


HIGH & EXTRA HIGH
VOLTAGE CABLES

 **CABLEL[®]**
HELLENIC CABLES

G R O U P





With a wide portfolio of reliable and competitive cable solutions for international customers, the Cablel Hellenic Cables Group is one of the largest cable producers in Europe. The Group manufactures power, telecommunication and submarine cables, as well as enamelled wires and compounds.

The Cablel Hellenic Cables Group represents the cable production and marketing sector of Viohalco SA. The Company started its activities in 1950 as a Viohalco plant and in 1973 was incorporated as an independent subsidiary under the name Hellenic Cables, expanding its production and trade operations. Today, the Cablel Hellenic Cables Group consists of Hellenic Cables S.A. which operates three plants in Viotia, Greece that produce cables, enamelled wires and plastic and elastomer compounds; the Fulgor S.A. plant in Corinth, Greece, which manufactures power cables, power and fibre optic submarine cables and copper wires; Icme Ecab S.A., a power and telecommunication cable manufacturer in Bucharest, Romania and Lesco Ltd Blagoevgrad, Bulgaria which manufactures wooden reels and pallets.

With a strong export orientation and focus on development of value added products, such as high and extra-high voltage cables and submarine cables, the Group implements significant investments towards enriching its product portfolio and enhancing its sustainability profile. The Company implemented a EUR 60 million approximately investment plan for the manufacture of high-voltage submarine cables in Fulgor's plant.

The Company's wide product range, which is sold internationally under the Cablel® trademark, extends to PVC, EPR and XLPE insulated power cables (rated up to 500kV), marine and low smoke halogen free cables, fire resistant cables, telecommunication, signal and data cables with copper conductors or optical fibres, as well as fire retardant halogen free plastic and elastomer compounds and enamelled wires. Wires and cables are supplied to a variety of international standards, such as VDE, CEI, ICEA, NF, SEN, BS, UL, NEMA, JIS, ASTM, DIN and ELOT. Many of the Company's products are certified by BASEC, VDE, IMQ, NF-USE, NETWORK RAIL, KEMA, DNV and UL.

All Cablel® enamelled wires are manufactured and tested to the IEC 60317-0-1 standard; customers may also request any other recognised international standard.

Technical know-how is combined with continual investment in state-of-the-art machinery, to ensure levels of efficiency and quality which meet the strictest standards. The Company's Quality Management System is certified to ISO 9001:2008, its Environmental Management System to ISO 14001:2004 and its Occupational Health and Safety to OHSAS 18001:2007. Cablel Hellenic Cables Group has the necessary expertise to develop and offer turnkey solutions that meet specific demands of its customers.

Commitment to quality and sustainable development has been a key factor in enabling Cablel Hellenic Cables Group to establish a strong market position internationally.

The Company's highly experienced technical and managerial staff have a strong commitment to innovation, technological excellence and outstanding quality, which ensures that users of Cablel® products have made a reliable choice.

The Cablel Hellenic Cables Group aims to constantly improve its offering and respond swiftly to changes in customer requirements around the world with reliable and safe products, based on environmentally-friendly technologies. At the same time, the Group places strong emphasis on the development of its people and the creation of value for its shareholders, partners and the communities in which it operates. Looking ahead, the Group plans additional investments in technology and innovative cable solutions, as a way of contributing to the creation of a sustainable future for its stakeholders.

CABLEL®

HELLENIC CABLES S.A.

HELLENIC CABLE INDUSTRY S.A.

The **HELLENIC CABLES Group of Companies** through **HELLENIC CABLES S.A.** and **FULGOR S.A.** undertakes turnkey projects for the supply and installation of High Voltage underground cables.

HELLENIC CABLES S.A. has been producing Medium and High Voltage cables since 1970. The company produced Medium and High Voltage paper insulated cables from 1970 until 1996. Since 1982 the company has been manufacturing Medium Voltage cables with XLPE insulation and from 2003 High Voltage XLPE cables up to 150kV.

2001: the company signed a know-how and technical assistance agreement for the design and manufacture of High and Extra High Voltage cables up to 500kV with the leading technology company VISCAS.

2003: the new High Voltage up to 150kV XLPE insulated cable production line was commissioned and the following year the first 150kV cable was certified by the well known Dutch laboratory KEMA.

2005: KEMA issued a test report for a successfully type tested 150kV system consisting of a cable with a Milliken conductor and accessories.

2008: a High and Extra high Voltage line was installed and **HELLENIC CABLES** acquired the capability to produce Extra High Voltage XLPE insulated cables up to 500kV.

2011: a 400kV one year Pre Qualification test was successfully completed at the Thiva test facility under IPH Berlin supervision.

2011: **FULGOR S.A.** the new member of the **HELLENIC CABLES Group of Companies** has increased the group's XLPE High Voltage production capacity.

2014: **FULGOR** expanded its submarine cable production capabilities to include the manufacture of static and dynamic type HVAC and HVDC XLPE insulated submarine cables and PE flexible submarine pipes and umbilicals.

Submarine & Power Cables ●



Power Cables ●



Telecommunication & Data Cables ●



Rubber & Plastic Compounds ●



Enamelled Wires ●



FULGOR S.A.

HELLENIC CABLE INDUSTRY



TURNKEY PROJECTS WITH HIGH VOLTAGE UNDERGROUND CABLES

Over the last eighteen years, the HELLENIC CABLES Group of Companies has successfully completed projects in several European countries which include the supply and installation of more than 450 km of High Voltage underground cables, while currently, it has under execution turnkey projects for the supply and installation of more than 250 km of High Voltage underground cables.

A list of the "turnkey" projects which have been successfully completed by the company is provided in the company web site: www.cablel.com



THE CAPABILITIES OF THE GROUP IN THESE PROJECTS INCLUDE:

- The engineering of the interconnection according to the applicable specifications and / or in consultation with the customer.
- The design and manufacturing of the cables.
- The supply of all required accessories which include the cable joints to be installed along the cable route and the sealing ends to be installed at the cable termination areas.
- The qualification testing of the system, including type testing and the prequalification testing if so required by the customer.
- The transportation and installation of the cables along the route with the use of specialized equipment.
- The civil works which include the excavation of the trenches, the back-filling after the installation of the cables, the relevant works at the terminal stations and the reinstatement of the work site in its initial condition upon completion of the installation of the cables.
- The assembly of the in-line joints along the route and of the sealing ends at the terminal stations.
- The supply and installation of a temperature monitoring system with the use of optical fibres, which may be included inside the cables or installed externally, to monitor the environmental temperature for the optimal loading of the cables.
- The commissioning of the system.
- The project management.
- The provision of the technical and the as-built documentation.
- The training of customer personnel in the operation and maintenance of the system.





Guided by its commitment to innovation and high quality and its tradition of customer service support, the company invests a significant portion of its capital and resources in technology, and most important, the training and development of its personnel, thus ensuring consistent delivery of reliable leading edge technology products and services which meet its customers specific needs.

HIGH AND EXTRA HIGH VOLTAGE CABLE DESIGN & PRODUCT RANGE

45 to 500kV HV / EHV XLPE insulated cables are designed according to IEC 60840 or HD 632 / IEC 62067 respectively, according to the end customer requirements.

The metallic sheath can be:

- Copper wires with an aluminium laminate bonded to the outer sheath
- A lead sheath
- A smooth longitudinally welded aluminium sheath bonded to the outer sheath*

The outer sheath can be:

- MDPE or HDPE
- PVC
- Halogen free and fire retardant

(* *Smooth Welded Aluminium Sheath (SWAS) is a new design for metallic sheaths, more environmentally friendly than the traditional lead sheath.*

- *More robust design when compared to copper wire screen and aluminium laminate*
- *An alternative design to lead sheath for underground cables (lighter cable), already accepted by many European utilities*

** Alternatively: Corrugated Welded Aluminium Sheath (CWAS)*



- Copper or aluminium conductor
Circular or segmental (Milliken)
waterblocked up to 2,500mm²
- Semi conductive tape
- Extruded semi conductive layer
- XLPE insulation
- Extruded semi conductive layer
- Semi conductive W/B tapes
- Metallic screen
- Outer sheath
- Semi conductive layer

REFERENCES

The above mentioned cables have been supplied to the following countries :
DENMARK, SWEDEN, NORWAY, GERMANY, UNITED KINGDOM, SPAIN, ITALY, ALBANIA, ROMANIA, BULGARIA,
GREECE, TURKEY, CYPRUS, SOUTH AFRICA, IRAQ, UNITED ARAB EMIRATES, INDONESIA, LITHUANIA,
AUSTRIA, TANZANIA, BELGIUM, ALGERIA.





HELLENIC CABLES S.A.
HELLENIC CABLE INDUSTRY S.A.

FULGOR S.A.
HELLENIC CABLE INDUSTRY

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