



Diab makes light work of offshore noise reduction

Maintaining a reasonable sound volume is difficult in the limited space available on an offshore rig. Traditional noise enclosures have involved serious weight tradeoffs, but a new construction ensures a comfortable working environment at a fraction of the burden.

Workers on an offshore rig are exposed not only to harsh elements, but also to harsh working conditions. There is constant noise from drilling motors, pumps and other heavy-duty machinery, which must be contained in special noise enclosures for the comfort and safety of the employees.

The design of these enclosures is determined not only by acoustic requirements, but also by other factors. Weight, for example, is a natural concern on an isolated platform in heaving seas. At a typical weight of over 9 tonnes, traditional enclosures of insulated steel have serious drawbacks.

For this reason, Diab AS in Norway has led a team to develop an alternative, lightweight noise enclosure using sandwich composites. Comprising specialist offshore suppliers Mundal Subsea AS, Maritime Engineering AS and Frank Mohn Flatoy AS, the team has arrived at a unique sandwich construction that meets the structural, environmental and fire-safety requirements of offshore applications.

The new enclosure is based on *Divinycell P*core from Diab, produced in a thickness that yields ample panel strength and insulating properties. The panels are given fiberglass laminate skins created with a fire-retardant resin, then bolted together and attached

to the floor by means of a steel frame. Although they cut the enclosure weight by half – to just 4.5 tonnes – the panels reduce noise from 114 dB inside to well below 65 dB outside.

The solution was first implemented on the Gullfaks oil platform in the North Sea, where an enclosure was installed in May 2011. Following successful tests, the enclosure concept was presented officially during the OTD (Offshore Technology Days) in Stavanger, Norway on October 18-20, 2011.

At present, the team is developing a further four enclosures for Statoil, who will use them on the new Goliat FPSO platform in the Barents Sea. Designed to withstand a seawater or explosion wave with an impact of 0.6 bar, the new enclosures will be larger, with dimensions of 5.7 x 2.9 x 3.7 m. In total, they will offer an extraordinary weight saving of 18 tonnes over their traditional counterparts.