Power Cable Systems

High voltage cables –
the arteries of the power grid
ABB offers high-voltage power cable systems for underground and submarine applications. We design, produce and install polymeric insulated cables for direct current (DC) or alternating current (AC) and oil-impregnated, paper-insulated cables for DC. Combined with ABB’s cable accessories they form a reliable cable system with a very long service life. Cable systems from ABB can be found all over the world, transmitting power between countries, connecting offshore wind farms and oil/gas platforms to mainland grids and feeding power into major cities.

Your needs – our response
The basic requirement from our customers is to have a connection from A to B – with minimal environmental impact and low losses. ABB can offer many degrees of involvement based on the customer’s needs. It could be assisting during the pre-engineering phase or making preparative studies of the power grid in order to design and offer the best solution. ABB can offer turnkey systems and project management or just cables, accessories, or installation of the cable system.

Customer value
Underground and submarine cable transmission solutions offer many benefits such as, lower electrical and magnetic fields, avoiding exposure to harsh weather conditions and minimizing the environmental impact.

In addition, the AC- as well as DC-cable systems from ABB are very reliable. They have a service life of many decades and a low life cycle cost.

Because ABB has extensive experience in the production and installation of power cables as well as the associated cable accessories, our products are designed to work together as a complete system. By utilizing our expertise, and by having one supplier for the entire system our customer can save a lot of time, effort and money.
Scope of supply
Our goal is to offer the most optimal solution for underground and submarine cable systems which can include:
- Power cables for underground or submarine applications
- XLPE (polymeric insulation) cables for AC up to 1,000 MVA at 420 kV.
- HVDC Light® (polymeric insulation) cable systems for DC up to 1,100 MW at +/-320 kV.
- Paper-insulated (mass-impregnated paper insulation) cables for DC up to 2,000 MW at +/- 500 kV (bipole).
- Separate or integrated optical fibre cable
- Cable accessories
- System design for network optimization
- Civil works
- Cable laying, installation and supervision
- Testing and start-up operations
- Disassembly and recovery of old cables
- Fault locating and cable repair
- Complete project management
- Training

ABB – pioneers and leaders in cable technology
Very few manufacturers can point to such a long tradition in the high-voltage field as ABB. We delivered our first electrical cable in 1883! ABB has been a pioneer in the high-voltage field and we have many world’s first and world records among our references.

Customer demands have challenged our development and we have risen to the occasion. By working directly with our customers to meet their needs, we have taken many major steps and have achieved successful market introductions and innovations for both AC and DC cables. We are always interested to work with our customers to better determine and meet their cable system requirements.

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Our cable development for HVDC applications has been closely linked to converter development from the early 1950’s until today (HVDC Light® cables). DC cables can be used over long distances and have reached such capacity that they now are used as alternatives to long overhead lines.

The latest example of a customer driven development is a dynamic polymeric insulated cable ABB designed for an oil platform in the North Sea. It is the world’s longest AC submarine dynamic cable used to connect a floating platform to shore.

To maintain our position at the forefront of cable technology, ABB invests heavily in research and development. Buying from ABB means buying the best product, long-term experience and confidence in quality manufacturing and design. Everyday we strive to develop the solutions our customers will need today as well as tomorrow.

ABB INC
High Voltage Cables
12331 Commerce Station Drive
Huntersville, NC 28078
Phone: +1 704 379 9600
Fax: +1 704 379 9604
www.abb.com/cables