

ANOTHER FPSO TURRET SYSTEM BUILT WITH HIGH PERFORMANCE, SELF-LUBRICATING SXL BEARINGS

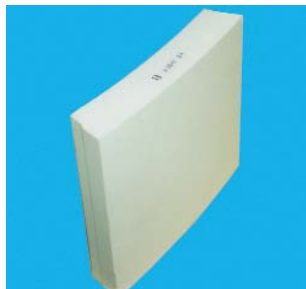
FARWAH — the latest floating production storage offshore (FPSO) platform on duty in the Mediterranean — is an exception to the norm in many ways. It was constructed in Europe, while most such vessels are built in the Far East. It was built from scratch, rather than via a ship conversion. And its turret system features the oil-free, high-performance advantages of Thordon SXL bearing pads.

Owned by Exmar Offshore of Belgium, *FARWAH* was built at IZAR's Fene shipyard in northwestern Spain. The innovative turret system was designed by London Marine Consultants (LMC), a U.K.-based company that specializes in mooring systems for FPSO's and FSO's.

"When we were awarded the contract," says Jon Dunston, Director of LMC, "we knew that this would be a challenging design." An FPSO turret system is exposed to a variety of demanding load conditions. Operating fully submerged, the lower turret bearing must be able to handle extreme loads while providing the means to allow the FPSO to 'weathervane' in accordance with prevailing weather.

"Our selection of bearing material was crucial," says Dunston. "Not only did it have to perform well under the sea, it also needed to be relatively low maintenance and have a design life of 15 years!"

After exploring the options, LMC discovered that the best choice for the job was Thordon SXL.




SXL Turret Bearing

Backed by dozens of references, Thordon products have an excellent track record in numerous offshore oil applications. The Thordon SXL bearing pads for this turret system are self-lubricating with a low coefficient of friction (0.15 to 0.20); can bear a load of up to nearly 2000 tons and provide a maximum deflection of 2.5 mm (0.098").

"We were particularly impressed that there was an operational precedent to support Thordon SXL," says Dunston. *FARWAH* is, in fact, the second FPSO to use the bearing pads. The *Ramform B-380* FPSO, which operates in the Banff oil fields, has been using Thordon SXL for over five years with an exceptional record of performance.

As expected, the design of the turret system wasn't easy. "We overcame one challenge after another for many months," says Dunston, "But the people at Thordon were extremely helpful. There were some very complicated analysis required and they assisted us in developing the data we needed." The final bearing design included 24 Thordon SXL pads mounted into a fabricated steel housing roughly 4.2 m (13.8 ft.) in diameter.

Today, *FARWAH* is in service on the TFE (TotalFinaELF) CPTL-137B oil fields off the coast of Libya. Thanks to the efforts of LMC, Thordon Bearings and others associated with the project, the bow-mounted external turret system is considered one of the most innovative in the world. 



FPSO *FARWAH* equipped with Thordon SXL turret bearing pads