

Press Information

ON-SITE MACHINING AND FLAKE GLASS COATING REPAIR RESTORES VERTICAL PUMP OFFSHORE FOR MARATHON OIL

Metallock Engineering has recently restored a vertical pump - used for the transfer of sweet crude on a Marathon Oil floating storage and offloading (FSO) vessel operating off the West Coast of Africa – to full working condition. The pump had sprung a leak, and on investigation, it was found that due to a loosened locknut the impeller had dropped, causing considerable damage to the volute form of the casing and the lower gland seal area of the pump.

Metallock was called upon to investigate whether a repair was possible. Once the pump had been dismantled, the extent of the damage was assessed and a decision taken that a successful repair could be effected. The repair would involve the application of a specialist flake glass-filled coating material. Before this could be done, damaged wear ring lands and internal areas of the pump casing had to be machined, and the entire internal surface shot blasted to ensure a positive bond between the bronze pump body and the glass flake filled coating.

The blasting and coating work to the internal surface area of the pump was carried out for Metallock by UK corrosion engineering specialists Corrocoat, using experienced personnel from the organisation's application facilities in South Africa. The coating system selected was from the company's own Corroglass 600 range, comprising a vinyl ester base loaded with glass flake. For this application, the product was brush applied in coats to build up the excessively worn surfaces, curing swiftly to offer high levels of chemical resistance in use. Once the new lining and restored areas were completely cured, Metallock dressed the joint faces of the two halves of pump casing before setting up a boring machine in the bottom half casing to recut the wear ring lands. The two halves were then bolted and dowelled together, and the relevant areas machined using appropriate Metallock on-site line boring equipment. On completion the casing top half was removed and all dimensions inspected prior to fitting new bearings and a replacement impeller.

The alternative to on-site repair would have been a completely new pump. As this particular type is no longer a stock item, production and delivery lead times would have been extensive and very costly. The necessary downtime was unacceptable, hence a repair which has successfully restored the vertical pump to full operation in a fraction of the time.



The Metallock repair, carried out offshore, involved the application of a flake glass coating material followed by machining using line boring techniques to recut wear ring glands.

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