

# Corning® SMF-28® Contour Pro Optical Fiber

## Product Information

CORNING



SMF-28® Contour Pro fiber delivers superior bend performance for high density cables and connectivity. This 190 micron diameter fiber has a 9.2 micron mode field diameter for installation compatibility. It is suitable for challenging conditions in hyperscale data centers, in-building networks, and fiber-to-the-home, providing bend-protected connectivity in tight spaces. SMF-28® Contour Pro fiber meets Recommendation ITU-T G.657.A2 and is compatible and fully compliant with Recommendation ITU-T G.652.D.

## Optical Specifications

### Attenuation Options

| Wavelength (nm) | Maximum Value (dB/km) |
|-----------------|-----------------------|
| 1310            | 0.32 - 0.35           |
| 1383*           | 0.32 - 0.35           |
| 1490            | 0.21 - 0.23           |
| 1550            | 0.18 - 0.20           |
| 1625            | 0.20 - 0.22           |

\*Attenuation values at this wavelength represent post-hydrogen aging performance.

### Attenuation vs. Wavelength

| Range (nm)  | Ref. $\lambda$ (nm) | Max. $\alpha$ Difference (dB/km) |
|-------------|---------------------|----------------------------------|
| 1285 – 1330 | 1310                | 0.03                             |
| 1525 – 1575 | 1550                | 0.02                             |

The attenuation in a given wavelength range does not exceed the attenuation of the reference wavelength ( $\lambda$ ) by more than the value  $\alpha$ .

### Macrobend Loss

| Mandrel Radius (mm) | Number of Turns | Wavelength (nm) | Induced Attenuation* (dB) |
|---------------------|-----------------|-----------------|---------------------------|
| 7.5                 | 1               | 1550            | $\leq 0.5$                |
| 7.5                 | 1               | 1625            | $\leq 1.0$                |
| 10                  | 1               | 1550            | $\leq 0.1$                |
| 10                  | 1               | 1625            | $\leq 0.2$                |
| 15                  | 10              | 1550            | $\leq 0.03$               |
| 15                  | 10              | 1625            | $\leq 0.1$                |

\*The induced attenuation due to fiber wrapped around a mandrel of a specified radius.

### Point Discontinuity

| Wavelength (nm) | Point Discontinuity (dB) |
|-----------------|--------------------------|
| 1310            | $\leq 0.05$              |
| 1550            | $\leq 0.05$              |

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

$\lambda_{cc} \leq 1260$  nm

### Mode Field Diameter

| Wavelength (nm) | Mode Field Diameter* ( $\mu$ m) |
|-----------------|---------------------------------|
| 1310            | $9.2 \pm 0.4$                   |
| 1550            | $10.4 \pm 0.5$                  |

\*Alternate selection available upon request, which may affect other specifications.

### Dispersion

| Wavelength (nm) | Dispersion Value [ps/(nm·km)] |
|-----------------|-------------------------------|
| 1550            | $\leq 18.6$                   |
| 1625            | $\leq 23.7$                   |

Zero Dispersion Wavelength ( $\lambda_0$ ):  $1300 \text{ nm} \leq \lambda_0 \leq 1324 \text{ nm}$   
Zero Dispersion Slope ( $S_0$ ):  $\leq 0.092 \text{ ps}/(\text{nm}^2 \cdot \text{km})$

### Polarization Mode Dispersion (PMD)

|                              | Value (ps/√km) |
|------------------------------|----------------|
| PMD Link Design Value        | $\leq 0.20^*$  |
| Maximum Individual Fiber PMD | $\leq 0.43$    |

\*Complies with ITU-T G.650-2 Appendix IV, ( $m = 20$ ,  $Q = 0.01\%$ ), August 2015.

The PMD link design value is a term used to describe the PMD of concatenated lengths of fiber (also known as PMD<sub>0</sub>). This value represents a statistical upper limit for total link PMD. Individual PMD values may change when fiber is cabled.

### ColorPro® Identification Technology

SMF-28® Contour Pro fiber is also available in colored and ringmarked variants, enabled by ColorPro® identification technology. Corning fibers with ColorPro® identification technology deliver better efficiency in cable manufacturing, simplify inventory management, and leverage an enhanced fiber product offering.

### How to Order

Contact your sales representative, or call the Optical Fiber Customer Service Department:  
Ph: 1-607-248-2000 (U.S./Can.)  
+44-1244-525-320 (Europe)  
Email: [cofic@corning.com](mailto:cofic@corning.com)  
Please specify the fiber type, attenuation, and quantity when ordering.



## Dimensional Specifications

### Glass Geometry

|                          |                                  |
|--------------------------|----------------------------------|
| Fiber Curl               | $\geq 4.0$ m radius of curvature |
| Cladding Diameter        | $125.0 \pm 0.7$ $\mu\text{m}$    |
| Core-Clad Concentricity  | $\leq 0.5$ $\mu\text{m}$         |
| Cladding Non-Circularity | $\leq 0.7\%$                     |

### Coating Geometry

|                                |                           |
|--------------------------------|---------------------------|
| Uncolored Coating Diameter     | $188 \pm 5$ $\mu\text{m}$ |
| Coating-Cladding Concentricity | $\leq 10$ $\mu\text{m}$   |

## Environmental Specifications

| Environmental Test           | Test Condition              | Induced Attenuation                   |
|------------------------------|-----------------------------|---------------------------------------|
|                              |                             | 1310 nm, 1550 nm, and 1625 nm (dB/km) |
| Temperature Dependence       | -60°C to +85°C*             | $\leq 0.05$                           |
| Temperature Humidity Cycling | -10°C to +85°C up to 98% RH | $\leq 0.05$                           |
| Water Immersion              | 23°C $\pm$ 2°C              | $\leq 0.05$                           |
| Heat Aging                   | 85°C $\pm$ 2°C              | $\leq 0.05$                           |
| Damp Heat                    | 85°C at 85% RH              | $\leq 0.05$                           |

Operating Temperature Range: -60°C to +85°C

\*Reference temperature = +23°C

## Mechanical Specifications

### Proof Test

The entire fiber length is subjected to a tensile stress  $\geq 100$  kpsi (0.69 GPa). Higher proof test levels are available.

### Length

Fiber lengths available up to 50.4 km/spool.

## Performance Characterizations

Characterized parameters are typical values.

|                                                          |                                                                                                       |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Numerical Aperture                                       | 0.14<br>NA is measured at the one percent power level of a one-dimensional far-field scan at 1310 nm. |
| Effective Group Index of Refraction ( $n_{\text{eff}}$ ) | 1310 nm: 1.4673<br>1550 nm: 1.4680                                                                    |
| Fatigue Resistance Parameter ( $n_d$ )                   | 20                                                                                                    |
| Coating Strip Force                                      | Dry: 0.5 lbs. (2 N)<br>Wet, 14-day room temperature: 0.5 lbs. (2 N)                                   |
| Rayleigh Backscatter Coefficient (for 1 ns Pulse Width)  | 1310 nm: -77 dB<br>1550 nm: -82 dB                                                                    |