



STANDARDS BULLETIN No : S02-5-010

SUBJECT: 11-22kV underground cable specification update

Background

Power and Water Corporation will be introducing a revised 11-22kV cable specification (STSP 02– 003). This means a new 11-22kV cable construction will be surfacing in both internal and external projects in the very near future. The main differences which field staff needs to note are as follows:

Summary of changes

- Move away from normal XLPE and use tree retardant classed material – TRXLPE
 - Better material against treeing within the XLPE
- Exchanging the current PVC and HDPE layers around, so that the PVC is next to the metallic screen and the HDPE on the outer layer.
 - The HDPE is a much harder material which will provide additional cable protection during installation and against pests. HDPE having a higher density than PVC will also provide additional moisture ingress protection.

PVC has a high temperature tolerance and is therefore better suited to be next to the metallic screen during fault conditions.

- A graphite coating is to be applied to the outer surface of the over sheath or a semi conductive extruded outer layer
 - To facilitate cable testing

Special care needs to be taken with the graphite and semi-conductive outer layer when it comes to terminations. This additional step will be included in future termination kits.

- The graphite coating outer jacket can be cleaned with a suitable PWC approved wipes. The jacket should then be thoroughly abraded using a metal oxide paper with a grit of at least 240 or lower (i.e. 120 or 80). This should be done over a distance of 200mm and cleaned thoroughly again. A quick check can then be done with a megger between the untreated area and the end of the prepared section to make sure a high insulation resistance value is achieved.
- The extruded semi conductive layer, the bonding strength and relative thicknesses of the two jackets may present a problem. The best solution is to remove both layers down to the nylon over a distance of 200mm and replace it with a heat shrink tube (heavy wall) and use the end of the tube at the datum mark for accessory preparation. Do not damage the nylon.