

Geo-Sense Cable Requirements Rev3

Armored Cable

- At least double wrap torque balanced galvanized steel wire
- Minimum breaking strength $\geq 50\text{kN}$
- Outer Sheath (Polyurethane Preferred)
- Separate layer(tape..?) to make breaking out the fibers easier

Bend Radius

- A bend diameter of the cable shall be ≥ 0.5 meters (20")

Weight in Sea water

- Cable weight $\geq 0.3 \frac{\text{kg}}{\text{m}}$ (negatively buoyant)
- Density Range 2.8 to 3.5 g/cc

Fiber Optics

- Fibers shall to be encased in a stainless steel k-tube Sheathed in (Polyethylene or Polyurethane)
- Optical and mechanical specifications for the optical fiber: 2-4 fibers (Single Mode)
 - The type of the fiber is specified (SMF-28e) as well minimum performance rating (e); operating wavelength (1550 nm) and maximum acceptable losses (18 dB per fiber) and attenuation (0.2 dB.km⁻¹ at 1550 nm)
 - The optical fiber needs to be in the tight buffer configuration, (presumably 245μm buffer) to ensure good mechanical coupling of the optical fiber(s) to the fiber bundle assembly
- Fibers shall run down the core of the cable(not stranded with galvanized steel wire)
- Fibers are to be compensated with gel for hydrostatic resistance(SWD=1000m)
- The cable will be deployed for ~40 days

Other Specifications

- Fiber breaking cable load $\geq 20\text{kN}$
- OD of Cable $\geq 12\text{mm}$ (Not to exceed 16mm)
- Excess fiber in tube 0.1 - 0.3%
- Outer jacket marked at one meter increments as follows
<Cable ID ><Product Order No> <Optical fiber type and quantity> <Vendor>
<year>, <meter>
- Application: Sea floor fiber optic strain cable
- Deployment/Recovery will be a dynamic condition
- Length 1000M X2 (Continuous Lengths)
- Outer sheath color that is visible on the seafloor (i.e. Green, Orange, Yellow, etc)
- Print a black stripe along the length of the cable(For cable "hocking" inspection purposes post deployment)