

# world of rope

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IN AMSTERDAM

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WELCOME TO BAUMA 2016

## Fusion research with CASAR Paraplast

A unique global partnership is currently being created at the Cadarache nuclear research centre in the south of France. The ITER Tokamak Cryostat is being constructed there, the world's largest experimental facility for fusion energy. The objective of fusion research is to prove the scientific and technological feasibility of fusion energy and thereby to harness a secure, unlimited and environmentally friendly source of energy. This is intended to generate a fusion output of 500 megawatts over a period of 7 minutes. It uses the same principle as that used by the sun: light atomic nuclei are fused into heavy ones, releasing immense quantities of energy in the process. The ITER (International Thermonuclear Experimental Reactor) is a nuclear fusion reactor based on the Tokamak principle. In this process a deuterium-tritium plasma is kept in a toroidal form at approximately 150 million degrees Celsius using a magnetic field. Above a specific temperature and particle density, a controlled nuclear fusion should then occur in a chain reaction; the energy gain from this should exceed the energy consumption

by a factor of 10 to enable an economical net gain in energy.

It is a long way before this objective can be attained, however, because the assembly and installation of the Tokamak reactor and the Tokamak cargo lift, amongst other things, represent a complex task. For this reason, Fusion for Energy (F4E), the organisation that manages Europe's contribution to the ITER Project, has engaged a specialist for the construction of the massive cranes required. The NKMNOELL-REEL consortium, consisting of NKMNoell Special Cranes GmbH (Germany) and REEL S.A.S. (France), has been appointed to design 4 electric travelling cranes which will move to and fro between the main buildings of the ITER Project. The ITER components will be assembled in the 60m high assembly hall and then transported into the Tokamak building on the travelling cranes. Large components weighing up to 1500 tonnes will be transported within the tandem hub by the two 750t cranes, each of which will be equipped with two trolleys and a 375t hoist. This will place maximum demands on each individual



**Andreas Schmeiss**  
WireCo WorldGroup  
VP Global Cranes

Dear Customers

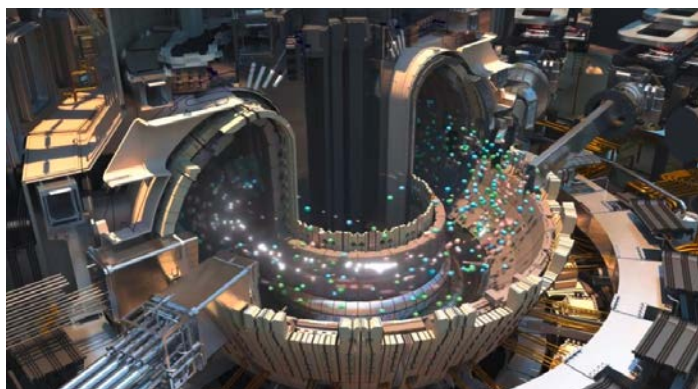
Thank you for your continued interest in our newsletter. I am pleased to welcome you to this first newsletter of 2016 and would like to take the opportunity to sincerely invite you to visit our booth at the bauma in Munich. Three very varied years have passed once again, and in April the world's largest leading trade fair will open its gates to more than half a million visitors. On page 3 of our newsletter we will give you a sneak peek.

bauma, theatre of innovation – cutting-edge technology – meeting point of our industry, is surely the platform for exchange of existing and new partnerships.

We are proud to be a part of it and look forward to your visit.

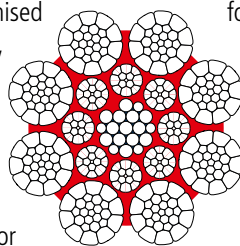
Sincerely yours,

*Andreas Schmeiss*  
Andreas Schmeiss  
VP Global Cranes



crane component. For this reason it has been decided at NKMNOELL-REEL not to make any compromises in the choice of ropes and to purchase CASAR specialist wire ropes via the French dealer Corderie Dor. These consist of a total of almost 3500 m of galvanised CASAR Paraplast Ø36 mm for the two 750 t cranes. CASAR Paraplast is distinguished by its high breaking force, but also its durability and flexibility. The compacted outer strands give the rope a very even surface, and the plastic-covered steel core stabilises the rope structure.

The two auxiliary cranes, each with a lifting capacity of 50 tonnes, will be used independently of one another for ancillary lifting processes. Here too galvanised CASAR Paraplast is being used, although only at a diameter of 26 mm and a total length of some 400 m. All ropes are covered with an open socket on one side and have a welded assembly eye at the other end for easier installation.



Incidentally, the abbreviation ITER does not just stand for “International Thermonuclear Experimental Reactor”, but is also Latin for the word “journey”. This is the journey towards a pioneering and clean source of energy. CASAR is very proud to be involved in this exciting journey.

## Fast as the wind

**T**ime is money. As trite as this empty phrase appears, if it concerns the construction of wind farms, then it is as current as it has ever been. For this reason, and of course due to the increasing demand for renewable energy, the Danish crane manufacturer Krøll has developed a new luffing jib crane which takes into account the special requirements of the wind industry. The new Krøll K1500L has a capacity of 125 t up to a radius of 12.5 m and can construct wind turbines of the 5MW class to a height of 170 m. In the process the crane operates very close to the tower and in a very small turning circle, as is typical for luffing jibs. In this case, Krøll has gone a step further and designed the K1500L in such a way that allows for the positioning of a very steep jib in order to reach the necessary lifting height. This steep deployment angle of the 70.1 m long jib does increase the risk of instability during sudden gusts of wind or down draughts, however. To counteract this, the very steep A gantry uses a spring damping system which stops the jib from falling below the minimum radius.

The complex usage and construction of the crane places the most extreme demands on all crane components. For this reason, Krøll decided to place their trust in special wire cables made by CASAR. The 825 m CASAR Eurolift Ø40 mm hoist rope was put to use here, a rotation-resistant rope, which has proved its exceptional qualities over decades. The hoisting rope is reeved with four strands. The hoisting winch, with a capacity of 154 kW, can lift a

load at a rate of 6 m/min and up to 22 m/min when bearing no load.

The luffing jib rope is a CASAR Turboplast, a compacted 8-strand Warrington-Seale construction with a plastic-covered steel core.

What the K1500L is able to achieve has been proven many times over during the course of the last four months. To begin with, the crane was put through its paces under so-called laboratory conditions on the Krøll test field in Lynge, close to Copenhagen. The crane passed its 100 % load test (125 t) as well as its overload test at 125 % (156.25 t) with flying colours. This was followed at the end of last year with the first field test in Poland. Here, a prominent Danish manufacturer’s wind turbines were successfully installed.

One of the greatest strengths of the K1500L is certainly that it is a free-standing crane that does not need to be anchored to the ground. Its sophisticated construction makes it very flexible. The crane is disassembled into relatively large sections at the wind farm building site for transport over relatively short distances, so that it can be ready for use again as quickly as possible. If further transport on public roads is required, the crane is disassembled into a larger number of smaller and lighter sections, in order to enable easier transportation. In this way, the M33 Monoblock tower system meets the size requirements for road transport.



# WireCo supports World Crane and Transport Summit in Amsterdam

Each year the crane publication 'International Cranes' organizes the World Crane and Transport Summit with a strong focus on heavy transportation and lifting. This year the two-day conference was held in Amsterdam and discussions were held concerning current challenges and new technological developments in this industry. The majority of the almost 300 participants work in crane rental companies, but all the large mobile crane manufacturers like Liebherr, Terex, Manitowoc and Tadano participated with their top-management in attendance.

Besides the presentations and discussion forums there were plenty of opportunities to meet the participants face-to-face. WireCo

was represented by Dr. Oliver Fries (VP R&D steel wire ropes), Peter Van der Voorde (Sales Manager Netherlands, Belgium, Luxemburg and France) and Christian Schorr-Golsong (Director Product Marketing) and they had the opportunity to meet with existing and potential customers.

A particular highlight was Dr. Oliver Fries' presentation, "Current developments of steel and synthetic crane ropes." In his presentation, Oliver looked at different rope applications and how to be cost effective when deciding what rope to use, particularly where the compromises are. He looked at wire, synthetic and hybrid ropes, with a brief introduction to smart ropes – quite possibly the rope

of future. Oliver took the opportunity to look at the problems associated with the different types of rope available for lifting applications, such as flattening, effects of temperature, UV influences and ways to protect synthetic ropes. He also looked at the cost of hybrid ropes and approached the subject of discard criteria. "A standard for discard criteria for synthetic ropes is not yet available for the industry, however this is something that rope manufacturers are working on," Oliver said.

The next event will take place in the United States, and WireCo will no doubt play a part in presenting interesting and relevant topics to the lifting specialists gathering there.



NEXT ISSUE WILL BE PUBLISHED IN

## APRIL 2016

### PLANNED TOPICS:

- CASAR ROPES IN USE AT THE WORLD HERITAGE SITE ACROPOLIS
- UPGRADE AT CASAR DEALER SAUDI-DUTEST
- BAUMA REVIEW

## Welcome to bauma 2016

Only a few weeks separate us from the start of the largest construction machine trade fair in the world, bauma in Munich. WireCo will once again be present on-site with an interesting trade fair booth. On two floors, we will be presenting cutting-edge products to you, in steel and synthetic materials, by the brands CASAR, LANKHORST ROPES and OLIVEIRA. Let yourself

be surprised by our new products, which can be explained to you by our rope specialists at our trade fair booth. Another highlight are the planned live presentations at our booth. Our product and application specialists will show you how you can improve the performance of your devices and equipment with solutions from our company. We are pleased to invite you to visit our trade fair booth 524 in hall B3.

Visit us at  
Booth No. 524, Hall B3  
**bauma 2016**

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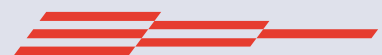
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