

Corning Single-mode Fiber Type on Fiber Optic Cable Specification Sheets

Throughout AFL's years of manufacturing fiber optic cables with Corning® fiber, many improvements have been made to the fiber resulting in a change in the fiber identification version. Table A below is quick at-a-glance of the evolution of Corning single-mode (SM) fiber since the SMF-28® inception in 2001. All versions of Corning SM fiber are backward compatible to each other¹. The latest version of Corning SM fiber is SMF-28 Ultra. This fiber has the added benefit of being bend insensitive with a typically lower fiber attenuation along with all the other properties of the previous SMF-28e+® LL fiber.

TABLE A: EVOLUTION OF CORNING SM FIBER²—QUICK GLANCE

CORNING VERSION	RELEASE YEAR	BENEFIT
SMF-28	2001	Initial SMF-28 Version
SMF-28e	2002	Added G.652D Compliance
SMF-28e+	2008	Enhanced bending performance and specific enhancements for FTTx networks
SMF-28e+ LL	2010	Lower fiber attenuation
SMF-28 Ultra	2013	Added G.657.A1 compliance for improved bending performance

AFL has always included the specific Corning fiber version (SMF-28, SMF-28e, SMF-28e+, SMF-28e+ LL) and attenuation on the cable-specific DNO/DNA/DNL specification sheets (example below). To ensure the cable data sheets were correct as Corning introduced each next generation of their single-mode fiber, the data sheet required an official update. Doing so has been an administrative burden for the customer since there was a formal change to the specification sheets or, in some instances, a complete part number change, i.e. a brand new DNO part number. The previous method of reporting the fiber as the specific version can also be confusing. The data sheets in the customer's system may not be up-to-date and may show an older fiber type which is not the fiber version the cable would be manufactured with today.

AFL received feedback from many customers that part number changes can be quite difficult in their internal systems and may require new specification approvals and intricate system updates. To minimize this time-consuming effort, AFL has implemented an updated process for reporting the Corning Single-mode fiber type in our DNO/DNA/DNL specification sheets.



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Specification DNO-8524

AlumaCore Optical Ground Wire



AC-26/57/635
48 Corning® Single-mode

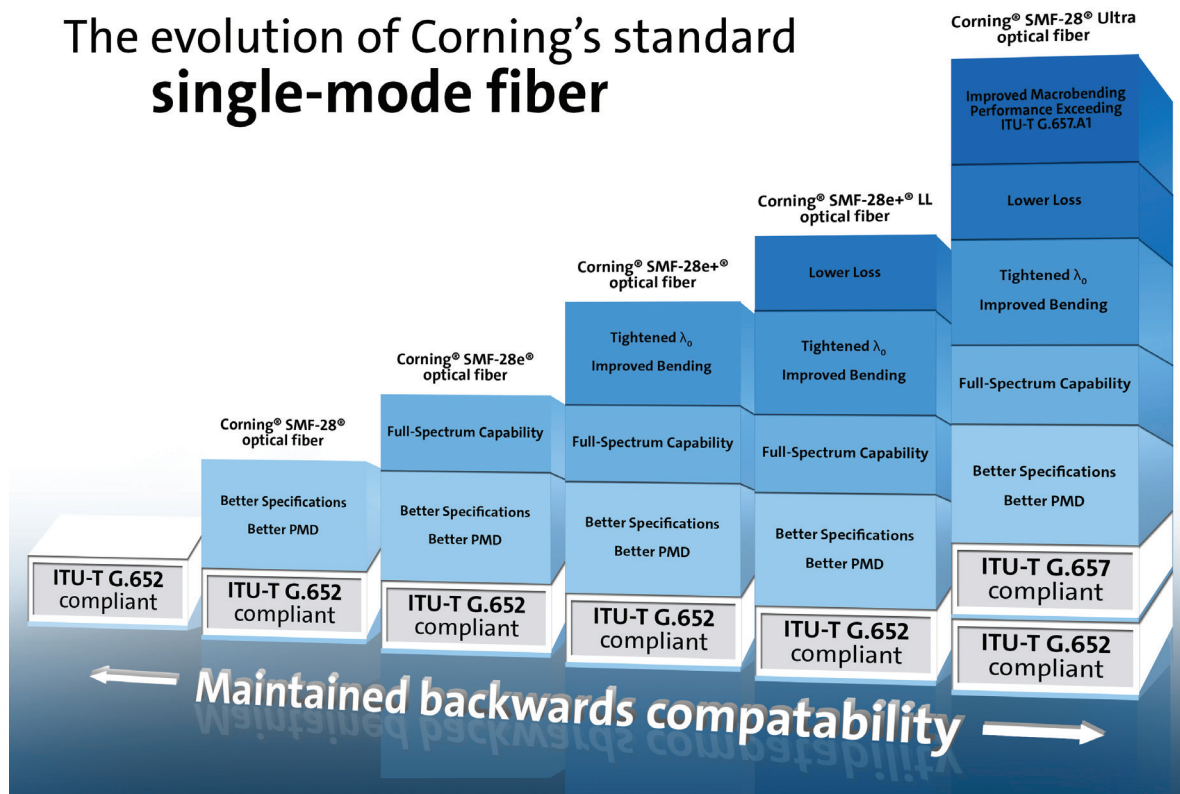
Component Details					
Component	#	OD		Area	
CENTER					
Aluminum Pipe	1	11.00 mm	0.4331 in	56.55 mm ²	0.0877 in ²
LAYER 1 - LEFT HAND LAY					
Aluminum Clad Steel (20.3% IACS)	11	2.56 mm	0.1008 in	56.62 mm ²	0.0878 in ²
Aluminum Alloy 6201	5	2.56 mm	0.1008 in	25.74 mm ²	0.0399 in ²

Standards	
Designed and Manufactured in accordance with the following:	
Cable	IEEE 1138, IEC 60794-4
Fiber	IEC 60793, ITU-T G.65x Series
Color Code	ANSI/EIA 359-A, 598-A, IEC 60304
Aluminum Pipes	ASTM B483
Aluminum Alloy Wires	ASTM B398, IEC 60104A
Aluminum Clad Steel Wires	ASTM B415

AFL began the process of converting cable specifications from version specific Corning single-mode fiber to only “Corning Single-mode.” The fiber type of older cables is updated to “Corning Single-mode” as the specific cables are reviewed. This updated fiber type reporting process allows AFL to manufacture the cable with the latest generation of Corning SM fiber without altering or updating the formal cable specification to the customer. AFL maintains traceability of each cable produced so that, if needed, a specific cable reel can be identified with the exact manufacturing version.

AFL recommends that customers evaluate their fiber optic cable purchasing specifications for type of fiber being requested as well. Many times, these purchasing specifications will still include an outdated version of the Corning fiber. It is recommended to change the wording to state that the most current version of Corning Single-mode fiber is required. This will ensure future alternations are not required with each release of the most current fiber version.

The evolution of Corning’s standard single-mode fiber



By changing how AFL officially reports the Corning fiber type, AFL can manufacture the cable with the newest version without notifying the customer of the change. With the “Corning Single-mode” fiber type on the specification sheet, AFL will automatically switch to the newer, better fiber as a service to its customers to provide the latest generation of Corning fiber on the market.

REFERENCES

1. SMF-28® Ultra Fiber Brochure PB115, September 2014
2. Data from Corning fiber specification (PI) sheets