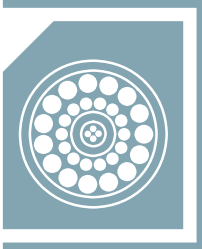
OALC7

Fibre optic cable for repeatered submarine systems



- For 8 to 12 fibre pairs
- Designed for latest generation reduced slope, large core and dispersion managed fibres
- 8500 m deployment and recovery
- Electrical resistance 0.5 or 0.7 Ohm/km
- 15 kV operation
- Crush resistance 10 kN/cm
- Full armor range
- Triple barrier against hydrogen
- Design life 25 years

The OALC7 cable has been specifically designed for performance and cost effectiveness with 8 fibre to 12 fibre pair repeatered systems.

The cable design is based around a 3mm laser welded stainless steel tube, which houses the fibres in a stress-free environment to ensure a fault free service lifetime.
The optical fibers lie freely in a thixotropic jelly which fills the steel tube blocking water penetration and limiting hydrogen permeation.
Alcatel's unique steel tube design allows precise control of the fibre to tube length ratio (known as fibre slack) during both manufacture and subsequent operational performance, due to the high stiffness and low thermal expansion of the stainless steel. Alcatel's steel tube technology has been developed to cater for the new generation of system fibres with higher sensitivity to small changes in fibre slack and micro / macro bending.

Ultra high strength steel wires are formed around the steel tube optical package to form a pressure resisting vault. This structure is locked together by a seam welded copper tube which is swaged down on to the steel wires providing a stable strength member with a low resistance power feeding conductor and hermetic sealing against hydrogen penetration.

A polyethylene extrusion bonded to the copper with a co-polymer adhesive, provides high voltage insulation and the finished light weight cable structure.

The armour packages incorporates an inner layer of polypropylene yarn bedding to increase the crush performance, thus making the cable substantially more resistant to damage from fishing tackle and anchors.

The OALC7 offers best-in-class optical and electrical performance based on Alcatel's unique combination of high stability stainless-steel tube, steel vault and high strength armour package technology.

Glossary

LW	Light Weight
SAH	Single Armor Heavy
DAH	Double Armor Heavy

LW

SAH

DAH

ALCATEL

The benefits are many:

- high optical performance, due to the steel tube technology;
- high electrical performance, due to the armor package design, superior quality polyethylene and associated proprietary processes;
- high hydrogen protection, due to a triple barrier;
- high resilience against fishing tackle and anchors.

In addition, the OALC7 features a lower weight and a smaller diameter than other competitors' products on the market with equally good mechanical performances.

This gives the following benefits:

- safer handling;
- increased storage capacity;
- faster marine installation as onboard storage is increased;
- lower demands on maintenance storage space.

Performances and characteristics

		LW	LWP	SA	SAH	DAH	RAH
Performances	**Unit**	**Values**	**Values**	**Values**	**Values**	**Values**	**Values**
NTTS	kN	80	80	200	300	480	300
NOTS	kN	55	55	150	200	350	200
NPTS	kN	25	25	75	100	200	100
UTS	kN	100	100	320	450	700	450
Characteristics							
Outer diameter	mm	20	27.5	34.5	38	56	54
Weight in air	kg/m	0.82	1.17	2.8	3.7	9.8	9.6
Weight in water	kg/m	0.50	0.56	1.8	2.5	7.2	7.2
Depth	m	8,500	6,000	2000	1,500	500	200

NTTS: nominal transient tensile strength
NOTS: nominal operating tensile strength
NPTS: nominal permanent tensile strength
UTS: ultimate tensile strength

OALC7 global submarine cable references

I2i (India-Singapore) 3,500 km

Ed.01 - January 2002
Printed in France.

ALCATEL
Submarine Networks
72, avenue de la Liberté
92723 Nanterre Cedex
France
Tel. +33 (0)1 55 51 63 71
Fax +33 (0)1 55 51 64 30
www.alcatel.com/submarine
product.marketing@asn.alcatel.co.uk

ALCATEL