

# world of rope

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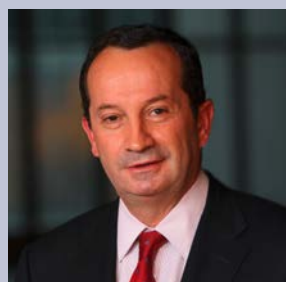


## Constructing Offshore Wind Farms with CASAR Powerplast

The growth of wind power in Europe is running out of space, both at inland and coastal locations. Logically, the next step is to develop offshore wind farms at sea. These installations are placed several kilometres off the coast and fixed to the continental shelf. There they are free-standing in the wind and so can achieve a high energy yield. However, constructing and operating these installations poses unprecedented challenges for the

technology used. Where water is up to 60m deep, stable foundations have to be built on the sea bed and the construction of the wind turbines themselves, with their tower, power house and rotor blades, requires elaborate assembly. It cannot be done from an unstable ship or platform, for obvious reasons.

In order to get around these problems, the VAN OORD Group decided to place an order at the



**José Luis Gramaxo**  
WireCo WorldGroup  
SVP-Chief Commercial Officer

2014 was a year that we dedicated to the development of the CASAR crane portfolio with a lot of new developments that were launched on the market by our R&D team – lead by Dr. Oliver Fries. Examples of those new products are: DOUBLEFIT, SUPERPLAST 10, SUPERPLAST 10 MIX and STARLIFT PRO.

Our goal is to continue developing CASAR's Technical Leadership and we are working on a large program in 2015 to improve the characteristics of our most popular crane ropes.

This means that CASAR and the WireCo Group heavily invest in new developments in all areas of our activities. Besides Cranes these developments also include Mining, Maritime, Fishing, Oil & Gas Synthetics and Steel, Engineered Products, and Yarns – a must for the improvement of our synthetic ropes. We consider these investments in R&D crucial for the development of our global activities.

As mentioned in the previous Newsletter we have developed our WireCo Crane Center in Gouda and so far, it has been successful in servicing our customers. From there we can supply ropes and services to our customers within 24 hours with the most common rope products and diameters.

Further I would like to inform, that Blake Chandler, our previous Global Crane Industry Leader, is back in the US in a new leading position of Senior Vice-President Global Mining & Sales North America & Africa. I would like to use this opportunity to thank him for all the good work done in our Crane activities.

A new WireCo Global Crane Industry Leader will be appointed soon; meanwhile I will temporarily take that role upon me.

Yours sincerely,  
*José Luis Gramaxo*

Sietas shipyard in Hamburg to build a special assembly ship. Not only can the 139-metre-long ship be positioned on the seafloor with 4 hydraulic columns, the ship, which has been named "AEOLUS", also features a staggeringly large deck crane made by TTS NMF in Hamburg. The boom is constructed from a double length of grid segments and can lift 900 tonnes for a load radius of 30m. When using the maximum radius of 80m, it can still lift an enormous 240 tonnes. NMF would not compromise when it came to selecting the hoisting and adjusting ropes and picked CASAR products as proven, reliable components for this application. For the hoisting rope, there is a CASAR POWERPLAST with a 66mm diameter and 8-ply reeving with a heavy-duty cylinder. As well as having outstanding rotation resistance, this rope stands out thanks to the special plastic casing of its core rope with excellent corrosion protection of the inner strands and substantial insensitivity to dynamic loads. The crane boom is adjusted with a CASAR TURBOPLAST, also with a 66mm diameter, which is another popular and proven choice of rope for deck cranes. Both of these rope types have compacted outer strands, thereby offering high breaking strength, excellent coiling and drum compression resistance for multiple layer coiling. With Aeolus, the top priority was maximum operational safety and reliability for all components. Tough operating conditions in the North Sea will push the ship, its crane and ultimately its



ropes to their limits when performing the often difficult assembly manoeuvres.

In addition to the Aeolus, 2 semi-submersible flotels known as AXIS VEGA and AXIS NOVA will also be used, serving as stationary accommodation for the construction and service staff and designed to cope well with extreme weather conditions. For the necessary hoisting work, the flotels will also be fitted with appropriate crane equipment from TTS NMF. The planned 70-tonne cranes will operate a simi-

lar combination of products as the AEOLUS, with a 42mm CASAR POWERPLAST as the main hoisting rope and a 42mm CASAR TURBOPLAST as the adjusting rope. The ropes also include a 30mm CASAR POWERPLAST as a secondary hoisting winch.

CASAR wishes the Aeolus safe sailing at all times and may there always be a hand of water under your keel.

# Improved Procedures for Better Quality

## Implementation of 5S at CASAR

Increasing the efficiency of a manufacturing company requires effective measures to eliminate or minimise activities that do not add value and are therefore wasteful.

That is why in September 2014 the company CASAR began implementing the 5S methodology, which originated in Japan. 5S aims to involve employees in the structured organisa-

tion of the workplace, and to standardise procedures. 5S refers to the 5 Japanese keywords given below, which can be translated and defined as follows:

### 1st S = Sort

Sorting (or sorting out) means removing any unnecessary equipment to create more space and clarity.

### 2nd S = Set in order

Allocate a designated, ergonomically-suitable place for necessary equipment. Visualisation is a useful way of quickly spotting any deviations from the standard situation.

### 3rd S = Shine

You should regularly clean your workplace. Cleansing also acts as an inspection, because during the cleaning process you can check for any deviations or faults in the equipment.

### 4th S = Standardise

Formulate fixed guidelines for how a workplace should look, making it easy to identify and resolve any deviations from the norm.

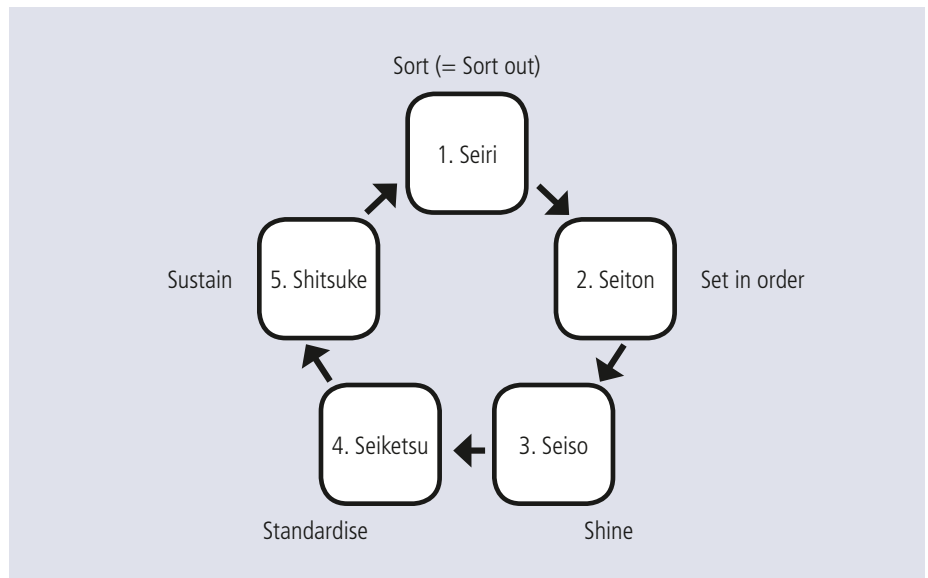
### 5th S = Sustain

Follow the cleaning and tidying rules and go through the 5S cycle regularly to continuously improve the workplace.

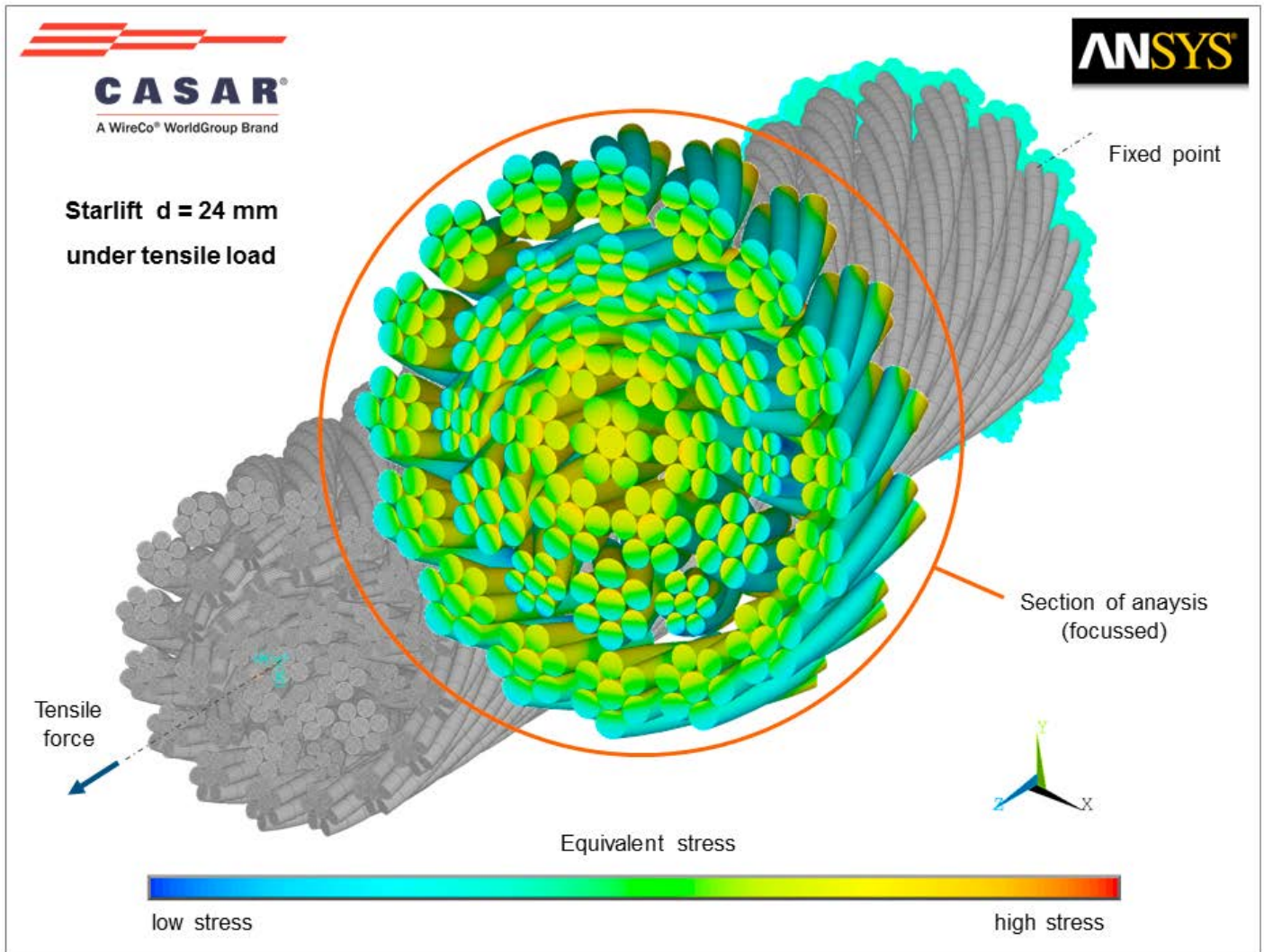
The consistent application of 5S methods allows you to work efficiently, because you no longer waste time searching and can minimise travel/transport times. This enables employees to focus more attention on activities that create value. 5S also improves safety at work, because it puts tidiness and cleanliness first. This in turn increases employee motivation. At CASAR, this is also achieved through employees working together to develop the standards in collabo-

ration with a 5S core team including members from the Production, Plant Management, Maintenance and Procurement departments. The system is monitored by running regular 5S audits.

5S is an ongoing process that is never really complete and must be continued all the time. The plan is for all workplaces at CASAR to be configured in line with 5S before the end of the year.



# The Latest Simulation Technology to Ease Tension



A remarkable engineering tool for product development has now become mainstream across industries: calculating components using the finite element method (FEM). The design of wire ropes will also benefit from the advantages of purely computer-based tension analysis. CASAR now is able to model and simulate new constructions in advance, in order to determine the appropriate design parameters using the latest software and hardware.

This new sphere of competence will be run by Jens C. Weis. From 2007 to 2013, Jens was

a researcher at the Institute of Mechanical Handling and Logistics (IFT) of the University of Stuttgart. Through his teaching and work, he acquired practical experience primarily in the fields of experimental wire and synthetic rope testing, rope service life calculation and failure analysis. Alongside this, the main focus of his research was the computer-assisted simulation of wire rope loads by FEM. The results of this research were already approved in 2013 by the internationally-accredited institute OIPEEC, and Jens reached a milestone in his doctoral studies in 2014 when he successfully submitted an extensive thesis on wire rope simulation. Jens has

been a part of the Research & Development Team at CASAR and WireCo WorldGroup since the end of 2013.

The illustration shows an example of a “Starlift” rotation-resistant wire rope with a nominal diameter of 24 mm under tensile loading. The results of these and similar tests will support existing R&D work and will safeguard and enhance the high level of performance of the special wire ropes produced at the Kirkel site.

# New Head of Production at CASAR



**O**n 1/10/2014, Mr Francisco Tudela took charge of the CASAR production departments in Kirkel, in the role of Head of Manufacturing. He has many years' experience in industrial manufacturing and spent 14 years working in management positions in the automotive supplies industry. His main focus at CASAR is on optimising manufacturing processes and ongoing improvement projects in the areas of occupational health and safety, production logistics and product quality. Several projects have already been initiated, and we will provide more information about these in due course. We wish Mr Tudela every success in his new role.

NEXT ISSUE WILL BE PUBLISHED IN

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**PLANNED TOPICS:**

- FIRST OEM WITH DOUBLEFIT
- WIRECO ROPES IN SPACE SHUTTLE
- WCC GOUDA: ISO CERTIFICATION

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