

# Okonite Cables

## Facilities Overview

### District Offices, Manufacturing Plants & Service Centers

Manufacturing Plants



Orangeburg, SC - Compound Facility



Orangeburg, SC - Manufacturing Plant



Richmond, KY - Manufacturing Plant



Santa Maria, CA - Manufacturing Plant



Cumberland, RI - Manufacturing Plant



Paterson, NJ - Manufacturing Plant

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Service Centers



Houston, TX



Kansas City, KS



New Orleans, LA



Portland, OR



Pittsburgh, PA

Corporate HDQ



Ramsey, NJ

# OKONITE

## SUBSTATION CONTROL CABLES



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*Setting the Standard in Quality Since 1878*

Okonite 12/2015



## APPLICATION

Utility substation control cables are multiconductor cables used to transmit low voltage and low current signals between the various electrical components (e. g. current transformers, relays, alarms, and monitoring equipment) in a substation. The signals can be analog or digital, continuous or intermittent.

Substation control cables are generally terminated in cabinets and the utilization equipment. They are often installed in cable trays, wireways, conduits, duct banks & trenches. These cables are suitable for wet or dry locations. Ambients are typically assumed to be 40°C air and 20°C earth.

Substation control cables can be rated 90°C or 75°C for wet and dry applications. Most substation cables have a minimum -25°C installation temperature, but cables can be designed for -40°C installation applications, also.

Substation control cables can be shielded or unshielded. Shielded cables are used when shielding from ambient electrical interference is required. Typically shielded control cables are utilized in 230kV and above substations or, at lower voltages, where requirements dictate the need. High voltage transients could cause erroneous operation of or damage to equipment. Properly grounded shields help mitigate these types of occurrences.

The lower the shield resistance the more effective the shielding. Shields are typically a helically applied overlapped copper tape or a longitudinally applied overlapped copper tape. Sometimes the metallic tape is supplemented with a bare copper grounding conductor.

Depending upon how these cables are installed, substation control cables are often required to pass a vertical tray flame test.



Contact your Okonite Sales Rep. who can assist you along with our staff of Application Engineers.



## INDUSTRY STANDARDS

Okonite can manufacture cables to the following industry standards:

- ICEA S-73-532/NEMA WC57: Standard for control cables.
- ICEA S-95-658/NEMA WC70: Standard for power cables rated 2000V or less for distribution of electrical energy.
- UL 1277: Standard for electrical power and control tray cables with optional fiber members.

## FLAME TEST RATINGS

The following flame test ratings can be provided on Okonite substation cables:

- IEEE 383-74
- IEEE 1202

## CABLE DESIGN CONSIDERATIONS

- Conductor: Bare or tinned copper stranded conductors, Class B or C
- Insulation Color Code: ICEA methods 1 to 4.
- Copper Grounding Conductor.
- Insulation: EPR, XLPE, PE/PVC.
- Voltage Ratings: 600V – 1000V.
- Shielding: Helically applied copper tape, longitudinal corrugated copper tape, bare or tinned.
- Jacket Rip Cord.
- Overall Jacket: PVC, FR PVC, TP-CPE, TS-CPE, LSZH (TPPO, XLPO).

