

Offshore and Special Cables



Offshore Cable Systems at NSW Today

Experience, Innovation and Service

Norddeutsche Seekabelwerke GmbH (NSW) has been manufacturing underwater cables since 1899. A century of experience in armored and non-armored cables for carrying power, signals, communications and fiber-optic applications has formed the foundation for a forward-looking organization committed to innovation and unrivalled customer service.

Worldwide Partnership

As a 100% subsidiary of General Cable Corporation (NYSE: BGC) – which is a global leader in the development, design, manufacture, marketing and distribution of copper, aluminum and fiber optic wire and cable products for the energy, industrial and communications markets – we benefit not only from its profound expertise but also from its global reach in the wire and cable industry.



Ideas and Quality Made in Germany

At our base at Nordenham, Germany, our research and development teams work continuously on a variety of projects such as developing and testing new cable materials, new applications, new machinery and handling equipment as well as reviewing and improving existing designs.

Extending the Frontiers

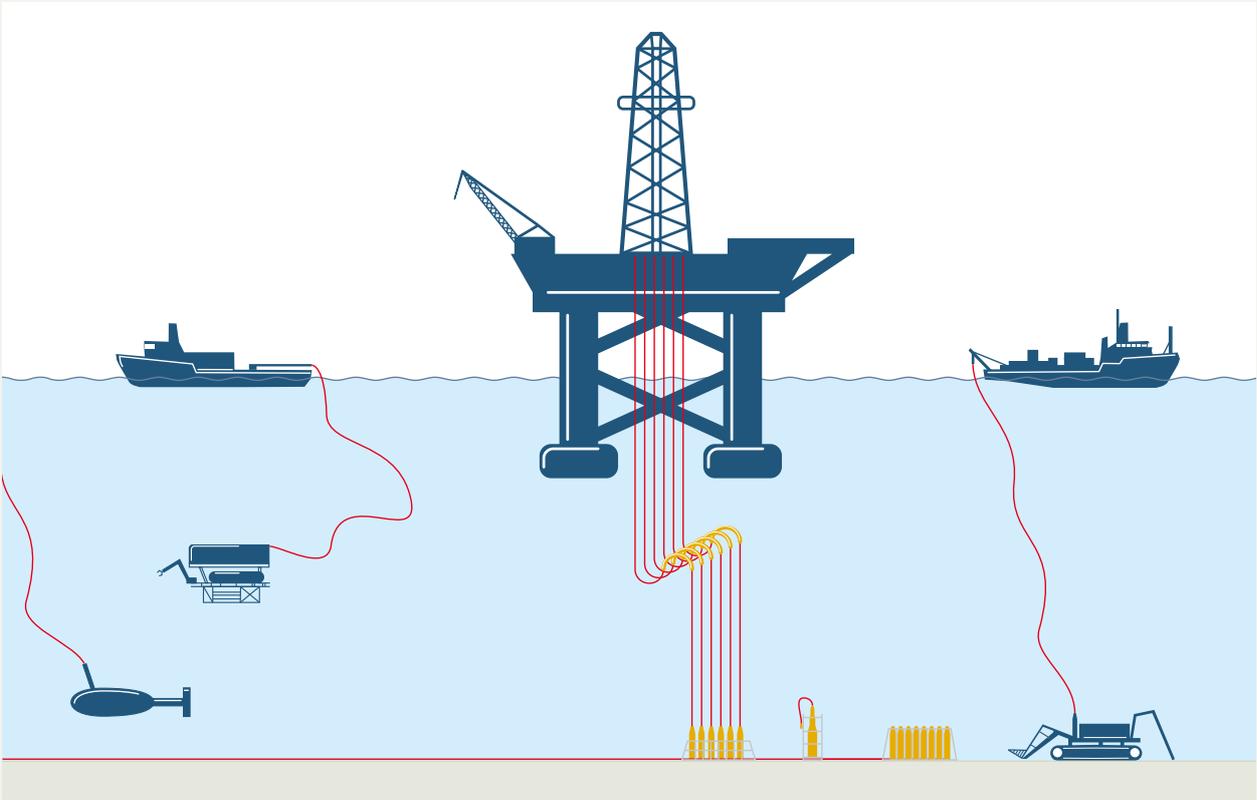
At NSW we are committed to teamwork and open communication both in-house and with all our clients. We aim to provide practical and creative solutions designed to help our customers effectively meet the underwater challenges of the twenty-first century. By utilizing all our skills and resources, we aim to extend the frontiers of cable technology.



Offshore Cables – Product Overview

Umbilicals

The challenges and potential of the offshore industry continue to grow apace. At the same time, our customers, e.g. manufacturers of ROVs or winches, have very special requirements. As a consequence, tailor-made solutions are needed in most cases. As the recognized experts in offshore cables, NSW can offer these solutions by meeting the stringent industry requirements. Developed on a case-by-case basis, our cables are reliable and cost-effective even under extreme conditions. Over the years, NSW has adapted new materials such as special metal alloys, high-density cross-linked polymers, thermoplastics and synthetic yarn to improve the elasticity and operational reliability of its cables.



Typical examples of cables we produce for the offshore industry are:

- › **Control cables**
- › **Fiber-optic data cables**
- › **Energy cables and components for the oil & gas industry**
- › **ROV main lift and tether cables**
- › **Plough and trencher umbilicals**
- › **Air gun and electro mechanical umbilicals**
- › **Submarine electro optical cables**



Netsounder Cables

One of our special cable applications is in the fishing industry. The deep-sea fishing industry of the present day utilizes advanced technologies because the smallest failures can have expensive repercussions. The widely recognized cable experts from NSW offer durable, reliable and cost-effective solutions with quality and adaptability based on many years of experience.

The first electroacoustic netsounders were introduced in 1965. NSW quickly recognized the potential of a suitable coaxial cable to transmit data from the netsounders to the monitor screens aboard the trawlers. The cable had to ensure reliable data transmission and, at the same time, be strong enough to prevent loss of the netsounder. At that time, the required load at failure was approximately 12 kN. Over the years, the requirements have become more stringent and today's cables can withstand forces up to 70 kN.



Tried and Tested Quality

Research and Development

Our research and development teams work in close cooperation with General Cable's experts. We also collaborate closely with specialists from leading suppliers of electronic communications transmission equipment to create state-of-the-art solutions for many of the world's leading network operators.

Quality Assurance and Environmental Protection

NSW maintains a quality management system according to ISO 9001 and an environmental management system in keeping with ISO 14001, each of which has been certified by LRQA and is reviewed regularly for effectiveness by LRQA auditors.



Health and Safety at Work

The health of NSW employees is ensured by a work safety management system. All NSW test equipment meets the standards of the German Federal Physical Laboratory. Specialized equipment is subject to regular maintenance and calibration by appropriate personnel or institutes.

Testing

To maintain and develop this reputation for quality, we procure only the purest raw materials. In addition, our facilities are also fully equipped for handling all mechanical, chemical, electrical, optical and performance testing. Specialist staff monitor and test all components at both pre-established and random stages of the manufacturing process.

A typical QC Program includes:

- › **QA acceptance testing for all incoming raw materials**
- › **Component inspection/testing during manufacture**
- › **Full electro/optical HV/LV characteristic testing**
- › **Special tests if required, e. g. bending/cycle/pull/break**
- › **Issue of full certification and documentation on completion**



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