AKSH OPTIFIBRE LIMITED

Bringing fibre at your doorstep

Specification For SM Optical Fibre (G.652D) Low Water Peak

ISSUED: May 01, 2010
REVISION: 02

AKSH OPTIFIBRE

Description

This Specification covers an uncoloured Single Mode Fibre used in the wavelength range from 1260 nm to 1625 nm, which complies with the latest ITU-T recommendation G.652D.

Aksh optical fibres are made of synthesized silica with a coating of 245 µm mechanically strippable UV cured acrylate.

Product name: SM Optical Fibre (G.652D)

Product code: AKSH LWP SM Fibre

Specification

Attenuation Coefficient:

At 1310 nm	≤ 0.34 dB/km
At 1550 nm	≤ 0.21 dB/km
At 1285-1330 nm	≤ 0.37 dB/km
Between 1525-1625 nm	≤ 0.24 dB/km
Between 1360-1480 nm	≤ 0.34 dB/km
Attenuation discontinuities at 1310/1550nm	≤ 0.05 dB
At 1383 nm (After Hydrogen Aging Test)	≤ 0.32 dB/km

Cutoff wavelength 1170-1310 nm

Mode field diameter 9.30 ± 0.5 µm at 1310 nm

Chromatic Dispersion

At 1270-1340 nm	≤ 5.3 ps/nm.km
At 1285-1330 nm	≤ 3.5 ps/nm.km
At 1550 nm	≤ 17.0 ps/nm.km
At 1625 nm	≤ 22.0 ps/nm.km
Zero dispersion wavelength	1300-1324 nm
Zero dispersion slope	≤ 0.092 ps/nm^2.km

Polarization Mode Dispersion ≤ 0.20 ps/√km

Geometries

Cladding Diameter	125 ± 1.0 µm
Core Clad Concentricity Error	≤ 0.6 µm
Cladding Non-Circularity	≤ 1.0 %
Coating Diameter	245 ± 7 µm
Coating-Cladding Concentricity Error	≤ 10 µm
Fibre Curl	≥ 4 m radius of curvature

Mechanical Characteristics

Proof Test	> 0.7 Gpa
Strip ability force to remove secondary coating of fibre	≥ 1.3 N and ≤ 5.0 N
Dynamic Tensile Strength	
Unaged	> 550 Kpsi (3.8 Gpa)
Aged (Aged at 85^{0}C, 95 % RH for 30 days)	> 440 Kpsi (3.0 Gpa)
Dynamic Fatigue Parameter	≥ 20
Static Fatigue Parameter	≥ 20

Macro Bending Loss

The induced attenuation due to 1 turn of fiber wrapped around a mandrel of 32 mm diameter shall be less than 0.5 dB at 1550 nm & 1.0 dB at 1625 nm

The induced attenuation due to 100 turns of fiber wrapped around a mandrel of 60 mm diameter shall be less than 0.05 dB at 1550 nm & 0.1 dB at 1625 nm

Environmental Characteristics

Temperature Dependence of Attenuation Induced attenuation at -60^{0}C to +85^{0}C	≤ 0.05 dB/km at 1310/1550nm
Temperature Humidity Cycling Induced attenuation at -10^{0}C to +85^{0}C, 95% RH	≤ 0.05 dB/km at 1310/1550nm
Water Immersion Induced attenuation due to water immersion at 23 ± 2^{0}C	≤ 0.05 dB/km at 1310/1550nm
Heat Aging Induced attenuation due to heat aging at +85 ± 2^{0}C	≤ 0.05 dB/km at 1310/1550nm

Material Properties

Fibre Glass	
Refractive index profile	Core: Refer to Fig. 1
	Cladding: Matched cladding
Glass Composition	Core: Germania (GeO_2) doped Silica (SiO_2)
	Cladding: Silica (SiO_2)
Primary Coating	2 layers of UV curable resin

Shipping Information

Reel Dimension — AKSH provides the fibre with following type of reel.

Max. fibre length: 25.2 km

Flange Diameter:	234.95 mm
Traverse Width:	95 mm
Bore Diameter:	25.45 mm
Barrel Diameter:	152.4 mm

Reel Length: The reel length is in multiple of 2.1 km with the length distribution as follows

Length distribution (Km.)

25.2	≥ 80 %
12.6 & above	≤ 20 %

The actual length of each reel shall be more than or equal to contract length.

Reel Identification: Bar Coded label with ID number, attenuation at 1310 nm and 1550 nm, AKSH product code and fibre Length shall be attached on each reel.

Test Report

Test report for each shipment shall be submitted to the customer in the form of data sheet. Test report shall consist of product name, AKSH product code, ID number and the following measured values.

1. Length
2. Attenuation at 1310 nm, 1383 nm, 1550 nm and 1625 nm
3. Cladding Diameter
4. Core concentricity error
5. Cladding non circularity
6. Coating Diameter
7. Chromatic Dispersion at 1270-1340 nm
8. Chromatic Dispersion at 1285-1330 nm
9. Chromatic Dispersion at 1550 nm
10. Zero Dispersion wavelength
11. Zero dispersion slope
12. Cutoff wavelength
13. Mode field diameter
14. Fibre Curl
15. PMD at 1310 and 1550 nm

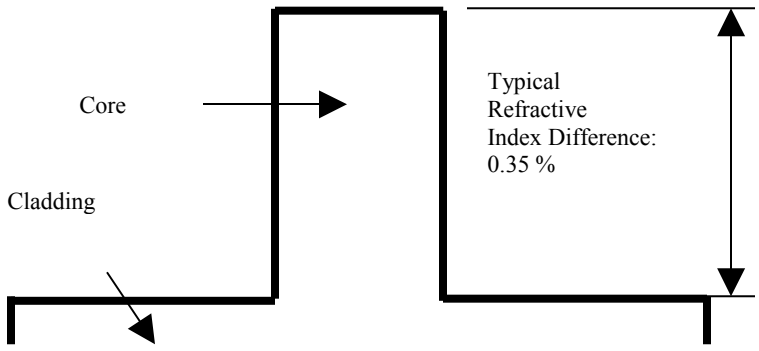

Fig. 1: Typical Index Profile of Low Water Peak Single Mode Fibre