MEDIUM VOLTAGE CABLES

شركة صناعة الكابلات العمانية (ش.م.ع.ع)

Oman Cables Industry (SAOG)

Your Partner in Power Transportation Solutions

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Introduction - Oman Cables Industry (SAOG)

Oman Cables Industry (SAOG) develops, manufactures and markets a totally integrated product line of Medium Voltage Cables for a diverse variety of technological applications.

OCI was established in 1984 by the current Chairman, Mr. Mustafa Bin Mukhtar and the Vice Chairman and Managing Director, Mr. Hussain Bin Salman. Located in Rusayl, the Sultanate's largest industrial complex, the company has grown by turnover into one of the top ten industrial companies in Oman.

The company offers an unrivalled experience and vast product range developed organically at the leading edge of technology. It manufactures a variety of products, which include Medium Voltage power Cables, Low Voltage power and Control Cables, Instrumentation cables, Pilor cables, Overhead power transmission cables, Pilot cables, Overhead power transmission line conductors, Building wires & Flexible cables. It can also offer cables with special features like flame retardant properties, low smoke & fume (LSF) properties, cables with anti-termite treatment, UV resistant outer sheath, etc., suitable for different types of applications or environmental conditions.

OCI holds several important international approvals and manufactures its products in accordance with relevant IEC, VDE, CENELEC and British Standard specifications. The quality management system is accredited to ISO 9001 by TUV of Germany.

IT has won His Majesty Sultan Qaboos's trophy for Best Industry 4 times – in 1991, 1992, 1996 & 1997. The company was judged on many factors including product quality, training & safety, sales turnover, export, financial strength, use of local manpower & resources and others.

OCI has maintained an enviable growth record year on year. The products manufactured by OCI are sold not only in the regioni by also beyond to Australia, Japan, South Korea, East & West African countries, Europe & UK.

They have been installed in variety of applications including, Power plans, Sub-stations, Oil refineries, Fertilizer complexes, Petroleum & Gas handling facilities, Hospitals, Shopping Malls, Hotels, Airports, etc.

The company is driven by a central philosophy based upon 3 key factors – PARTNERSHIP, INNOVATION and QUALITY. We take pride on our ability to offer products to each of our customers by meeting their specific needs – quickly, efficiently & with an assurance of product quality.

This brochure gives details of the more commonly used types of Medium Voltage cables with options of type of conductor, number of cores & type of armouring. However we can also offer cables with construction different from those covered in this brochure as per relevant national or international standards or meeting your specific requirement.

Product Range

Voltage Grade	:	3.3 KV to 18/30/36KV (Uo/U/Um) (Equivalent to 33KV as per BS6622)
Conductor	:	Copper and Aluminium
Conductor Size	:	25 to 1000 sq mm
Specification	:	IEC 60502 Part 2, BS 6622, OR Any other International Specification covering above Voltage Range.

Special Features

OCI can also offer cables with different Sheathing, Screening, Taping & Armouring options as per Customer's Specific requirements. We can also offer cables suitable for superior fire performance characteristics as well as with Low Smoke & Fume (LSF) Properties. Special features like water sealing of conductors & screens as well as different colour of outer Sheath can be provided on request.

The cable design in this catalogue confirms to IEC 60502 Part 2 and in most cases to BS 6622. However if requested, we can separately offer guaranteed technical particulars for cables as per different international specifications or to specific customer needs.

Constructional Features

Conductor
We can offer cables with both copper or aluminium conductors. Conductors upto 800 sq mm will be circular compacted & stranded and shall comply with IEC 228 class 2.

1000 sq mm conductor will be circular stranded type on which a layer of semiconducting tape will be applied helically with overlap.

Conductor Screen
This will be an extruded layer of semiconducting XLPE applied under simultaneous triple extrusion process over the conductor along with the insulation and the insulation screen.

Insulation
This will be an extruded layer of insulating grade XLPE applied over conductor screen under triple extrusion process along with conductor screen and insulation screen.

Insulation screen
This will be a layer of semiconducting XLPE which will be applied by triple extrusion process over the insulation.

Metallic Screen
It will consist of a layer of copper tape applied helically with overlap over insulation screen. Other combinations of metallic screens as per customer's requirement can also be provided on request.

Laying-Up
In case of three core cables, the three cores are laid up with non-hygroscopic fillers like polypropylene(PP) fillers at interstices and a binder tape is applied with an overlap. These binder tapes can be of PVC or foamed Polyethylene.

Inner sheath (Bedding)
Extruded layer of PVC or PE is applied over the laid up cores. PVC is normally of grade ST2 and PE of grade ST7 as per IEC 60502 Part 2.

Armour
In case of Armoured cables, the armour is applied over inner sheath. For Single core cables this is of aluminium wires and for multicore cables the armour can be of one among the following options :-

a) Galvanized steel wire.
b) Galvanized steel tape.
c) Galvanized steel strip.

The armour is applied helically over the bedding.

Outer Sheath
An extruded layer is applied over the armour in case of armoured cables and over laid up cores in case of unarmoured cables. Outer sheath material can be either PVC, PE, HDPE or MDPE.

Special features which we can offer

- Water right construction (both radial and longitudinal).
- Strippable insulation screen.
- Metallic screen of multiple layers of copper tapes or a combination of copper wires and tapes to increase the earth fault current carrying capacity.
- Increased armour conductivity by way of insertion of hard drawn copper wires in armour.
- UV resistant coloured outer sheath.
- LSF (Low Smoke & Fume) MV Cables as per BS 7835.
- Flame Retardant MV Cables confirming to IEC 332.

Plant and Machinery

The medium voltage cable manufacturing facility at OCI is the most modern facility available in the region today with the state of the art machinery & equipment supplied by the biggest and the best names in the cable manufacturing machinery industry. The entire MV cables manufacturing plant at OCI is fully air-conditioned with humidity control to ensure contamination free atmosphere, the only kind in the whole of Middle East.

The heart of MV cables manufacturing facility is the CCV line. This line supplied by Maillefer, Finland incorporates some of the most modern features like,

- Triple extrusion head to ensure superior quality of extrusion and uniform bonding of conductor screen, XLPE insulation and the insulation screen.
- CDCC – Completely Dry Curing & Cooling in an inert atmosphere of nitrogen.
- In line X-ray machine for checking proper concentricity as well as measuring thickness of extruded materials.
- Fully Computerized auto-cure control system, which controls all driving parameters to achieve best curing of extruded materials.
- Fully Automatic compound handling system in a positive pressure atmosphere ensuring a contamination free line, which is absolutely essential to achieve superior quality product.

Some of the other Machines include:-

- Drum Twister from SKET, Germany
- Screening machine from Pourtier, France.
- Extruder from Troistar, Germany, etc.

With the manufacturing facilities incorporating the use of latest available technology, the MV cables offered by OCI provides customers with a definite advantage in terms of :

- Compete adherence to specifications,
- Superior overall performance,
- Minimum risk of insulation failures,
- Much longer service life.

Triple Head Extrusion – CCV Plant

MV Cables Testing Facility

OCI has made major investment in the Testing facilities for its MV cables factory. We have equipped ourselves with the latest and most advanced cable testing facility available in the world.

The screened room for 'Partial Discharge' Test as well as other tests has been supplied and erected by M/s ETS Lindgren, UK, who are the world leaders in interference technology products. This facility is the first of its kind in the region & ensures detecting discharge levels less than 1pC, the lowest achievable value in the world today.

Apart from the above, the other major testing facilities include:-

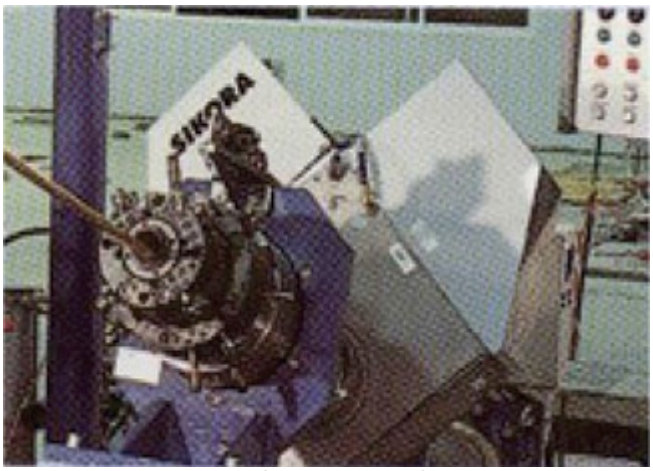
a) 1000 KVA, 100KV – Series Resonance Test set with fully automatic control system from M/s Hipotronics, USA.
b) 300KV, 15KJ – Latest Impulse Test facility from M/s. Haefely, Switzerland.
c) Fully automatic 'Tan delta' measuring facility from M/s Tettex, Switzerland.

We have also installed many in line devices/facilities for checking the product quality during the manufactureing process like the X-ray machine installed in the CCV line, Curing Optimization Software, etc, to avoid any risk or failure & to ensure a long service life for our products.

With these modern equipment & facilities, we ensure to maintain close manufacturing tolerances, high accuracies to customer specifications as well as effective monitoring of the entire manufacturing process to offer a world class product.

OCI's quality management system is accredited to ISO 9001:2000 by TUV Germany. The design validation for our MV Cables range has been done at recognized international laboratories.

With the above state of the art Testing Facility, we can conduct all Type, Routine as well as Special Tests mentioned in IEC 60502 Part 2, BS 6622 & other international specifications, in-house. While 100% of the cables manufactured by OCI are tested for Routine tests prior to dispatch, however if the customers desire to witness these tests or other Type/Special tests, they can nominate their representatives or appoint a third party to witness the same at OCI factory.



In Line X-Ray Unit


Control Panel