

Geo-Sense Fiber Optic Cable Specification Rev 2

Armored Cable

- Double wrap torque balanced galvanized steel wire with bitumen+wrapping
- $60\text{kN} \pm 10\text{kN}$ minimum breaking strength
- Outer Sheath (Polyethylene or Polyurethane or ...?)
- Separate layer(tape..?) to make breaking out the fibers easier

Bend Radius

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

Weight in Sea water

- $0.375 \frac{\text{kg}}{\text{m}} \pm .125$ (negatively buoyant)

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 245 μm buffer) to ensure good mechanical coupling of the optical fiber(s) to the fiber bundle assembly
 - Minimum of four (4) SMF-28e fibers (or better, SMF-28e+, or SMF-28 Ultra), per 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

5620 lb-force

- Fiber breaking cable load $\sim 25\text{kN} \pm 5\text{kN}$
- OD of Cable $\geq 15\text{mm}$
- 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