



G.652.B

# PureAdvance™-80

Pure Silica Core Single Mode Optical Fiber



- Low attenuation of  $\leq 0.17$  dB/km and MFD compatible with standard G.652 SMFs
- For terrestrial metro and long-haul networks
- Applicable for high-density terrestrial cables

## PureAdvance™-80 (G.652.B)

### General

#### Effective Area

Typical effective area at 1550 nm      85  $\mu\text{m}^2$

#### Attenuation

Typical attenuation at 1550 nm      0.165 dB/km

#### Core Glass

Pure Silica

### Optical Characteristics

#### Attenuation

Attenuation at 1310 nm       $\leq 0.31$  dB/km  
 Attenuation at 1550 nm       $\leq 0.17$  dB/km  
 Attenuation at 1625 nm       $\leq 0.20$  dB/km  
 Point discontinuity at 1550 nm       $\leq 0.05$  dB

#### Mode Field Diameter (MFD)

MFD at 1310 nm       $9.0 \pm 0.5$   $\mu\text{m}$   
 MFD at 1550 nm       $10.1 \pm 0.7$   $\mu\text{m}$

#### Chromatic Dispersion

Zero dispersion wavelength      1300-1324 nm  
 Zero dispersion slope       $\leq 0.092$  ps/nm<sup>2</sup>/km  
 Chromatic dispersion at 1550 nm       $\leq 18.0$  ps/nm/km  
 Chromatic dispersion at 1625 nm       $\leq 22.0$  ps/nm/km

#### Cable Cutoff Wavelength ( $\lambda_{cc}$ )

$\lambda_{cc}$        $\leq 1260$  nm

#### Polarization Mode Dispersion (PMD)

Individual fiber PMD\*<sup>1)</sup>       $\leq 0.1$  ps/r-km  
 Fiber PMD link design value\*<sup>2)</sup>       $\leq 0.06$  ps/r-km

### Geometrical Characteristics

#### Glass Geometry

Core-cladding concentricity error       $\leq 0.6$   $\mu\text{m}$   
 Cladding diameter       $125.0 \pm 1.0$   $\mu\text{m}$   
 Cladding non-circularity       $\leq 1.0$  %  
 Fiber curl radius       $\geq 4$  m

#### Coating Geometry

Coating diameter (Natural)       $245 \pm 10$   $\mu\text{m}$   
 Coating diameter (Colored)       $250 \pm 15$   $\mu\text{m}$   
 Coating-cladding concentricity error       $\leq 12$   $\mu\text{m}$

### Mechanical Characteristics

#### Proof Test

Proof stress level      1.2% (0.86GPa)

#### Macrobending Loss

Bending radius	Number of turns	Wavelength	Induced Attenuation
30 mm	100	1550 nm	$\leq 0.1$ dB
30 mm	100	1625 nm	$\leq 0.1$ dB

#### Dynamic Fatigue (Nd)

Nd      20

### Environmental Tests

Condition	Induced Attenuation Change at 1550 nm and 1625 nm
-60 to +85°C temperature cycling (IEC60793-1-52)	$\leq 0.05$ dB/km
-10 to +85°C/98%RH temperature humidity cycling	$\leq 0.05$ dB/km
+23°C water immersion (IEC60793-1-53)	$\leq 0.05$ dB/km
+85°C heat aging (IEC60793-1-51)	$\leq 0.05$ dB/km
+85°C/85%RH damp heat (IEC60793-1-50)	$\leq 0.05$ dB/km

### Packaging

#### Delivery Length

6.3 – 50.4 km

### Performance Characteristics

#### Effective Group Index of Refraction

Effective group index of refraction at 1550 nm      1.464

\*1) Measured on fiber with free tension.

\*2) Since PMD value may change when fiber is cabled, actual PMD link design value in a cable shall be confirmed by cable manufacturer. Under appropriate cable design, PureAdvance-80 specification supports network design requirements for a 0.20 ps/r-km of maximum cable PMD link design value recommended by ITU-T G.652.B.

This document states a standard specification.  
 Upon request, alternative value offerings will be available.