

OBC gives a smarter and gentler handling of cables

The growing need for smarter designs OBC seismic industry has resulted in an 'untraditional' design approach. Are Matthiesen explains.

Within the OBC seismic industry there is a growing need for smarter designs to cope with the high price and short life time of traditional wire armoured OBCs.

Several designs in the market often require expensive mechanical terminations, high cost bend protectors and they degrade rapidly due to corrosion and rough handling.

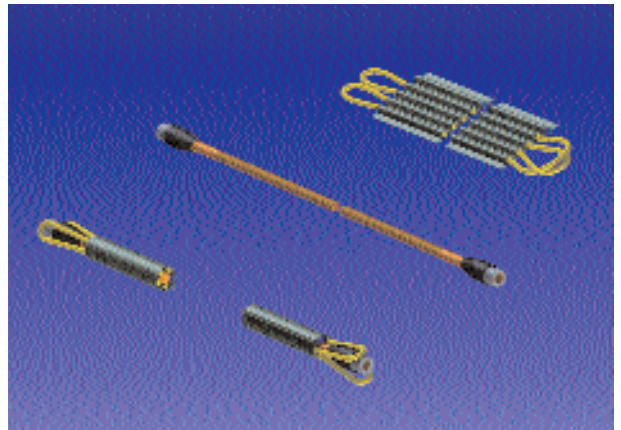
Over the years we have seen typical life time in the range of six months up to maybe three years depending on where you operate and how you handle your cable, especially when vessels are in transit.

The electrical integrity of many of these cable systems many times rely on one single electrical barrier only. It is often based on the reliability of PUR moulds with bonding towards cable outer jacket and a connector housing of metal or plastic. Delamination and other ways of water ingress through outer jacket of the cable will easily ruin the functionality of the cable as there is nothing that stops water from arriving at the back end of the connector where the connection point lays unprotected.

Some of these issues call for development of new solutions based on other ways of thinking and untraditional design approach. By re-thinking the concept of cable, stress relief and handling together with use of double electrical barriers, we can obtain a considerably extended life time and a smarter and gentler handling of the cable during operation on board the vessel. We call it Bennex OBC (BOBC).

In addition there is a growing need for low cost permanent systems. In the past we have delivered numerous long life solutions for permanent installations related to electrical, fibre optic, hydraulic and recently also high voltage termination of subsea umbilicals. We are also supplying steel structures to carry the umbilical and jumpers for local distribution of power and signals on the templates subsea.

Typical customers here are the larger engineering companies and umbilical manufacturers. The specifications are tough and material selection and scope of testing during qualification is in the high range scope and quality wise. Long life testing of solutions, extensive hyperbaric testing of terminations, accelerated aging



tests on seal material together with helium leak testing, electrical testing, etc. are standard procedure during qualification of such systems. Typical design life is 25+ years. Recently on Ormen Lange for Norsk Hydro, design life was 50 years. Take this experience and combine it with decades of knowledge in the traditional OBC market and you may get somewhere. We have done it and are currently presenting to customers world wide.

There are patents pending on several elements in these designs:

- The BOBC design is flexible and can be used for permanently deployed or retrievable systems.
- Reduced production cost due to less parts and shorter assembly time is driving down the total cable cost.
- New solutions for more careful cable handling on board the vessel are driving down total system cost as the expensive bend protector is removed.
- Stress member and cable element can be manufactured separately.
- 'Standard' cable used (no steel armour required).
- Increased lifetime by use of corrosion free stress member consisting of abrasion-resistant material with plurality of longitudinal, parallel pockets or sleeves.
- Rope or wire used as stress members and placed in the pockets.
- Sleeve carrying the stress members and offering cable protection.
- Sealing methods based on approved Bennex technology for long-life subsea applications (multiple barriers)
- Node housing with outer mechanical sealing resulting in lower cost on permanent systems as a result of use of less expensive node housing materials. ●

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