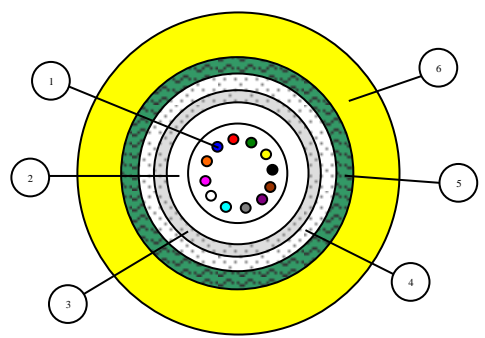


CABLE DESCRIPTION – APPLICATIONS

Central loose tube, outdoor, corrugated steel tape armoured FO cable suitable for drawing or air-blown installation in plastic cable ducts, lying on open or protected trenches or even for direct buried installation in the ground. It is protected against longitudinal moisture penetration through dry, swellable elements. The corrugated steel tape offers the most efficient and flexible protection against rodents.

CABLE DESIGN



Note: drawing is not to scale

1. **Optical fiber:** Coloured glass fiber.
2. **Loose tube:** PBT tube, filled with jelly compound.
3. **Reinforcing elements:** Glass yarns with water blocking coating.
4. **Wrapping:** Water blocking tape, longitudinally applied with overlap.
5. **Armouring:** Corrugated steel tape, longitudinally applied with overlap.
6. **Outer jacket:** Yellow, PE compound.

No. of fibers	4	12
No. of loose tubes	1	1
No. of fibers / tube	4	12
Steel tape thickness (PE-Steel-PE) (nom.) (mm)	0.05 – 0.155 – 0.05	0.05 – 0.155 – 0.05
Outer sheath thickness (nominal) (mm)	1.5	1.5
Cable overall diameter (nominal) (mm)	9.5	9.5
Cable weight (nominal) (kg/km)	95	95

STANDARDS
IEC 60794-1, IEC 60794-3

CABLE MECHANICAL & ENVIRONMENTAL CHARACTERISTICS

Parameter	Tested according	Specified value	Acceptance criteria
Tensile strength (short term – installation)	IEC 60794-1-21E1	1500 N	$\Delta\alpha$ reversible, fiber strain < 0.33 %
Crush resistance (short term)	IEC 60794-1-21E3	2000 N/10cm	$\Delta\alpha$ reversible, no damage
Impact resistance	IEC 60794-1-21E4	10 N. m, 3 impacts spaced, R= 30 mm	$\Delta\alpha$ reversible, no damage
Torsion	IEC 60794-1-21E7	$\pm 180^\circ$, 5 cycles, 50 N	$\Delta\alpha$ reversible, no damage
Bending (static)	IEC 60794-1-21E11	R= 15 x D, 5 turns, 3 cycles	$\Delta\alpha$ reversible, no damage
Repeated bending (dynamic)	IEC 60794-1-21E6	R= 20 x D, 50 N, 30 cycles	$\Delta\alpha$ reversible, no damage
Temperature cycling	IEC 60794-1-22F1	-30°C to +70°C	$\Delta\alpha < 0.05$ dB/km
Water tightness	IEC 60794-1-22F5b	3 m cable, 1 m water column, 24 h	no water detected with UV light

IDENTIFICATION COLOUR CODING

Fiber colours per tube

1	2	3	4	5	6	7	8	9	10	11	12
red	green	blue	yellow	white	grey	brown	purple	cyan	black	orange	pink

Note: Other fiber and / or tube colour coding can be provided if requested.



SHEATH MARKING

The following information is printed (ink injection method) in contrasting colour, on outer jacket, every one (1) meter:

“HELLENIC CABLES – 2025 – A-DQ(ZN)(SR)2Y 12 E9/125 G652D – length marking m”

Other or additional data can be printed on outer jacket if requested.

PACKING

The cables are delivered in non-returnable wooden drums suitable for safe transportation, storage and installation. Both cable ends are accessible for testing and tightly covered with shrink-down end caps to prevent ingress of moisture. Cable type, customer, drum no, cable length, net and gross weight are tagged on drum flanges.

Cable length per drum: 4000m ± 5%. (maximum cable length per drum for steel tape armoured cables: 4200m).

Any particular requirements about packing, drum marking, cable length per drum can be provided if requested.

QUALITY CONTROL

All cables are quality tested in every stage of manufacturing procedure (raw materials receive, fiber colouring, fiber buffering, stranding, final cable, packing) to ensure a product of the highest quality level.

Detailed routine test reports (OTDR - attenuation in dB/km) will be delivered for all fibers, for all drums ordered.

BASIC CHARACTERISTICS OF OPTICAL FIBERS

SINGLE-MODE OPTICAL FIBERS 9/125 ITU-T G.652D

Parameter	Values
Cladding diameter	125.0 ± 0.7 μm
Coating diameter (non-colored)	245 ± 7 μm
Core concentricity error	≤ 0.6 μm
Cladding non-circularity	≤ 1 %
Coating-Cladding concentricity error	≤ 12 μm
Mode field diameter at 1310 nm	9.2 ± 0.4 μm
Mode field diameter at 1550 nm	10.4 ± 0.5 μm
Attenuation coefficient at 1310 nm	≤ 0.36* dB/km
Attenuation coefficient at 1383 nm	≤ 0.35* dB/km
Attenuation coefficient at 1550 nm	≤ 0.23* dB/km
Attenuation coefficient at 1625 nm	≤ 0.25* dB/km
Attenuation discontinuity at 1310nm & 1550 nm	≤ 0.05 dB
Cable cut-off wavelength λ _{cc}	λ _{cc} ≤ 1260 nm
Chromatic dispersion coefficient at 1285-1330 nm	≤ 3.5 ps/(nm·km)
Chromatic dispersion coefficient at 1550 nm	≤ 18 ps/(nm·km)
Chromatic dispersion coefficient at 1625nm	≤ 22 ps/(nm·km)
Zero-dispersion wavelength λ _o	1300 < λ _o < 1324 nm
Zero-dispersion slope S _o	≤ 0.092 ps/(nm ² ·km)
PMD max.	≤ 0.1 ps/√km
Proof test	≥ 1% (100 kpsi or 0.7 GPa)
*:cabled values	