



Cable structure

Optical core

- [1] Optical fibres
- [2] Stainless Steel Tube. $\varnothing = 3.5$ mm

Aluminium Tube

- [3] $\varnothing = 6$ mm

Armour

Layer 1 (Z):

- [4] 6 ACS 20.3% IACS $\varnothing 3.02$ mm
- [5] 3 AA $\varnothing 3.02$ mm

In areas where there is a high contamination or in the proximity of the sea, Prysmian recommend greasing the cable.

Features and benefits

This cable has been custom designed to best match with customer requirements from optical, electrical, mechanical, quality and cost point of view, optimising diameter, weight, breaking load and short circuit capacity.

Cable characteristics

Mechanical and physical

Approximate cable diameter:	12.0 mm
Approximate cable weight:	419 kg/km
Rated tensile strength (IEEE 1138):	59.6 kN
Maximum recommended load:	23.8 kN
Elasticity Modulus*:	107.2 kN/mm ²
Section*:	83.1 mm ²
Linear expansion thermal coefficient:	15.4x10 ⁻⁶ °C ⁻¹
Minimum bending radius**:	

On pulley blocks (first and last of each reel, span ≥ 600 m or angles $> 15^\circ$):

400 mm

On pulley blocks (others):

300 mm

On tensioner devices:

500 mm

After clamping (slack cable):

300 mm

Operating temperature range: from -30°C to +70°C

*for stress-strain calculus

**see "Installation procedures for OPGW fibre optic cable" document reference SIG-07-PE-PA-013

Electrical

Electrical resistance (20°C):	0.58 Ω /km
Short circuit rating from 40°C:	46.0 kA ² s
Short circuit current for 1 s:	6.8 kA

Fiber identification

No.	1	2	3	4	5	6
Color	Blue	Orange	Green	Brown	Slate	White
No.	7	8	9	10	11	12
Color	Red	Black	Yellow	Violet	Pink	Aqua

*Designs with more than 12 fibers per tube will use the standard color code and rings for identification of the fibers using natural color instead of black color.

Fibre characteristics

According to ITU-T G.652B, ITU-T G.652D, ITU-T G.655 or ITU-T G.656

ITU-T G.652B

Attenuation coefficients	
at 1310 nm (typical/maximum):	$\leq 0.34/0.36$ dB/km
at 1385 nm (Water peak):	≤ 1.0 dB/km
at 1550 nm (typical/maximum)	$\leq 0.20/0.22$ dB/km
at 1625 nm (typical/maximum)	$\leq 0.23/0.25$ dB/km
Mode Field Diameter	
at 1310 nm	9.2 ± 0.4 μ m
Dispersion coefficients	
from 1285 to 1330 nm	≤ 3.5 ps/(nm·km)
at 1550 nm	≤ 18 ps/(nm·km)
Polarisation Mode Dispersion	≤ 0.1 ps/ \sqrt km

ITU-T G.652D

Attenuation coefficients	
at 1310 nm (typical/maximum)	$\leq 0.35/0.37$ dB/km
at 1385 nm (typical/maximum)	$\leq 0.35/0.37$ dB/km
at 1550 nm (typical/maximum)	$\leq 0.20/0.22$ dB/km
at 1625 nm (typical/maximum)	$\leq 0.23/0.25$ dB/km
Mode Field Diameter	
at 1310 nm	9.2 ± 0.4 μ m
Dispersion coefficients	
from 1285 to 1330 nm	≤ 3.5 ps/(nm·km)
at 1550 nm	≤ 18 ps/(nm·km)
Polarisation Mode Dispersion	≤ 0.1 ps/ \sqrt km

ITU-T G.655

Attenuation coefficients	
at 1550 nm (typical/maximum)	$\leq 0.23/0.25$ dB/km
at 1625 nm (typical/maximum)	$\leq 0.25/0.27$ dB/km
Mode Field Diameter	
at 1550 nm	9.6 ± 0.4 μ m
Dispersion coefficients	
from 1530 to 1565 nm	$2.0 \div 6.0$ ps/(nm·km)
In the range 1565-1625 nm	$4.5 \div 11.2$ ps/(nm·km)
Polarisation Mode Dispersion	≤ 0.1 ps/ \sqrt km

ITU-T G.656

Attenuation coefficients	
at 1383 nm	≤ 0.4 dB/km
at 1550 nm	≤ 0.25 dB/km
at 1625 nm	≤ 0.28 dB/km
Mode Field Diameter	
at 1550 nm	9.2 ± 0.5 μ m
Dispersion coefficients	
at 1550 nm (typ.)	0.052 ps/(nm ² ·km)
Polarisation Mode Dispersion	≤ 0.2 ps/ \sqrt km

Routine tests

100% of optical fibres will be measured by OTDR technique before leaving factory.

Installation procedure

Prysmian recommends to install the cable described in this specification following the latest version of our "Installation procedures for OPGW fibre optic cable" reference SIG-07-PE-PA-013, "Instruction for the installation of the EWMJ joint box" reference SIG-07-PE-PA-015 and "Instruction for the installation of the EWJ joint box" reference SIG-07-PE-PA-008.

Reels

	Type X	Type N
Wheel (A):	1300 mm	1700 mm
Cylinder (B):	800 mm	900 mm
Inside (C):	930 mm	900 mm
Outside (D):	1050 mm	1050 mm
Axe (H):	105 mm	105 mm
Weight:		
- empty:	205 kg	274 kg
- full:	1881 kg	3291 kg
Maximum length:	4 km	7.2 km
Tolerance length of the produced reel: $\pm 3\%$		

NOTE:

Ordered lengths should include a distribution of lengths, i.e., all reels cannot be ordered at the maximum.

The reel lengths' distribution should be as follows:

Reel lengths	
0 - 2500	More than 10%
2500 - 4500	More than 30%
4500 - 6000	Less than 55%
> 6000	Less than 5%

