CASE STUDY

BC-10 DEEPWATER LIFTING SLINGS

Samson AmSteel®-Blue makes unique deepwater installation possible

AmSteel®Blue slings hook-up to conductor head.

THE STRONGEST NAME IN ROPE

PROJECT OVERVIEW

InterMoor was contracted by Shell for the deepwater installation of five conductors in the BC-10 Field located in the Northern Campos Basin, offshore Brazil. The Shell BC-10 Phase II Spacer Template and Conductor Installation project was completed in May 2012 in water depths of approximately 1,700 meters. Utilizing large, synthetic rope slings, it marks the second time this type of conductor installation has been performed without the aid of a drillship or drill rig.

Traditional steel rope would have been too heavy and difficult to work in this application. InterMoor chose two Samson slings of 120mm diameter AmSteel®-Blue, connected to the conductor heads with other rigging components, to deploy the conductor pipes from a barge to the seabed using a construction vessel. This project demonstrated that light-weight high modulus polyethylene (HMPE) fiber rope is becoming more widely preferred in the offshore industry, especially in deep water where the use of wire rope becomes weight prohibitive.

"We came up with a system to move the conductors from a barge that was less expensive for the field developer and oil company," McLean said, noting that barges and construction vessels cost about half as much as drill ships.

ANDREW MCLEAN *SENIOR ENGINEER FOR INTERMOOR, INC.*

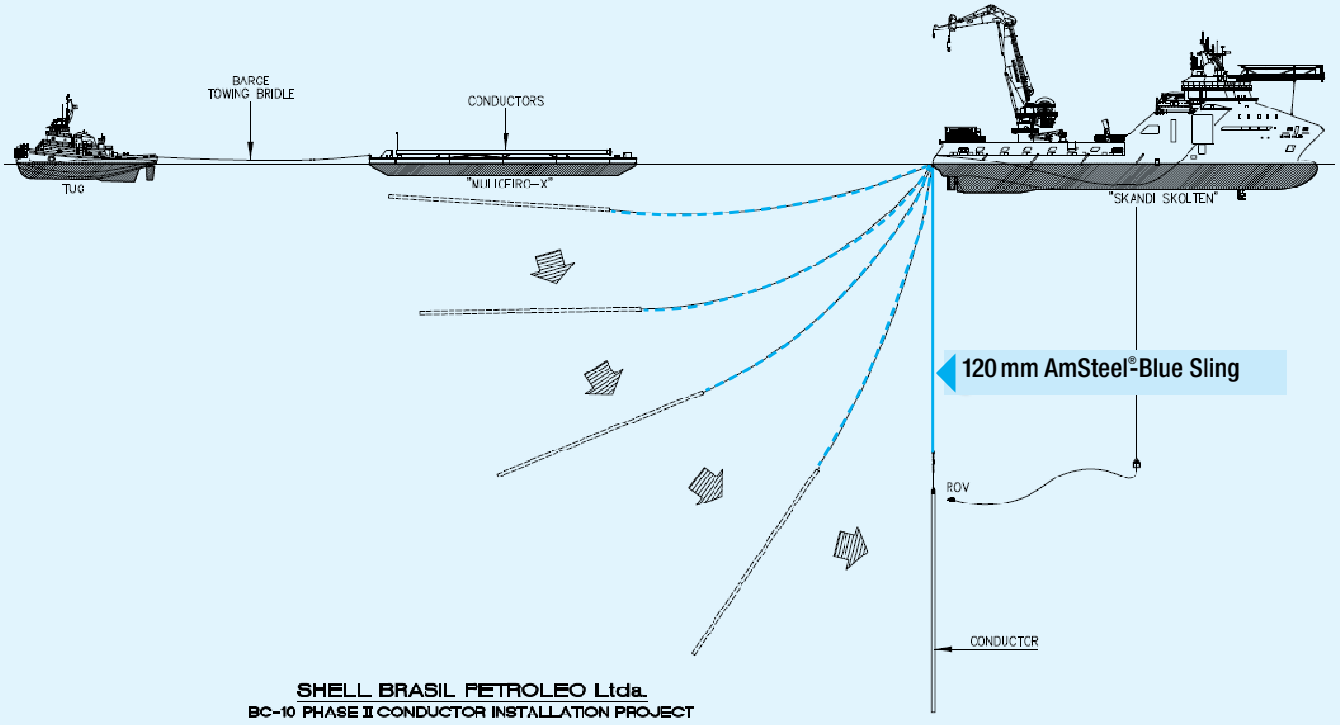
THE CHALLENGE: NEW INSTALLATION TECHNIQUE REQUIRES NEW ROPE TECHNOLOGY

Conductors are the pipes through which the drill string, holding the drill bit and related components, is threaded. "Installing conductors is done quite frequently by a drill rig on a drill string, by the drill ship itself," said Andrew McLean, Senior Engineer for InterMoor, Inc. However, drill ships can command millions of dollars per day.

"We came up with a system to move the conductors from a barge that was less expensive for the field developer and oil company," McLean said, noting that barges and construction vessels cost about half as much as drill ships. "The BC-10 Field project was the second time this conductor deployment method has ever been completed off a barge before the drill ship arrived on site," McLean said. "To the best of my knowledge, InterMoor used this method for the first time, industry wide, four years ago, also with AmSteel®Blue slings," during Phase I of the Shell BC-10 project.

The method InterMoor used employs a lowering line connected to the construction vessel's crane block in a vertical lift arrangement. The other end of the line is connected to the heads of the 1.2 m diameter by 62.5 m conductor pipes lying on the deck of the barge. Adequate slack is created in the line between the barge and the construction vessel before the conductors are rolled off the barge. Once in the water the conductor pipes are allowed to swing in a pendulum motion until settled vertically below the construction vessel's screws (see image below). The second part of the operation involves lowering the conductor to the seabed.

The technique requires an advanced type of line because wire rope, traditionally used offshore, is too heavy for this particular deep water application. The length of wire rope needed to lower the conductors to the seabed would have been more than the construction vessel's crane could have managed and less safe for the crew on the barge.



120 mm AmSteel®Blue sling supporting the load

THE SAMSON SOLUTION

Because of a long-standing relationship and a high level of confidence in them, InterMoor turned to SWOS (Southwest Ocean Services), a Samson master distributor located in Houston, Texas, who fabricated the slings to InterMoor's specifications and responded quickly to a tight delivery schedule.

"InterMoor called us looking for the ropes in a hurry," said Tracy Carrico, VP of SWOS. "They needed them on a vessel in Houston within 10 days." SWOS had the rope in stock and was able to fabricate, proof load, and deliver the new slings in about seven days, including the weekend.

InterMoor chose two 120 mm by 79 m slings made of Samson's AmSteel®-Blue as part of the lowering line arrangement to significantly reduce the weight of the system while maintaining the strength of the line. AmSteel®-Blue, a high-strength, lightweight fiber rope made with Dyneema,® is as strong as a similar sized wire rope. It is neutrally buoyant or slightly positive in seawater, making the catenary between the construction vessel and the barge far more manageable.

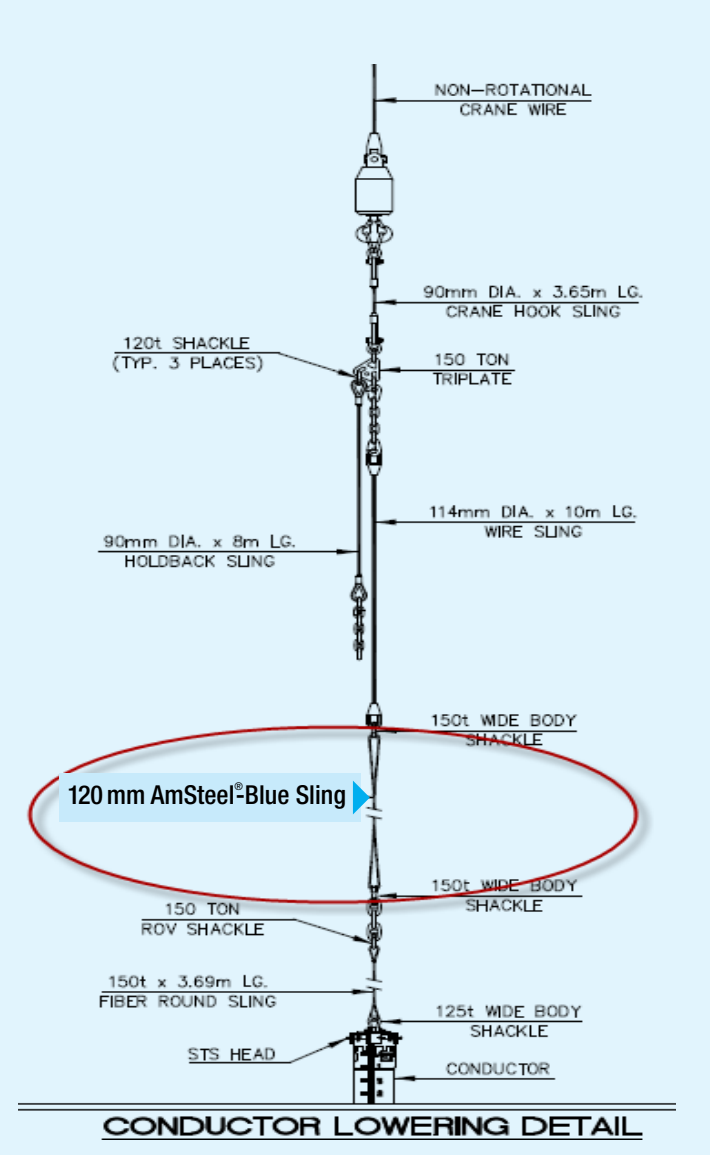
"AmSteel®-Blue is light rope, easy to handle on deck with minimal mechanical assistance," McLean said. "It's easier for the barge crew to handle compared to wire rope of same strength. I'm very happy with AmSteel®-Blue and I would very easily recommend it for similar projects."

THE SAMSON ADVANTAGE

Samson doesn't just sell rope. Samson partners with its customers through the design process, proper installation, crew training, custom documentation and determination of retirement criteria. With the most advanced R&D engineers, technical sales team and field service professionals, InterMoor was assured of having the right product for this unique deepwater application.

Samson also relies on master distributors, such as SWOS, to build long-standing relationships with end users. SWOS has become a trusted partner of InterMoor and is able to meet the offshore service company's needs quickly by carrying Samson's advanced synthetic ropes in stock and maintaining its own fabrication facilities.

It's these all encompassing relationships that set Samson and its distributors apart and deliver the best possible products and services to the offshore industry.



"AmSteel®-Blue is light rope, easy to handle on deck with minimal mechanical assistance. It's easier for the barge crew to handle compared to wire rope of same strength. I'm very happy with AmSteel®-Blue and I would very easily recommend it for similar projects."

ANDREW MCLEAN *SENIOR ENGINEER FOR INTERMOOR, INC.*

152 mm AmSteel®-Blue sling being proof loaded for the Greater Gabbard Wind Farm Project.

AmSteel®-Blue {872}

Samson doesn't just sell rope. Samson partners with its customers through the design process, proper installation, crew training, custom documentation and determination of retirement criteria.

FOR ADDITIONAL INFORMATION:
SamsonRope.com

We've put all our information here for easy downloading for anyone with access to the web. We think it is the best resource for information on high-performance synthetic ropes available anywhere.

- Rope specifications
- Product breakdowns by application and industry
- Technical bulletins
- Case studies
- Splicing instructions

SWOS

SWOS CORPORATE HEADQUARTERS
5721 Harvey Wilson Drive, Houston, Texas 77020 USA
Tel +1.713.671.9101 | Fax +1.713.671.2515

SWOS.net

samson
THE STRONGEST NAME IN ROPE

CORPORATE HEADQUARTERS
2090 Thornton Street, Ferndale, Washington 98248 USA
Tel +1.360.384.4669 | Fax +1.360.384.0572

SamsonRope.com