



Contour™ fiber

The shape of things to come.

As networks rapidly grow and boundaries for connection expand, Contour fiber will shape them.

Contour optical fiber is **Corning's platform for density**, combining a low outer diameter with improved bend resilience to enable smaller, lighter, more sustainable optical solutions. Ideal for the evolving demands of hyperscale data centers, this high-performance fiber delivers bend-protected connectivity and network efficiency for today and tomorrow.

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CORNING

Contour™ fiber

The shape of things to come.

The ideas that flow over the communication networks of today drive the modern world and connect us all. As the demand for bandwidth and cloud-based services continues to skyrocket, network operators are challenged to deliver increasing capacity and pathways. Optical fiber solutions that maximize use of existing infrastructure and can be installed efficiently with minimal errors are necessary for seamless upgrades. As a fundamental component of signal transport in the network, optical fiber must have a combination of features that enable these efficiencies.

Corning's Contour fiber provides higher density with more capacity to meet the interconnect and network efficiency needs of space-challenged applications like AI and broadband deployments in urban networks. Primarily characterized by its reduced diameter combined with bend resilience, selection options are available for application-specific customization.

Low Outer Diameter	Bend Resilient	Wide Spectrum, with Low Attenuation Options	Mode Field Diameter (MFD) Options
▶ 190 μm OD provides a 40% reduction in cross-sectional area compared to conventional 242 μm fiber ▶ Same 125 μm glass cladding diameter with lower outer coating diameter, enabling cable miniaturization and higher density	▶ Aligns with G.657.A2 at 7.5 mm and 10 mm bend radii, providing bend-protected connectivity in tight spaces ▶ Compliant with ITU-G.652.D and G.657.A1; optional full G.657.A2 compliance at all bend radii	▶ 1310 nm: 0.35 dB/km base, with options down to 0.32 dB/km ▶ 1550 nm: 0.21 dB/km base, with options down to 0.18 dB/km	▶ 9.2 μm MFD base option for drop-in compatibility with majority of legacy fibers ▶ Smaller selection optionally available for extreme density solutions or specific application needs

Fiber Requirements For Efficient Infrastructure Use

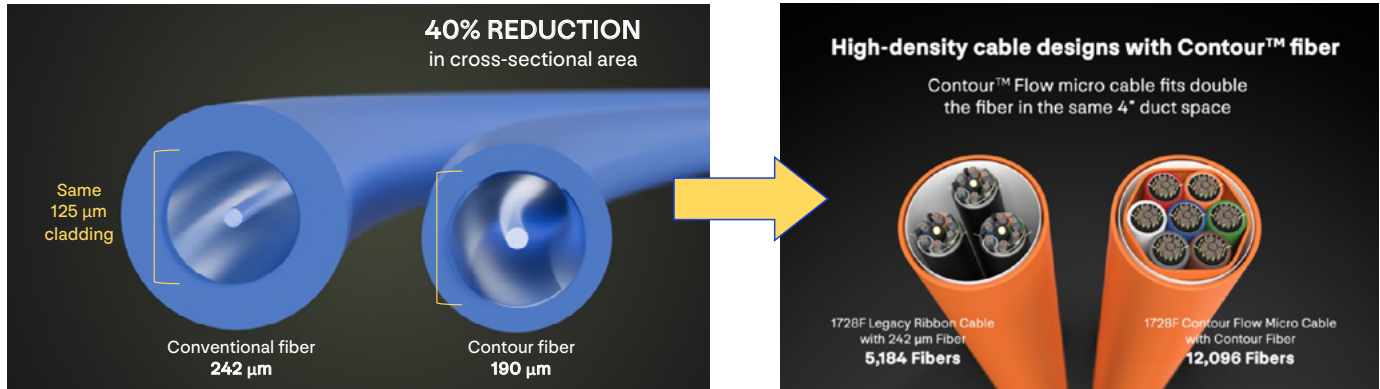
As connections increase within networks, the space available for installation remains the same. Consequently, the ability to increase the fiber density in a cable has value by allowing greater duct space utilization.

Low outer diameter fiber options provide even greater fiber density in cables, which allows more connections in a constrained space and the ability to use low-cost deployment techniques for even greater installation efficiency. Smaller cables are often lighter, enabling high-speed installation techniques, easier handling, lower freight costs, and reduction in environmental impact.

Corning's Contour fiber has a 190 μm outer diameter that provides a 40% cross sectional area reduction when compared to a 242 μm fiber. This reduced diameter combined with improved bend resilience provides opportunities for cable designs that deliver **increased fiber counts for a given duct size** or offer the **same fiber count in a smaller duct**.

*Contour Fiber Miniaturization
Enables Increased Fiber Density
to Optimize Available Space*

Contour™ Fiber Provides A 40% Reduction In Cross-Sectional Area



Contour fiber has the same 125 μm glass cladding diameter with a lower outer coating diameter, enabling cable miniaturization and higher density to optimize available space.

Fiber Requirements for Efficient Operation

Bend in the network will often occur during installation creating expensive remedial work in repair. Signal loss will occur when a fiber is bent to less than a specified minimum bend diameter, known as macrobend. In standard ITU-T G.652.D fiber, this occurs for bends less than 30 mm in radius. Macrobend loss is higher at longer wavelengths of transmission, which are used by many of the advanced network technologies being installed in networks today and under consideration for the future. A bend resilient fiber can increase network efficiency by accommodating varying levels of field craft in installations and tolerance of human error.

Contour fiber meets Recommendation ITU-T G.657.A2 macrobend performance at small bend radii of 7.5 mm and 10 mm, delivering bend-protected connectivity in tight, challenging spaces for installation efficiency. Combining a low outer diameter with improved bend resilience, this high-performance fiber is ideal for high density cable and connectivity designs that are smaller, lighter, and more sustainable.

Contour™ Fiber Is Ideal For High Density Cable Applications



Low-loss fibers will support extended reach and capture more of the potential customer base. This low loss must be across a wide spectrum of transmission to support high bandwidth systems with many wavelengths at high bit rates in the communication channel. A bend resilient fiber will protect this optical performance and avoid link failures resulting from increased loss in the presence of bend within the network.

Low-loss Contour fiber options (0.18 dB/km at 1550 nm) increase link distance by up to 25%*, reducing the number of amplifier sites by 10%. Since each amplifier site costs \$1M or more, this results in significant infrastructure and operational savings.

* When compared to SMF-28e+® fiber with 0.20 dB/km 1550nm spec

Fiber Requirements for Installation

The majority of legacy network fibers have a 9.2 μm mode field diameter (MFD), the region where light is contained within the fiber. Corning's Contour fiber base option offers a 9.2 μm MFD for drop-in compatibility and efficient splicing with these fibers, ensuring agile network upgrades and reliable performance.

Lateral pressure in extreme density cables can induce attenuation loss from microbending. Reducing the MFD can help improve microbend resistance. Subsequently, fibers with a smaller MFD like 8.6 μm are increasingly entering the market as density requirements continue to rise, particularly in hyperscale data centers. Contour fiber is optionally available with a smaller MFD selection for extreme density requirements or for drop-in compatibility to match installed fibers with reduced MFD.



Conclusion

Networks are quickly evolving to support our rapidly changing world. Corning introduced the first low-loss fiber in 1970. Continuing our history of innovations in optical communications, Corning's Contour™ optical fiber delivers on all the features needed to increase network efficiency for today and tomorrow. Combining a low outer diameter with improved bend resilience and low loss and mode field diameter options, this high-performance fiber enables smaller, lighter, more sustainable optical solutions. The future of communication, connection, and progress will be led by Corning, and Contour fiber will shape it.

Key Specifications

ATTRIBUTE	SPECIFICATION
OUTER DIAMETER (uncolored)	188 $\pm$ 5 μm
ATTENUATION OPTIONS	
1310 nm	0.32 – 0.35 dB/km
1383 $\pm$ 3 nm	0.32 – 0.35 dB/km
1550 nm	0.18 – 0.21 dB/km
1625 nm	0.20 – 0.23 dB/km
MACROBEND LOSS	ITU-T G.657.A1 compliance, with G.657.A2 alignment at 7.5 mm & 10 mm bend radii. Full G.657.A2 compliance optionally available.
1 turn x 7.5 mm radius @ 1550 nm	$\leq$ 0.5 dB
1 turn x 7.5 mm radius @ 1625 nm	$\leq$ 1.0 dB
1 turn x 10 mm radius @ 1550 nm	$\leq$ 0.1 dB
1 turn x 10 mm radius @ 1625 nm	$\leq$ 0.2 dB
10 turns x 15 mm radius @ 1550 nm	$\leq$ 0.25 dB
10 turns x 15 mm radius @ 1625 nm	$\leq$ 1.0 dB
MODE FIELD DIAMETER	Alternate selection available upon request, which may affect other specifications.
1310 nm	9.2 $\pm$ 0.4 μm
1550 nm	10.4 $\pm$ 0.5 μm