

# ACOPTIC®

## Cable laying techniques

Pulling	Jetting (air-powered blowing)	Floating
Depending on the weight and the coefficient of friction	Depending on the cable diameter, the duct, the pressure and the rate of flow of the air	Depending on the weight of the cable. The cable must be light with a specific gravity near 1
Up to about 10 kilometres	2 000 m segments connected in series	5 000 m segments connected in series
220 to 270 DaN	100 to 150 DaN	< 50 DaN
Be careful to limit the breakaway force (the tension required to start the operation). The use of a winch limiting the tensile force is recommended	Also known as the "push-pull" method: the cable is pushed into duct and pulled by a compressed air-driven shuttle	Water (floating) is used as the carrying fluid. In any case this method imposes less stress on the cable. The lighter and more compact the cable, the greater the maximum segment length that can be achieved. The use of an incompressible fluid also improves performance.



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## Cable laying techniques

Direct burial	Micro-grooves	Overhead
	Be careful to ensure compatibility between the cable jacket and the filling of the micro-groove (temperature, etc.)	Small spans
Length of a cable drum	Length of a cable drum	Length of a cable drum
≥ 100 DaN	Related to the method of handling	Depending of the span and climatic conditions
The cable must be mechanically strengthened: HDPE jacket of radial thickness ≥ 1.5mm and steel or non-metallic armour. These products can also be placed in channels.	Possibility of placing 96 optical fibre cables in a 10 mm wide groove. Cables reinforced with a metallic or non-metallic armour, typically 60 optical fibres within a diameter of 7 mm.	Figure-of-8 cable (offset metallic or dielectric suspension member) Dielectric circular section cables



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## Training

### Technological change raises the fundamental question of training

The landscape and the future of optical fibre change a little more every day. Optical fibre has now become the key technology. New networks and the modernisation of data exchange mean that the technician's role is becoming ever more crucial, thus requiring increased specialisation



### A site at the leading edge of new technology

ACOME has opened a certified Training department at Mortain which is equipped with high-performance apparatus (O.T.D.R. splicer) and manned by a team of specialist instructors who have devised a training scheme that meets the growing need for developing skills within the field of optical fibre cables.

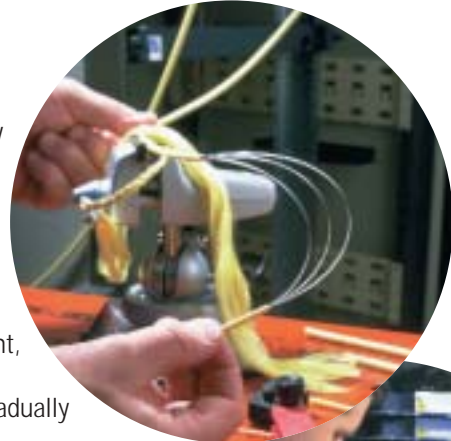


This training course is aimed at all those working in the industry (experienced and trainee installers, design engineers, etc.) who are aware of the need to update or perfect their skills

### A training project

This course generally takes as its reference the known network environment, before looking at developments in the short and the longer term. In this way it allows the knowledge of copper cable technology to be gradually applied to that of optical fibre.

This project guarantees that each participant is able to make real progress, through the use of training modules that are tailored to each individual's level of knowledge, thus giving them the means to make significant progress and to acquire the relevant theoretical and practical knowledge.



### Production of cables to customised technical specifications

An R&D team composed of 3 groups

- Materials
  - Products / Processes
  - Systems and implementation

Product line dedicated to the production of optical fibre cables at the heart of the production facility.

- Marketing
- Design
- Industrialization

Development of new products with an optimum cost/functionality ratio

### Technical support

With its expertise in optical fibre and cable manufacturing processes, ACOME can provide technical support on matters concerning the implementation of its optical fibre cables.

### Logistics

ACOME has at its disposal a 43000 m<sup>2</sup> logistical platform (including 8000 m<sup>2</sup> of covered storage) in which to package your orders for delivery throughout Europe.

This represents a commitment to greater efficiency, flexibility and punctuality, based on:

- an adaptable sales department
- an administrative team overseeing sales, logistics and order preparation
- competent technical support

Our IT department can work together with your own computer specialists to develop the EDI or e-business data exchange protocols for automating the command sequence.

We have a stock of over 3500 product references at your disposal.

70 lorries per day throughout Europe

### Specification advice

- Assistance with drafting specifications
- Knowledge of latest standards requirements, ACOME sits on standards committees such as CENELEC and IEC
- Training courses in methods of connection  
The complete range of ACOME optical fibre training courses allows you to get best use out of our cables in their particular environment, and to learn how to use the specially developed installation tools...

### Assistance to owners

ACOME and its subsidiary ACOSYS are able to assist you to see your projects through to a successful conclusion.

### Maintenance assistance

ACOSYS and ACOME can also play a role in your maintenance operations.



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## ACOSYS



### The optical network specialist

#### Optical fibre cable connections

- Cables from 2 to 432-fibres
- A large fiber optic range : OM1, OM2, OM3, G652, G655
- Different cable structures: LOOSE TUBE / COMPACT TUBE / CENTRAL LOOSE TUBE / JUMPERS
- In all types of environment: road, rail, ducts, tunnels, sewers (LAN, MAN, WAN)
- Intervention in extreme climatic conditions
- Specialised in connections, fusion splicing, mid span access, adds, upgrading, cable transfers...

#### Acceptance of cables

- HR/HD O.T.D.R, loss measurement
- For all links
- On all types of connector

#### Cabling systems

- Pre-wired racks, drawers and units
- Jumpers, pigtaills
- Optical connectors and bulkhead adaptors
- Reel- or drum-mounted trunk (preconnectorised) cables
- Sealed splice protection units
- Design of customised solutions

#### Design department

- Preliminary design, detailed design, drawings produced using AUTOCAD 2000 with integration of digital photographs
- Backscatter curve analysis using Wincable and TOOL KIT 2+ software
- Drawing of "as built" and acceptance documents
- Drafting of wiring procedures
- Network engineering

#### Optical network maintenance

- Intervention 24 hours a day, 7 days a week
- Late completion penalties

#### Organisation

- Quality system: QIP, organisational procedures, wiring instructions
- Organisation by project managed by experienced site managers.

#### Resources

- 3 agencies: Paris, Nantes, Lyon
- 9 fusion splicers
- 7 splicing vans, 4 service cars
- Safety and signalling equipment, etc.

#### Customers/references

- FRANCE TELECOM, TELECOM DEVELOPPEMENT
- COLT, COMPLETEL, LD COM, ONATEL, TUNISIE TELECOM, etc.
- IOC Headquarters, ASCOMETAL AND UNIROYAL Plants
- DCTEI, Caen Town Hall, SNCF, RATP