conditions possible. The designed test facility with a 16-meter high elevator shaft is perfectly suited for realistically recreating the loop, with the connection of the tower and nacelle of a wind turbine. The facility has a installed length of 12 meters that enables the torsional movement to be reproduced precisely. All fixture points of cables and conductors are modelled after actual components. A servo drive at the top of the structure rotates the freely suspended cables over their entire length. In the lower part of the loop as well, the cable is bunched and twisted as in an actual wind turbine. Cameras monitor the processes inside the facility, measuring the abrasion and detecting any damage to the cables that might be caused by torsion and vibrations.

Better investment protection thanks to reliable tests

The verification this test facility provides gives the turbine operator greater investment protection.

The test facility is used for a wide range of tests, and delivers valuable findings with regard to the suitability of different cable designs and materials.

BRUGG eConnect, specialist for technically advanced cables

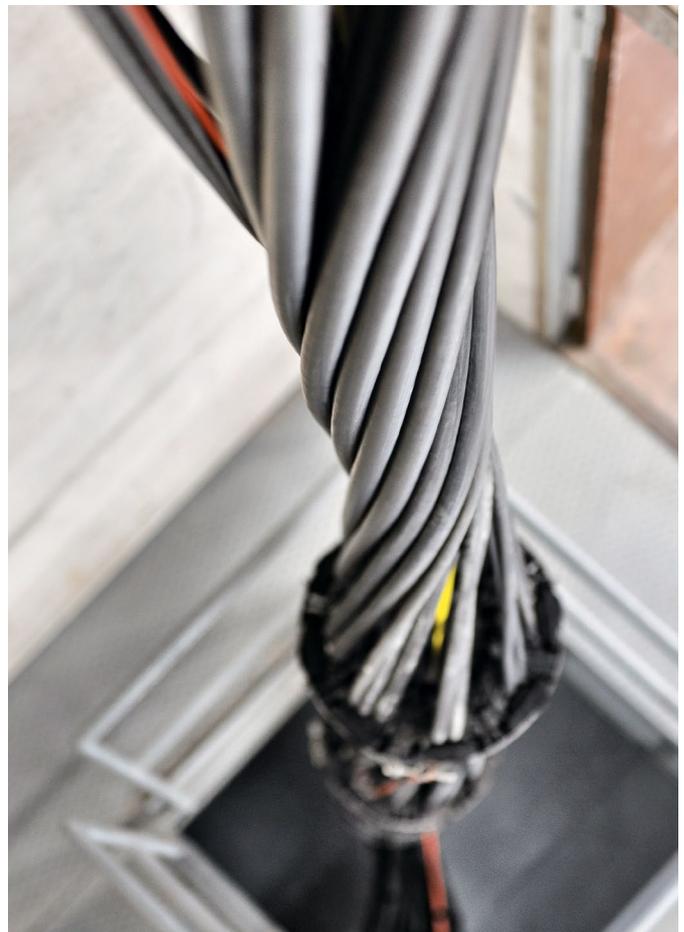
BRUGG eConnect has special technical expertise in the Engineer to Order (ETO) area, designing and manufacturing individual parts according to precisely defined customer requirements. BRUGG eConnect deploys its entire technical know-how and experience and partners projects through all stages of development, design, purchasing, production, testing and logistics according to the customer's specific requirements right up to installation on site.

Development Design Production

Engineer to Order

Assembly Approval Logistics

Products & Solutions



Test facility for torsionable cables and connections

In the 16-meter high test facility, cables are subjected to up to 15,000 torsion cycles, based on a life span of around 20 years. The connections used meet the most exacting demands in terms of torsional strength and withstand very high temperature variations. All customized solutions are designed, manufactured and tested according to precisely defined customer requirements.

Technical details test facility	Value
Max. test height:	up to 12 meters
Max. testing capacity:	32 cables in the practical test
Speed of rotation:	Test speed in the range 0-20°/sec. (variably adjustable)
Torsion angle:	Angle range +/- 1080°(variably adjustable)
Loop simulation:	Actual conditions; according to specifications of wind turbine manufacturer
Cable connections:	Ring cable lug, cable grips or according to customer's requirements
Tests:	<ul style="list-style-type: none">- Video-monitored test- Voltage tests (low/medium voltage) in the voltage laboratory- Fiber-optic cable tests- Detailed analysis on complete test lengths
Customized Test offering	Tests are set up and implemented according to customer's specifications



Switzerland (Head office)

BRUGG eConnect AG
Industriestrasse 19
CH-5200 Brugg
Tel. +41 56 460 33 33
info.econnect@brugg.com
www.bruggeconnect.com

Poland

BRUGG eConnect Poland Sp. z o.o.
ul. Rokitniańska 4
PL-66-300 Międzyrzecz
Tel. +48 691 222 537
info.pl@brugg.com