

Gimboa FPSO moored successfully

A custom designed DeepRope® solution

The Saipem Gimboa FPSO leased to Sonangol for the development of the Gimboa Field left its conversion yard mid October 2008 for on-site commissioning and production start up. The previous summer Saipem had already successfully installed the mooring system for the FPSO's arrival. At the time of writing the system is hooked up to the pre-laid mooring.



The Gimboa field is operated by Sonangol Pesquisa & Produção and located in block 4/05, some 85 km off the coast of Angola. The 337 meter long FPSO unit has an oil storage capacity of 1.8m barrels and a production capacity of 60,000 barrels per day. It is moored in 711 m deep water on a 4 x 3 spread consisting of a top part chain, a polyester rope followed by a ground part chain. Bexco supplied 635 meter long, 175 mm dia and 1000 mT MBL DeepRope® mooring lines for this project.

DeepRope® mooring lines have weight for weight a high breaking strength due to their special construction. They come in a variety of lengths with a choice of end terminations. So was this an off the shelf delivery?

"There is nothing wrong with off-the-shelf delivery" says Bexco R&D manager Peter Van Den Berghe, "but this is the type of customized project that puts a smile on an engineer's face". The customer, in this case Saipem, involved us early on in their project engineering. With a relatively long time lap

between mooring installation and arrival of the vessel, the mooring system would be stored on the seabed, however they did not want to leave the polyester lines on the seabed and risk of particle ingress. They had engineered a system whereby both chain parts would rest on the seabed while keeping the polyester lines off the seabed. We jointly looked at the end connecting thimbles, making them fit with shackles directly to the chain parts and decided for 4 floatation points per mooring line: 2 buoys close to each chain end and 2 buoys further up the rope. We applied 2 rope buoy connections per buoy to prevent a crack at the lift point."

Saipem also planned to use a new Vertical Traction System for the mooring line installation so that extensive product evaluation and tests were planned to monitor the handling of the DeepRope® polyester lines. Both Peter and Bexco Technical Engineer Karel Devos were in close contact with their Saipem colleagues during the production, the on- and offshore tests in Angola. Says Karel, "the tests went well

and lead to the appropriate installation method. We also were able to make minor improvements to the rope hang-off points. We worked together in an atmosphere of mutual appreciation and although it was hard work, the result is one to be proud of."

"Absolutely" says Karel and he adds "it is to the benefit of client and the project if we get involved early on in the project, so that we can jointly share our experience and ideas, creating relatively simple but cost effective solutions which will pay-off in a smooth offshore installation without downtime"

Both Bexco representatives were on board the Saipem S3000 during the installation phase to provide technical back up. They witnessed the use of the Vertical Loaded System (VLS) to install and buoy off of the mooring lines, yet again adding to their experience. The system has stayed intact and was ready for the vessel to arrive on location early 2009.

DeepRope® mooring lines are marketed exclusively by Vryhof.