

### 3.5.3. MARINE CABLE SYSTEM AND DESIGN

3.5.3.1. The Marine Cable Route will consist of four 320 kV HVDC cables, installed for the majority of the route as two HVDC Circuits. There is the potential that the Marine Cables will be installed as four individual cables for up to approximately 200 m between the point where the Marine Cables exit from the Landfall Horizontal Directional Drilling ('HDD') ducts on the seabed and the location where the trenching starts for the Marine Cables. Each HVDC Circuit will be capable of facilitating the transfer of up to 1000 MW, resulting in a total net power transfer capacity of up to 2000 MW, net of losses.

#### Cable System

3.5.3.2. The Marine Cables will use two Twin Symmetrical Monopole HVDC links each known as a HVDC Circuit. This enables the independent operation of each 1000 MW HVDC Circuit and therefore redundancy during operation.

#### Cable Design

3.5.3.3. It is anticipated the HVDC Marine Cables will use copper conductors with Cross Linked Polyethylene ('XLPE') insulation. This type of cable has an XLPE insulation extruded over the conductor and is covered with a water tight lead alloy sheath to protect against water ingress. Over the lead is a polyethylene anti-corrosion layer, bedding layer, galvanised steel armour wires with a polypropylene string layer overall.

3.5.3.4. Each individual Marine Cable will have a diameter of approximately 140 mm and an approximate weight of 50 kg/m (in air) where a copper conductor is used. Plate 3.2 illustrates the cross section of a typical marine XLPE cable.

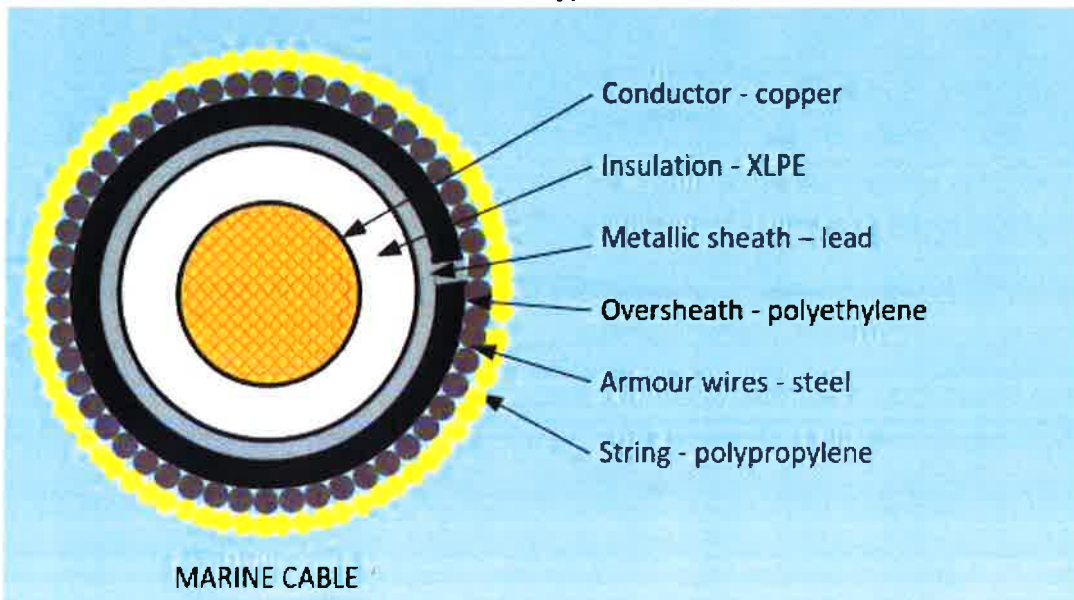


Plate 3.2 - Cross section of a typical Marine XLPE cable