

TSC StressProbe for Load Measurement On FPSO Mooring Chains

TSC StressProbe technology has been adapted for use on FPSO mooring lines in co-operation with SBM Offshore to measure the tension load. The technique is totally non-intrusive and therefore ideal as an in-service tool where mooring load information is required without affecting in any way the mooring. The system has been recently used by SBM Offshore to measure the mooring line tensions on 114mm studless chain used as part of an FPSO mooring system.

The StressProbe system comprises computer controlled topside instrument and an underwater probe. The probe is placed on a chain by the diver and a number of readings taken by the system. These are then interpreted into load readings using calibration curves, obtained from full scale tests. No data is displayed to the diver.

No special preparation of the chain surface is required, other than removal of marine growth using hand tools.



Diver placing Probe and Demag yoke on an FPSO chain

StressProbe Instrument tough book laptop and general purpose probe



The StressProbe has also been successfully used on different size chains as well as on studded and studless chain types.

StressProbe is based on the measurement of stress induced magnetic anisotropy. It is non-contacting and can be used on any ferro-magnetic material. The equipment is easily portable and consists of a probe, an instrument and a laptop computer all housed in a robust splash proof case, containing all the necessary electronic hardware. The laptops used are Toughbook style and the stress measurement is controlled by TSC's SP software, a user-friendly package compatible with Excel.