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Optical fibres and hybrids (optical + electrical) in harsh environment

STANDARDS

Product ABS 0963-003 LF; EN 4641-100

APPLICATIONS

With these high mechanical, chemical and optical properties, this cable has been designed for harsh environments such as :

- Aeronautical
- Geophysics,
- Space,
- Missile,
- Chemical industry.

Construction

- OPTICAL FIBER
Core + cladding + coating
Silica/Silica/Silicone type 62.5/125/400 μ m
- PRIMARY JACKET
Copolymer zero halogen high temperature
= 0.90 ± 0.05 mm
- MECHANICAL STRENGTH
Polymer aromatic fiber braid
- OUTER JACKET
Copolymer zero halogen high temperature
= 1.50 mm (for info.)
+ ETFE = 1.80 ± 0.1 mm

Minimum bend radius

Storage > 40 mm

Long term > 20 mm

Short term (installation) > 12 mm

ABS 0963-003 LF - MAIN DATA

- **Maximum pulling force :**
Long term : 10 daN
Short term : 25 daN
- **Tensile strength : > 100 daN**
- **Nominal weight : < 4 kg/km**
- **Maximum attenuation at 20°C :**
at 850 nm : 4 dB/km
at 1300 nm : 2 dB/km
- **Effective index of refraction:**
at 850 nm : 1.4970
at 1300 nm : 1.4919
- **Numerical aperture : 0.275 ± 0.015**
- **Cable Bandwidth (MHz. km) :**
at 850 nm : > 400
at 1310 nm : > 1000
- **Operating temperature:**
Long term : -55 to +135°C
Peak: -65 to 150°C

ABS 0963-003 LF - STRONG POINTS

Mechanical properties :

- High temperature
- High tensile resistance
- High flexibility
- Low weight / Small diameter
- Low bending radius
- Easy strippability

Optical properties :

- High bandwidth
- Low cost ferrules (Telecom components)

Chemical properties :

- High chemical resistance to on board fluids
- Very low smoke and toxicity (according to ABD0031 chart 1)
- Flamability : non flammable

ABS 0963-003 LF - CONNECTION

Stripping of primary jacket , buffer and coating.

If mechanical stripping is used , we highly recommend :

- To strip directly from primary jacket to silica
- To carefully clean silica with a solvent such as MEK (Methylethylketone).

Residues of silicone can be removed with a wet tissue by wiping off of different angles in order to clean all the circumference of the silica.

If you dip bare fibre into solvent , take care to avoid contact between solvent and other part of the cable such as strength members, silicone and jacket.