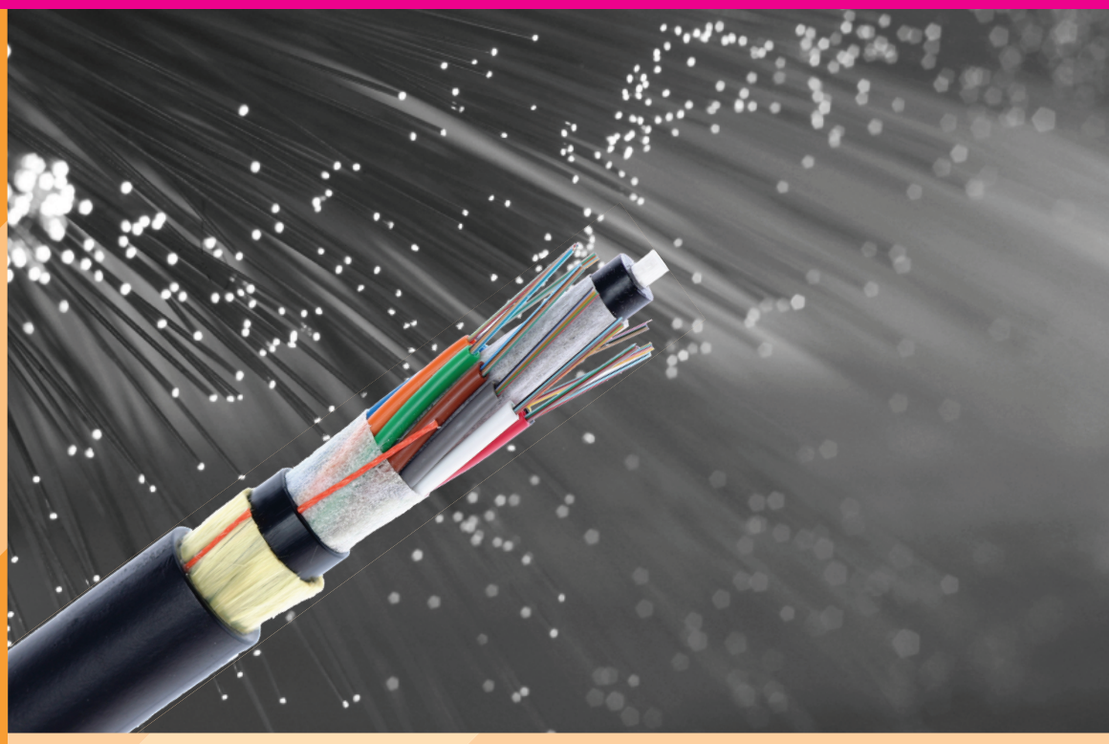
PRYSMIAN
CABLES & SYSTEMS



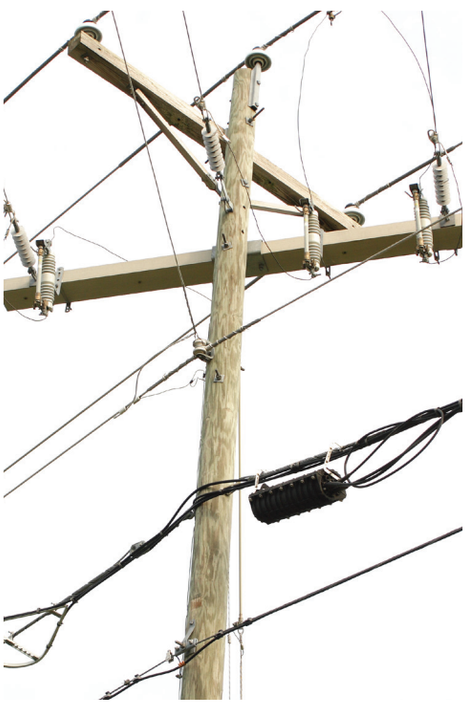
AeroLink™ ADSS Cables

About Us

Prysmian (formerly Pirelli) has been in the cabling business for over 125 years, operating with 53 manufacturing plants and more than 12,000 employees throughout the world.

Prysmian has been producing optical fiber since 1982. We also have a long-term supply agreement with Corning Optical Fiber. This unique combination delivers customer benefits that cannot be matched by our competitors, including security of supply and product diversity.

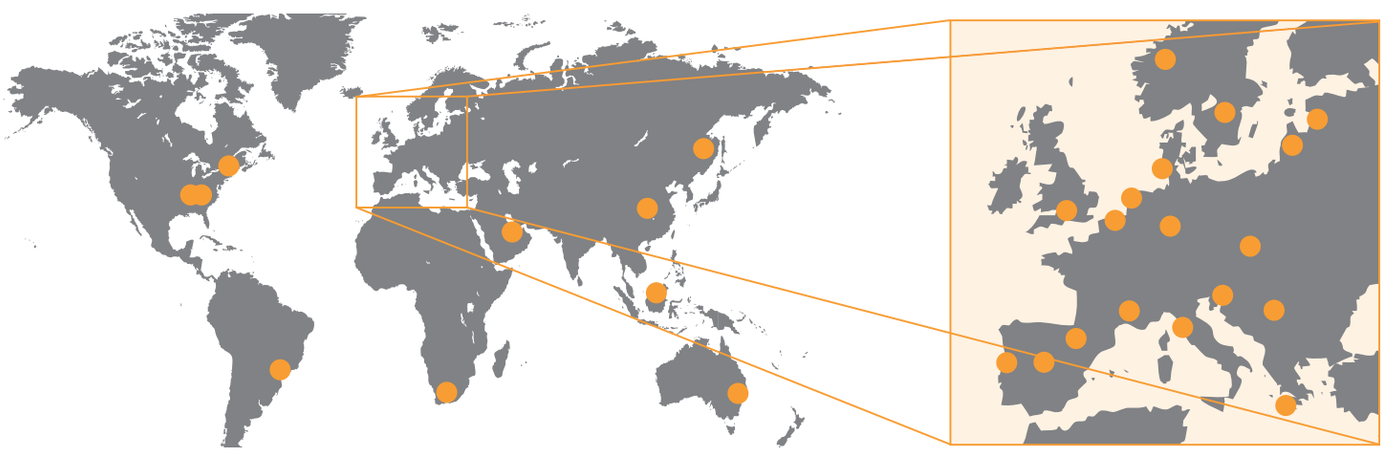
Prysmian is a leading supplier of fiber optic cable throughout the world. Our customers include the major Telcos and CATV operators, in addition to a diverse array of Municipalities, DOTs, and Utilities.



Our Lexington, SC fiber optic cabling plant has been producing optical fiber cabling since 1986. From this plant alone, we have supplied several hundred thousand miles of cable--more than enough to go to the Moon and back. This facility is ISO-9001 and TL-9000 registered, and has been UL-certified for performing 3rd-party testing.

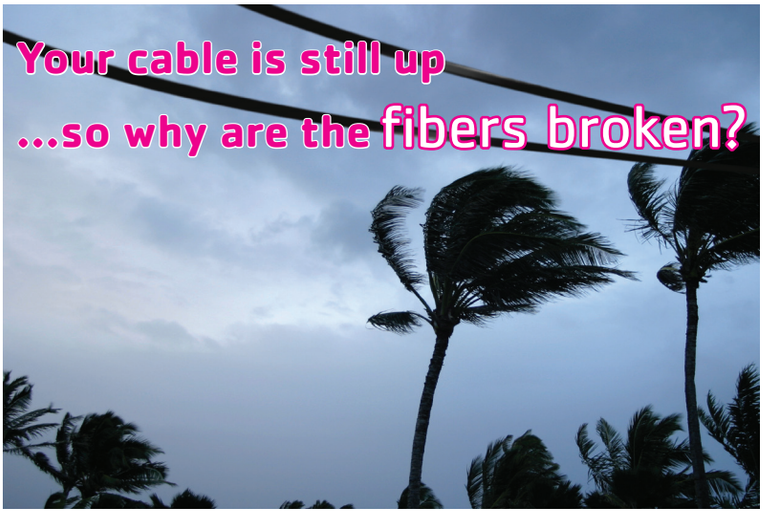
As a leading supplier of Power cabling to the North American market, Prysmian has facilities in the US and Canada. These facilities include our Abbeville, SC plant, where we have recently invested >$40M to build the only Vertical Continuous Vulcanization line in North America. This facility is used to produce insulated High Voltage cables, and is the tallest building in the state of South Carolina (see photo above left).

Because we are a leading supplier of both Power Cable and Optical Cable, Prysmian brings unique expertise to the ADSS marketplace. This expertise, combined with our industry-leading manufacturing efficiencies, can provide you the highest quality and the most cost-competitive solution available. Prysmian is uniquely equipped to provide you with the right fiber, in the right cable, at the right price.



Fiber Reliability

Why Fiber Strain Limits Must Be Specified



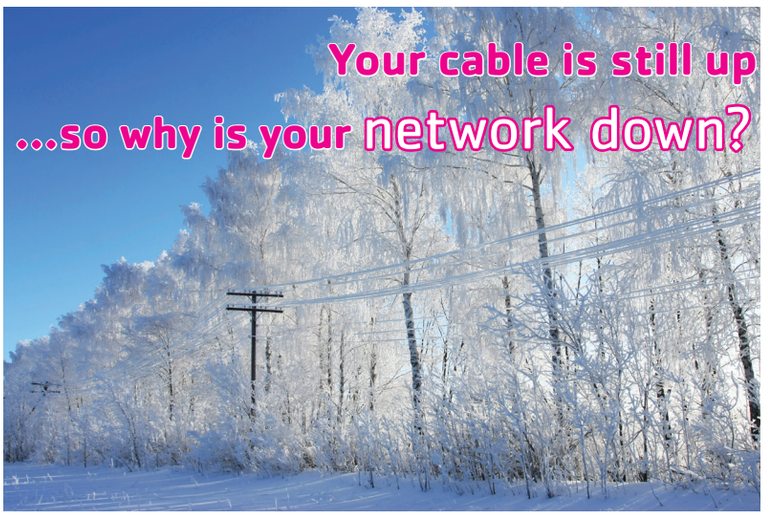
One unusual feature of optical fibers is that they are subject to Static Fatigue. This means that the life expectancy of a fiber varies, depending on how much strain it experiences.

Under moderate strain, fibers don't break right away. But, all fibers contain tiny flaws. When strain levels are too high, these flaws grow bigger. As they grow, the fiber is weakened. If the flaws grow too big, the fiber will break.

The practical implication of Static Fatigue is that the magnitude and duration of fiber strains must be limited. The following table shows some examples:

Fiber Strain	Max Safe Duration
0.50%	1 second
0.33%	4 hours
0.29%	40 days
0.20%	40+ years

Figures based on Corning Optical Fiber White Paper WP5053, and test data for 100kpsi proof-tested fiber.



As you can see, excessive strains rapidly weaken optical fibers. But, fibers do not have to be strain-free to be reliable. In fact, strains up to 0.20% can be continuously applied to a fiber, without shortening its life-expectancy.

In order to ensure fiber reliability and optical performance, ADSS cables must limit fiber strain. This is accomplished by adding aramid yarns to increase tensile strength. Because aramid is so expensive, the cost of an ADSS cable can be significantly reduced by using less aramid yarn. But, these "cost savings" will come at the expense of increased fiber strain. So, a careful balance must be struck between cable cost and fiber reliability.

It's important to specify Fiber Strain limits when purchasing ADSS cables. Fiber Strain limits are essential to ensuring network reliability and for making meaningful price comparisons between cables.

If you don't specify fiber strain, your network is at risk

PRYSMIAN CABLES & SYSTEMS

Fiber Strain

Choosing the right specification for your application

As you have seen, Fiber Strain usually must be limited to 0.20% or less in order to avoid fiber breaks. This same limit has also been included in the new (draft) version of the IEEE-1222 Standard for ADSS cables. Once published, this limit will apply to any application for which IEEE-1222 compliance is required.

It is also important to note that fiber strain can cause changes in optical attenuation. This means that strains too small to cause fiber breaks can still increase optical losses in your network.

All of this might seem complicated. But, the right fiber for your needs can easily be identified by answering just a few questions:

- Is it OK to have temporary attenuation changes caused by load events (storms, etc)?
- Is it OK to have fiber breaks in otherwise intact cables?
- Is Standards compliance important to you?

Take a look at the following table and see which specification is right for you.

Attenuation during load events?	Fiber Breaks	Compliant with new IEEE-1222	Fiber Strain Limit	Prysmian Description
No	No	Yes	0.0%	ZeroStrain™
Possible	No	Yes	0.2%	SafeStrain™
Likely	Likely	No	None	n/a

Prysmian SafeStrain™ and ZeroStrain™ ADSS Cables

Fiber Reliability at Maximum Load

All of Prysmian's SafeStrain designs limit fiber strain to 0.20% or less, even at MRCL. This protects fiber reliability, no matter how often or how long the cable is under load. And, they comply with the strain limits in the forthcoming revision to the IEEE-1222 standards for ADSS cables.

Industry standards place limits on strain-induced attenuation. But, these limits are based on short test lengths. Although small, these losses accumulate significantly over longer lengths, and can cause temporary network outages. The ZeroStrain concept takes network reliability to an even higher level, by preventing fiber strains that can cause attenuation—even at MRCL.

Zero Fiber Strain at Maximum Load

ADSS cables with high Fiber Strain are cheaper
...but they can cost you your network

AeroLink™ ADSS

All-Dielectric, Self-Supporting cable for Aerial Applications

Features and Benefits

Long-Term Fiber Reliability
- Prysmian SafeStrain™ designs keep fiber strain below the threshold where fiber breaks can occur
- Optional ZeroStrain™ designs completely eliminate fiber strain, even at MRCL

No Glue on Buffer Tubes
- Cable preparation is easier and faster
- Eliminates buffer tube kinks caused during tube separation

All-Dielectric, Self-Supporting Design
- Designed for installation in the supply space of utility poles
- No bonding or grounding required
- Requires no overlashing and can be installed in a single pass
- Suitable for use in field potentials up to 12kV (standard jacket) or 24kV (anti-tracking jacket)

Dry Water-Blocked Core
- Water-Blocking materials are easily removed
- Permits rapid cable preparation and termination

Reverse Oscillated Lay Stranding Method
- Facilitates mid-span access of fibers
- Stranded tubes provide strain isolation of fibers relative to the overall cable structure

Exceptionally High Tensile Strength
- Can be used for other applications requiring added tensile performance, such as long duct pulls

Sheath Markings
- Custom print available
- Optional embedded stripe(s) available for additional cable identification

Additional Options
- Single-Jacket designs permit installations on structures with limited load capabilities and use of less expensive hardware
- Anti-Tracking jacketing compounds for field space potentials up to24kV
- Custom designs available

Performance
- Meets or exceeds Telcordia GR-20, ICEA-640 and IEEE-1222
- Tested in accordance with relevant EIA-455 FOTPs for fiber optic cables

Registered Supplier
- ISO 9001, ISO 14001, and TL 9000

Performance Specifications

Bend Radius	
Dynamic	20 x Cable OD
Static	10 x Cable OD

Crush Resistance	N/cm	lbf/in
Short Term/Long Term	220/110	125/63

Temperature Ratings	°C	°F
Operation	-40 to +70	-40 to +158
Installation	-30 to +60	-22 to +140
Storage/Shipping	-40 to +75	-40 to +167

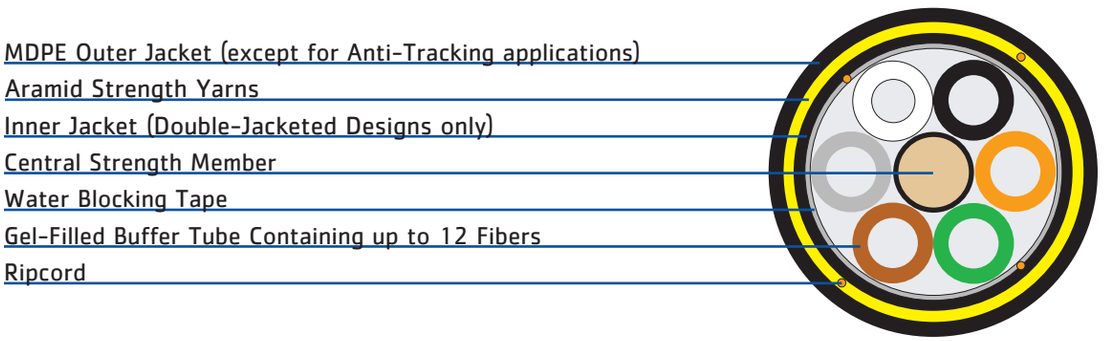
Maximum Space Potential	
Standard Jacket	12kV
Anti-Tracking Jacket	24kV

Nominal Design Parameters

Fiber Count		2-60	62-72	74-96	98-144
Buffer Tube Count		5	6	8	12
Buffer Tube OD	(mm)	2.5	2.5	2.5	2.5
	(inches)	0.10	0.10	0.10	0.10

Note: Please refer to cutsheets for details on Cable OD, Cable Weight, MRCL, MIT and Span Ratings

Cable Construction



Ordering Information

If you would like help selecting an ADSS cable, please contact your local salesperson or Inside Sales:
Phone: (800) 669-0808 Fax: (803) 957-4628 Email: comm.cables@prysmian.com

Select a Marketing Code according to the fiber count you want:

Fiber Count	1	2		3	3	4	
0002-0006	☐	☐	S1LAAE	☐	☐	☐	-xxxx-yyyy
0008-0036	☐	☐	T1LAAE	☐	☐	☐	-xxxx-yyyy
0038-0144	☐	☐	S1LAAE	☐	☐	☐	-xxxx-yyyy

Note:
Standard put-up is 12F/tube. Please refer to the Fiber Code Addendum for additional fiber types.

Then, use the following options to specify your choice of Fiber and Cable Features:

1 Fiber Type
H = G.652.D Single-Mode Low Water Peak
Z = Corning™ SMF-28e+ Fiber

2 Attenuation
B = 0.35/0.25/0.25 dB/km @ 1310/1383/1550 nm
C = 0.40/0.30/0.30 dB/km @ 1310/1383/1550 nm

3 Jacket Design
SJ = Single Jacket
DJ = Double Jacket
DT = Anti-Tracking, Double Jacket

4 Fiber Strain
Z = ZeroStrain™ ADSS (no Fiber Strain at MRCL)
S = SafeStrain™ ADSS (≤0.20% Fiber Strain at MRCL)

Example:
A 36 count AeroLink ZeroStrain™ ADSS cable with a Double Jacket and G.652.D LWP Single-Mode fiber and 0.40/0.30 attenuation is indicated by the Marketing Code 0036HCT1LAAEDJZ.

Select a Cut-Sheet:
A separate cut-sheet is available for each Design Family. Cut-Sheets correspond to the last 7 characters of the Marketing Code. For example, the Double-Jacketed, Zero-Strain Design Family corresponds to all Marketing Codes that end with "LAAEDJZ". This information can be found at the top of the Cut-Sheet. Please contact us if you don't have the Cut-Sheet you need.

Select an individual Design
You can choose an individual design based on span capabilities. Or, you can look up technical specs based on a Part Number you have. Individual designs are identified by a Marketing Code, plus an 8-character Design Code (-xxxx-yyyy).