



## Solid performance for Dopeless® technology's debut in Brazil's Pre-Salt fields

The dry, multifunctional coating demonstrates running efficiency and HSE benefits for Petrobras.

### Summary

#### Reaching oil and gas in the Pre-Salt reserves of Brazil

The Pre-Salt geological formation on the continental shelf off the Brazilian coast holds vast reserves of oil and natural gas, lying below a 2,000 meter-thick layer of salt, itself under another layer of rock 2,000-3,000 meters thick on the Atlantic sea floor. The recent discoveries of these large offshore, deepwater Pre-Salt deposits have transformed the nature and focus of Brazil's oil and gas sector and boosted the government's long-term goal of increasing domestic oil production. Brazil is poised to become one of the largest oil producers in the world, with Pre- and Post-Salt developments consolidating its status as an oilfield giant.

At the same time, its insignia oil company Petrobras is proving its worth as a regional leader in exploration and production. This company and other operators still face major challenges in the Pre-Salt areas due to the drilling depths, temperatures and pressures. Tenaris introduced Dopeless® technology to Petrobras for a trial run due to its superior running efficiency in environmentally sensitive and extremely complex wells.

### Challenges

#### Emphasizing the environmental policy

Discovered in 2007, these vast reservoirs lie 300 km off the coast and require extremely deep wells, raising the bar for industry in terms of the challenges for operators and driving costs upwards in tandem with the increase in risks and complexity. Developing the Pre-Salt means drilling almost seven kilometers through the earth's crust and extracting oil and gas at very high temperatures. In particular, the thick salt layers present additional challenges for maintaining well integrity throughout the life-cycle of the well. Operators are actively seeking solutions to help reduce costs and add value to the well construction process as well as minimize the environment footprint.

In 2012, Petrobras presented the company's strict zero accidents, discharge, and contamination policy and stated that every spill, however small, produced during offshore operations must be handled as a failure in HSE policy and made accountable in the

### PROJECT PROFILE

Operator Petrobras	Expected production Oil
Location Brazil	Products highlighted • 18" TenarisHydril Wedge 511™ Dopeless® connections
Type of well Vertical, deepwater, exploratory, HPHT, Pre-Salt	Services provided • Technical assistance • Running services



- ▲ The Pre-Salt geological formation on the continental shelf off the coast have transformed the nature of Brazil's oil and gas sector.

public domain. At the well located in the Brazilian Pre-Salt, Tenaris introduced Dopeless® technology to Petrobras engineers as a solution to facilitate operations in highly demanding environments and achieving enhanced HSE and field performance.

## Solution

### Comparative trials

A 1000-meter string with 22 joints of standard TenarisHydril Wedge 511™ and 69 identical joints using Dopeless® technology allowed the operator to compare and analyze the value of the dry coating in an ultra deepwater (water depth of more than 3000 ft) operation. TenarisHydril Wedge 511™ was used as a drilling liner, being a robust connection with a flush profile ideal for tight clearances.

### Dopeless® technology: simplifying processes

Dopeless® technology is a dry, multifunctional coating applied through a fully automatic process to TenarisHydril premium connections.

Dopeless® technology minimizes the release of common products from operations with dope and the manpower needed for make-up.

## Results

### Superior running results

The trials were performed on a 1000-meter string composed of 22 joints of 18" P110 TenarisHydril Wedge 511™ with dope and 69 identical joints using Dopeless® technology with major differences in results. A comparison of these during the operation showed that the connections with dope were run at an average of 6 joints/hour, while those using Dopeless® technology were run at an average of 8 joints/hour.

The pipe was prepared for offshore use at Tenaris's service base in Rio das Ostras-RJ, including pipe measurements and drifting.

On its arrival at the rig, it was reinspected prior to make-up where Tenaris experts were on hand to provide technical running assistance.



Pipe not used in the operation was set aside and subsequently removed from the rig in pristine condition.

The operator was able to observe first-hand the positive effect of Dopeless® technology on running speed and efficiency: better results using fewer resources. The solution also impacts favorably on safety and costs, contributing to increased HSE protection in addition to supporting the company's new environmental policies.

### Onboard field services for added efficiency

The success of this first exercise using Dopeless® technology was complemented by the presence of Tenaris field services personnel, now standard for all Brazilian offshore operations. Associated with Tenaris's strategic proximity to key sites, this translates into an integrated package of products and services. The operator is currently contemplating using Dopeless® technology in other projects.



For contact information, please visit our site:

[www.tenaris.com](http://www.tenaris.com)