





Cesit Ingegneria S.P.A. www.cesit.net

Commissioning and Diagnostics

Cable Services

Power quality and availability is vitally important to all production, professional and personal activity.

All component parts of the electrical infrastructure must provide the highest levels of reliability: high- and medium-voltage cables, joints and terminals are key components in power transmission and distribution networks.



Cesit Ingegneria S.P.A. offers the following services on networks of up to 400 kV:

Realisation of underground cable lines

Finishing of accessories

Testing and commissioning

Diagnostics

Consulting

Fault finding and repair

Medium-Voltage Joints and Terminals

The correct finishing of joints and terminals for high- and medium-voltage cables plays an essential role in ensuring the reliability of networks.

We provide a comprehensive service for the execution of the following accessories on cables with insulation in hard grade ethylene propylene rubber (HEPR), crosslinked polyethylene (XLPE) or impregnated paper with voltage of up to 70KV:

• Male and female disconnectable terminals for cables with extruded (HEPR), Polylam AIR BAG or impregnated paper insulation for indoor and outdoor applications

• Joints of any type of cable and section with either extruded or impregnated paper insulation (belted, radial-field and non-radial field)

All our relevant field-personnel are qualified experts, to ENEL standards, in the execution of joints and terminals on overhead or underground medium- and high-voltage cables

Applied Voltage Testing

We can test medium-voltage cables both in direct current and using the VLF method in alternating current at frequency f = 0.1 Hz. The applied voltage test at frequency f = 0.1 Hz is adopted as an alternative to the direct voltage test as a result of the harmonisation of European standards.

With a VLF 0.1Hz high-voltage AC generator, it is possible to conduct field-tests of the dielectric strength of cables, electrical systems and parts thereof, including:

Testing of new cables after installation

Testing of cables with power off

Periodic testing of cables

Testing of electrical power components

Insulation testing of electrical equipment such as rotating machinery in accordance with IEEE 433

Testing after the execution of joints

Fault Finding on HV/MV Cables

Thanks to our mobile workshops and portable instrumentation, we offer a rapid response in the event of an emergency, for the purpose of fault finding on low-, medium- and high-voltage cables. We possess the compact and manageable equipment that is essential for reaching inaccessible locations.

We use our equipment to offer the following services:

Fault pre-location with the echometer method

Precise location and pre-location of faults in high-, medium- and low-voltage cables

Underground cable route tracing, including in service

Measurement of the installation depth of electrical cables

Selection of a specific cable within a bundle of cables, including in service

Insulation testing with variable voltage at frequency f=0.1 Hz or with direct current

Predictive Diagnostics on MV Cables

We have highly qualified personnel and all the necessary instrumentation for cable diagnostics.

Predictive diagnostics enables us to locate possible weak points deriving from imperfect finishing of joints or terminals and cable defects.

We undertake:

Partial discharge measurement

Measurement of loss angle tgð

The measurement of loss angle provides differentiated information about the ageing of insulated cables in PE/XLPE

It is thus possible to distinguish between new cables, slightly damaged cables and cables suffering from severe watertree damage

It is therefore possible to determine the urgency with which the cables concerned need to be replaced

Cesit Ingegneria S.P.A.'s capabilities also extend to the use of **Fibre Optic**, because the Company has invested in the training of its technicians and upgraded its fleet of instruments with the best, latest-generation fusion splicers and OTDRs.

Our experience enables us to offer consulting and support services for all problems relating to electrical cables.



