

## OALC4

### Fibre optic cable for repeatered submarine systems

- Up to 16 fibres
- Maximum deployment depth: 8000m
- Double barrier against hydrogen
- High density polyethylene
- Adaptable ohmic resistance
- Highly reliable over 25 years
- Highly resistant to cable breaks
- Complete range of armouring

Alcatel has developed a complete range of fibre optic submarine cables, one of them being the OALC4 cable family. The OALC4 cable has been designed specially for repeatered systems, benefiting from our past extensive experience in the conception and development of submarine fibre optic cables.

The cable design is based on a welded steel tube, housing up to 16 fibres in a stress-free environment to ensure a long lifetime.

At the heart of the cable is the fibre unit structure where the optical fibres are set in a steel tube and are protected by a jelly from water penetration and hydrogen.

The composite conductor is composed of the fibre unit structure protected by a very high-strength steel wire vault, surrounded by a seam-welded copper tube swaged onto the steel wires.

Longitudinal watertightness is provided by a water-blocking material.

The composite conductor is insulated with high-density polyethylene. The insulation also provides abrasion resistance (four times more resistant than conventional insulants). This structure is used for deep-sea deployment and is our lightweight cable (LW) type.

The OALC4 cable may be used at any sea depth between 0 and 8000 meters for the 1.6 ohm/km version and between 0 and 7000 meters for the 1.0 ohm/km version.

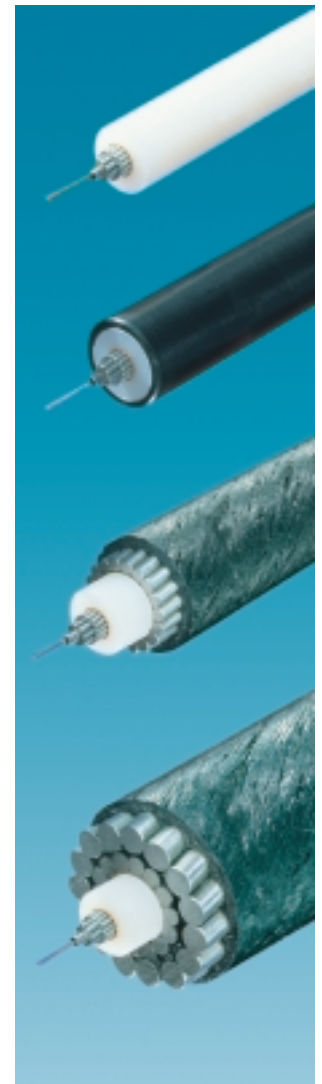
Armoured cables use the deep-sea cable (LW) structure, and additional protection is provided according to the conditions and nature of the seabed.

The OALC4 cable offers exclusive benefits for our customers:

- Better optical performance owing to the tube technology
- Better abrasion performance owing to the high-density polyethylene
- Further hydrogen resistance owing to a double barrier (copper tube plus steel tube)
- Adaptable ohmic resistance.

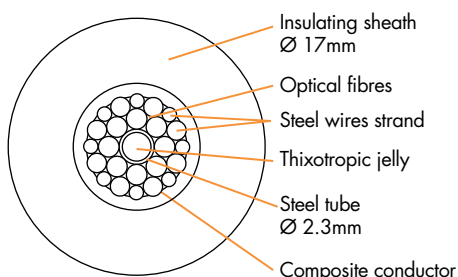
In addition, our cable features a lower weight and a smaller diameter than similar products on the market and offers a number of extra benefits for the customer:

- handling is easier, so the risk of damage is reduced
- storage capacity is increased both in volume and in weight (i.e. storage capacity is 60% more in volume and 50% more in weight)
- shorter and less costly marine installation schedule as the shipboard cable storage tanks can hold more cable for a lay
- reduced shipping and storage costs for the customer's spare cable.



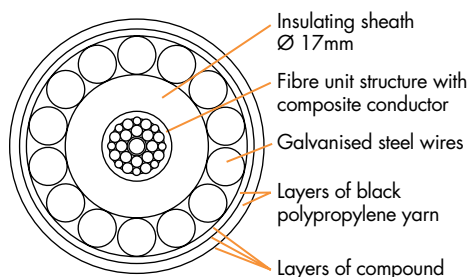
*Typical cable types from the OALC4 family*

## Cable performance



Outer diameter: 17mm

OALC4 Lightweight Cable (LW)



Outer diameter: 31mm

OALC4 Single Armoured Cable (SA)

		LW	LWP	SAL	SA	DA	RA
Performance	Unit	Values	Values	Values	Values	Values	Values
NTTS*	kN	50	50	200	250	400	250
NOTS*	kN	30	30	150	200	300	200
NPTS*	kN	20	20	100	150	200	150
UTS*	kN	70	70	280	370	560	370

## Characteristics

Outer diameter	mm	17	23	28	31	46	46
Weight in air	kg/m	0.5	0.75	2.0	2.6	7.5	7.4
Weight in water	kg/m	0.27	0.33	1.4	1.8	5.7	5.6

\*NTTS: nominal transient tensile strength

\*NOTS: nominal operating tensile strength

\*NPTS: nominal permanent tensile strength

\*UTS: ultimate tensile strength

## OALC4 global submarine cable references

System	Length (km)
SEA-ME-WE 3	18,624
Candalta	104
Atlantis 2	13,056
Northstar	3,227
UK-Germany 6	556
Americas 2	8,315
MAC-1	7,485
Japan-US	11,719
BS FOCS	1,198
SAT-3/WASC	14,110
SAC	15,689

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