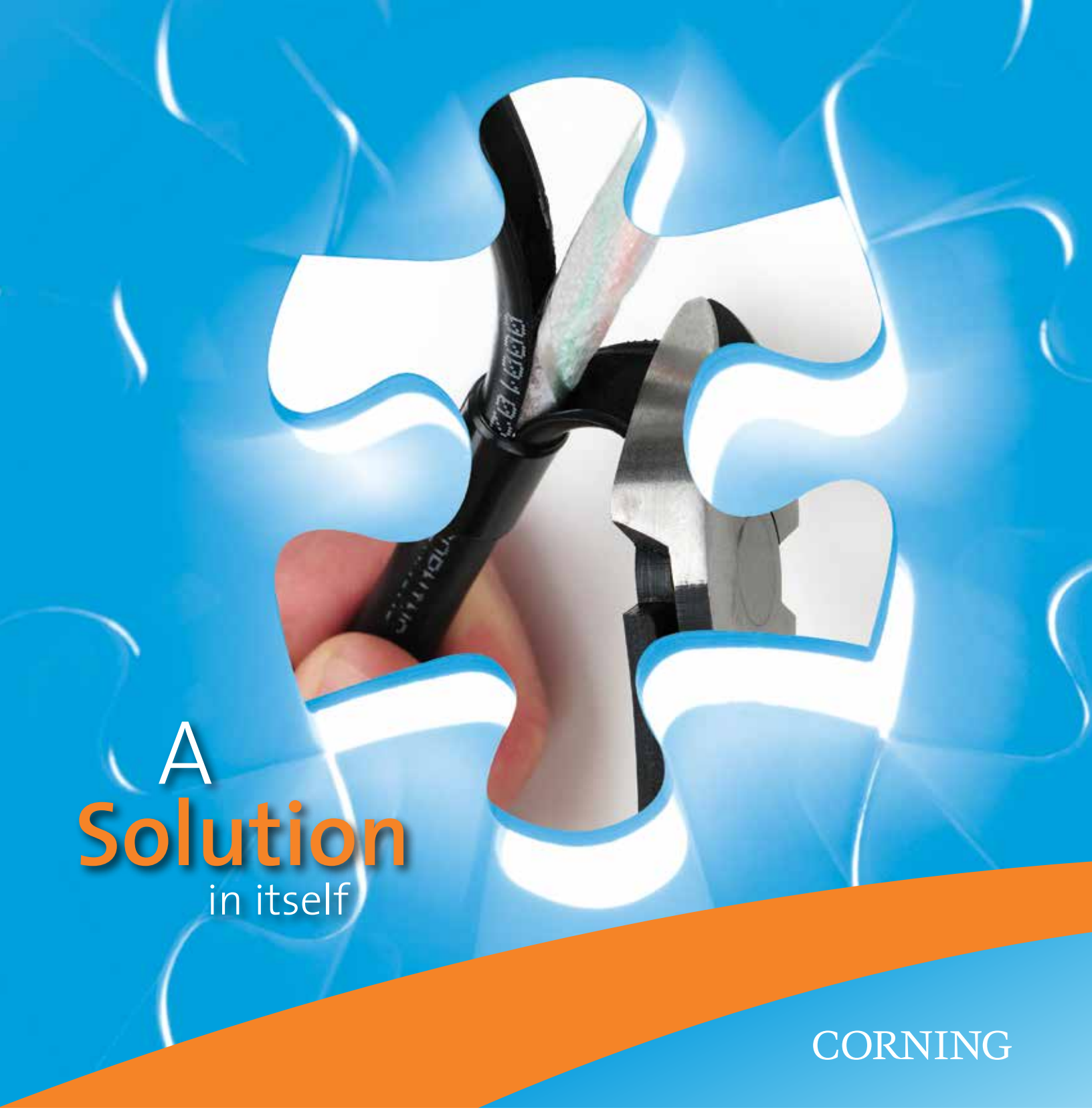


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NETWORKS
SELECTION
GUIDE

Cables

Introduction

This selection guide is intended to

help determine the cable type you need for your specific situation. No two cabling jobs are the same, each bringing its own set of requirements and challenges. Corning Cable Systems makes a wide variety of cables to meet all of your needs. The cable types in this guide are but a few of the hundreds that we make but should meet your needs on the vast majority of your projects.

For a more comprehensive look at our extensive varieties of fiber optic cables, hardware and solutions, visit

catalog.corning.com/cablesystems

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Indoor Cables	8
Indoor/Outdoor Cables	10
Outdoor Cables	12
Select Cable Attributes	14

To learn more, contact Accu-Tech today. www.Accu-Tech.com/vendors/Corning

Basics of Fiber Optic Cabling

Each cable has its place.

Indoor Cable

2-144 Fibers



2-144 Fibers



MIC® Cable
Tight-Buffered Design



Indoor/Outdoor Cable

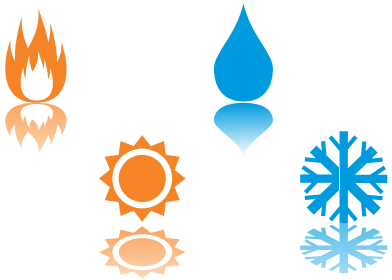
2-288 Fibers



2-24 Fibers



FREEDM® Cable
Loose Tube or
Tight-Buffered Design



Outdoor Cable

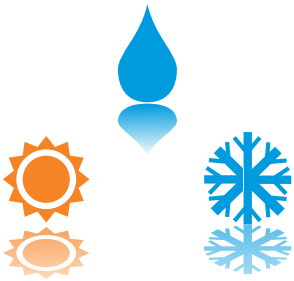
2-288 Fibers



2-288 Fibers



ALTOS® Cable
Loose Tube Design



= Flame-Retardant

= Water-blocked

= UV-Resistant

= Low Temperature

Basics of Fiber Optic Cabling

What does the outer cable jacket tell you?

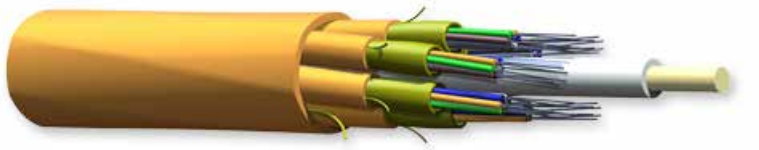
- Foot/meter markings
- Manufacturer
- Manufacturing month and year
-  marking denotes communication cable
- Fiber count and type
- Customer-specific labeling
- Most cables can be custom ordered for different jacket colors



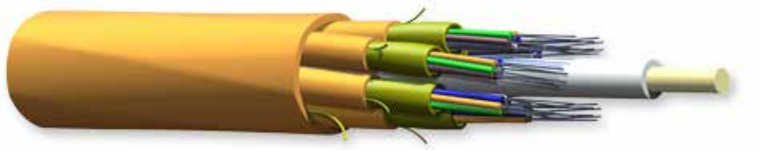
Outside Plant/UV-resistant = BLACK



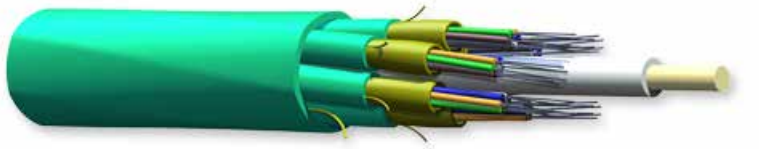
OM1 (62.5 µm) = ORANGE



OM2 (50 µm) = ORANGE



OM3 and OM4 (Laser-optimized 50 µm) = AQUA

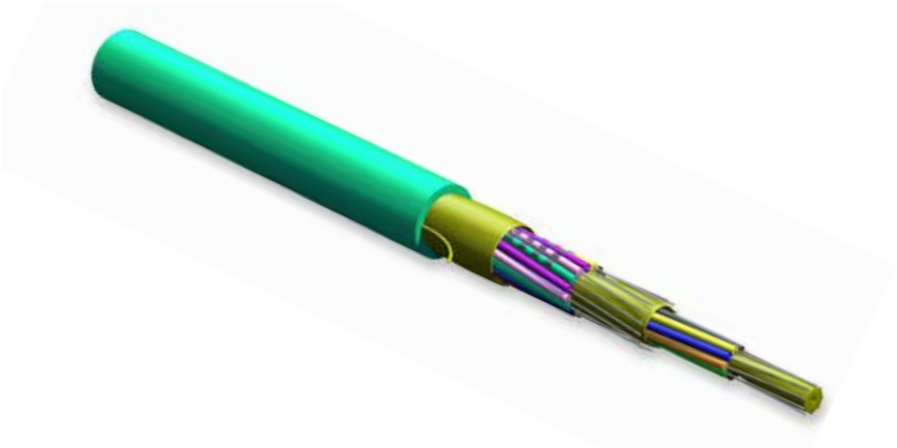


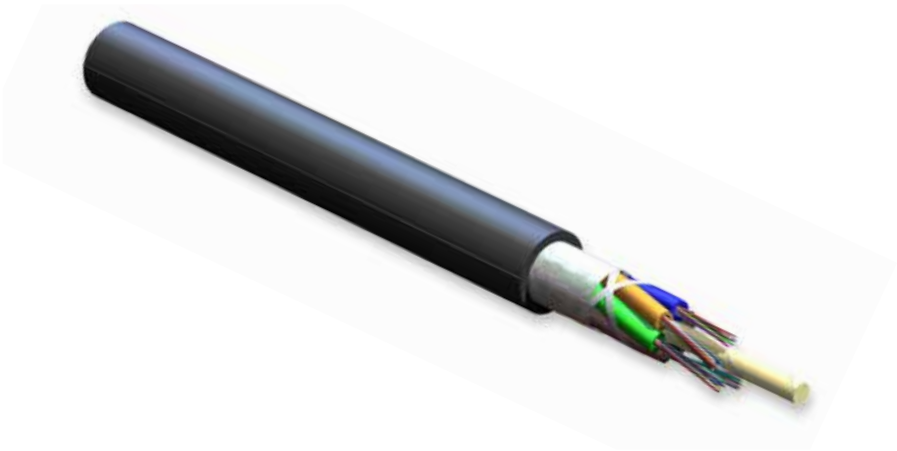
OS2 (SM) = YELLOW



Basics of Fiber Optic Cabling

Difference between tight-buffered and loose tube cable.

Tight-Buffered Cables	
	• Mainly used indoors • 900 µm coated fiber - Allows for direct termination with UniCam® or anaerobic Connectors • Common Corning Cable Systems brands are MIC® and FREEDM® One Cables

Loose Tube Cables	
	• Mainly used outdoors • 250 µm coated fiber - Requires the use of fan-out kits for termination with UniCam or anaerobic Connectors • Optimized for fusion splicing • Operate in large temperature window • Common Corning Cable Systems brands are ALTOS® and FREEDM Gel-Free Cables

Basics of Fiber Optic Cabling

Indoor cable considerations – flame ratings.

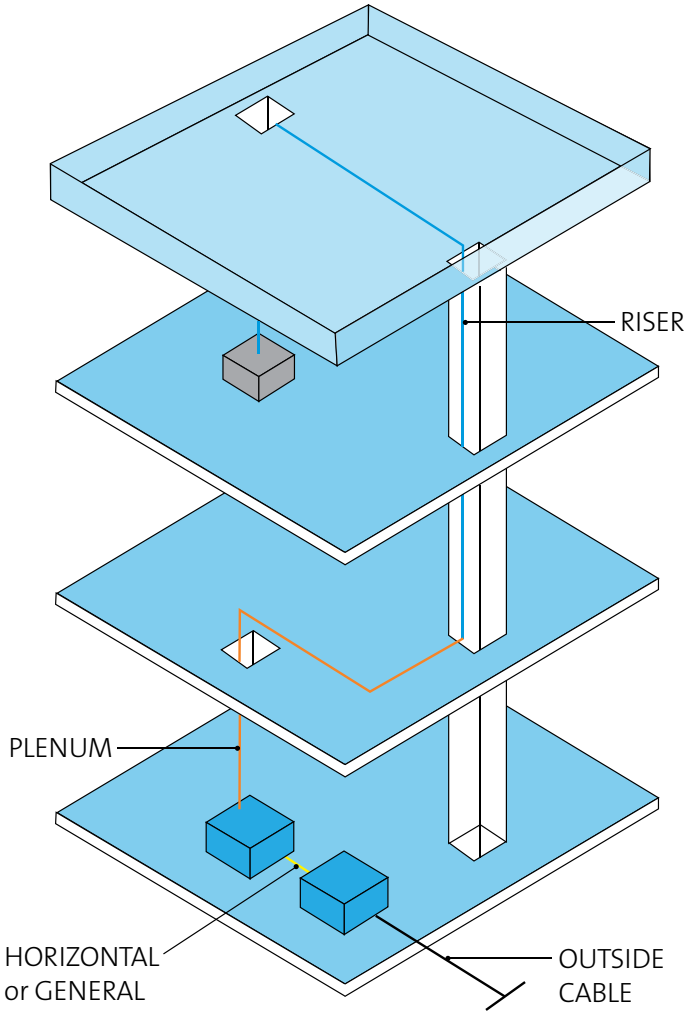
- Governed by The National Electric Code® (NEC®)

- OFNP = PLENUM
  - Highest rating – plenum air handling spaces
  - Plenum cables can also be used in riser and general space

- OFNR = RISER
  - Middle rating – vertical cable runs
  - Riser cables can also be used in general space

- OFN = GENERAL
  - Lowest rating – horizontal cable runs (non-plenum or riser)

- Outside plant cable is not flame rated and only up to 50 feet can be inside a building



Basics of Fiber Optic Cabling

Transmission performance.

Fiber Type Fiber Core Diameter (µm)	Multimode 62.5	Multimode 50	Multimode 50	Multimode 50	Multimode 50	Single-mode 8.2
Fiber Category	OM1	OM2	OM3	OM4	OM4 Extended Distance	OS2
Wavelengths (nm)	850/1300	850/1300	850/1300	850/1300	850/1300	1310/1383/1550
Maximum Attenuation (dB/km)	3.4/1.0	3.0/1.0	3.0/1.0	3.0/1.0	3.0/1.0	0.4/0.4/0.3
Serial 1 Gigabit Ethernet (m)	300/550	750/600	1000/600	1100/600	1100/600	5000/–/–
Serial 10 Gigabit Ethernet (m)	33/–	150/–	300/–	550/–	600/–	10000/–/40000
Minimum Overfilled Launch (OFL) Bandwidth (MHz•km)	200/500	700/500	1500/500	3500/500	3500/500	–/–/–
Minimum Effective Modal Bandwidth (EMB) (MHz•km)	220/–	950/–	2000/–	4700/–	5350/–	–/–/–

Notes:

1) Improved attenuation and bandwidth options available.

2) Bend-insensitive single-mode fibers available upon request.

3) Contact a Corning Cable Systems Customer Care Representative for additional information.

4) 50 µm multimode fiber macrobend loss ≤ 0.2 dB at 850 nm for two turns around 75 mm radius mandrel.

Indoor Cables

Step 1. Choose application space.	Riser						
Step 2. Choose fiber count.	Single-Fiber Riser Cable 001x31-31xxx-24 1 Fiber	Zipcord Riser Cable 002x51-31xxx-24 2 Fibers	≤ 24 Fibers			> 24 Fibers	
Step 3. Choose cable characteristics.			Non-armored	Dielectric armored	Interlocking armored	Non-armored	Interlocking armored
Step 4. Choose cable.			MIC® Riser Cable xxxx81-3x1xx-24 2-24 Fibers	MIC DX Riser Cable xxxx81-3x1xx-D1 2-24 Fibers	MIC Interlocking Armored Riser Cable xxxx81-3x1xx-A1 2-24 Fibers	MIC Unitized Riser Cable xxxx81-xx1xx-24 36-144 Fibers	MIC Unitized Interlocking Armored Riser Cable xxxx81-xx1xx-A1 36-144 Fibers

* See page 13 for more information on how to build a cable part number.

Indoor Cables

Plenum						
Single-Fiber Plenum Cable 001x38-31xxx-29 1 Fiber	Zipcord Plenum Cable 002x58-31xxx-29 2 Fibers	≤ 24 Fibers			> 24 Fibers	
		Non-armored	Dielectric armored	Interlocking armored	Non-armored	Interlocking armored
		MIC® Plenum Cable xxxx88-3x1xx-29 2-24 Fibers	MIC DX Plenum Cable xxxx88-3x1xx-D3 2-24 Fibers	MIC Interlocking Armored Plenum Cable xxxx88-3x1xx-A3 2-24 Fibers	MIC Unitized Plenum Cable xxxx88-xx1xx-29 36-144 Fibers	MIC Unitized Interlocking Armored Plenum Cable xxxx88-xx1xx-A3 36-144 Fibers

Indoor/Outdoor Cables

Step 1. Choose application space.	General Low-Smoke/Zero-Halogen, Tray Rated				
Step 2. Choose cable characteristics.	Non-armored single-jacket	Non-armored double-jacket	Interlocking armored	Non-armored single-jacket MSHA rated	Non-armored double-jacket MSHA rated
Step 3. Choose cable.	Industrial LSZH™ Single-Jacket Cable xxxxUZ-T41xxD2N 12-288 Fibers	Industrial LSZH Double-Jacket, Low Temperature Cable xxxxUL-T46xxD2N 12-288 Fibers	Industrial LSZH Interlocking Armored Cable xxxxUZ-T41xxDAN 12-288 Fibers	Mining and Petrochemical Single-Jacket Cable xxxxUZ-T41xxD2M 12-288 Fibers	Mining and Petrochemical Double-Jacket Cable xxxxUL-Tx6xxD2M 12-288 Fibers

Step 1. Choose application space.	Riser Tight-Buffered				
Step 2. Choose cable characteristics.	Non-armored			Interlocking armored	
	≤ 24 Fibers	> 24 Fibers	2.0 mm subunits	≤ 24 Fibers	> 24 Fibers
Step 3. Choose cable.	FREEDM® One Cable xxxx8F-311xx-29 2-24 Fibers	FREEDM One Unitized Cable xxxx8F-xx1xx-29 36-72 Fibers	FREEDM Fan-Out Cable xxxx6F-313xx-29 1-4 Fibers	FREEDM One Interlocking Armored Cable xxxx8F-311xx-A1 2-24 Fibers	FREEDM One Unitized Interlocking Armored Cable xxxx8F-xx1xx-A1 36-72 Fibers

* See page 13 for more information on how to build a cable part number.

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Indoor/Outdoor Cables

Riser
Loose Tube

Non-armored	Interlocking armored	Corrugated Steel Tape Armored
FREEDM® LST™ Cable xxxxSF-T41xxD20 2-24 Fibers	FREEDM LST Interlocking Armored Cable xxxxSF-T41xxDA1 2-24 Fibers	Industrial LSZH™ Corrugated Armored Cable, Tray Rated xxxxUV-T41xxD2N 12-288 Fibers
FREEDM Gel-Free Cable xxxxUF-T41xxD20 12-288 Fibers	FREEDM Gel-Free Interlocking Armored Cable xxxxUF-T41xxDA1 12-288 Fibers	

Plenum

Tight-Buffered		Loose Tube		
Non-armored	Interlocking armored	Non-armored		Interlocking armored
		≤ 24 Fibers	≤ 72 Fibers	
FREEDM One Cable xxxx8P-311xx-29 2-24 Fibers	FREEDM One Interlocking Armored Cable xxxx8P-311xx-A3 2-24 Fibers	FREEDM LST Cable xxxxSP-T41xxD20 2-24 Fibers	FREEDM Gel-Free Cable xxxxP-T41xxD20 6-72 Fibers	FREEDM Gel-Free Interlocking Armored Cable xxxxxP-T41xxDA3 12-72 Fibers

Outdoor Cables

Step 1. Choose application space.	Direct Buried	Duct	Aerial	
Step 2. Choose cable characteristics.	Armored	Non-armored	Lashed	Self-supporting
Step 3. Choose cable.	ALTOS® Lite™ Single-Jacket, Single-Armored Cable xxxUC-xxxxxD20 6-288 Fibers	ALTOS with FastAccess® Technology, All-Dielectric, Gel-Free Cable xxxU4-xx7xxD20 6-288 Fibers	ALTOS with FastAccess Technology, All-Dielectric, Gel-Free Cable xxxU4-xx7xxD20 6-288 Fibers	SOLO® ADSS All-Dielectric Cable, *Contact customer care for part numbers 1-800-743-2675.* 6-144 Fibers ALTOS Figure-8 Gel-Free Cable xxxUA-xxxxxD20 6-288 Fibers

* See page 13 for more information on how to build a cable part number.

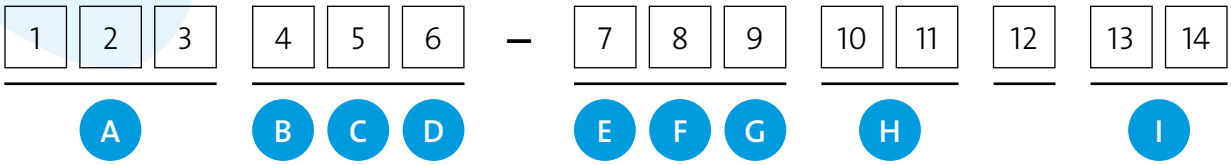
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Part Numbers

How to Build a Part Number from the Cable Construction

If you have a cable construction and want to build a part number, use the following steps.

Corning's optical cable part numbers have the following format:



- **A** Fiber Count (Digits 1-3)
- **B** Fiber Type (Digit 4)
- **C** Cable Construction (Digits 5 & 12)
- **D** Central Member/Outer Jacket/Flammability Listing (Digit 6)
- **E** Fiber Placement (Digit 7)
- **F** Unit Color/Fiber Color/Length Marking (Digis 8)
- **G** Tensile Rating/Twisted Pairs/Subunit Diameters (Digit 9)
- **H** Transmission Options (Digits 10 & 11)
- **I** Special Manufacturing Needs (Digits 13 & 14)

Select Cable Attributes

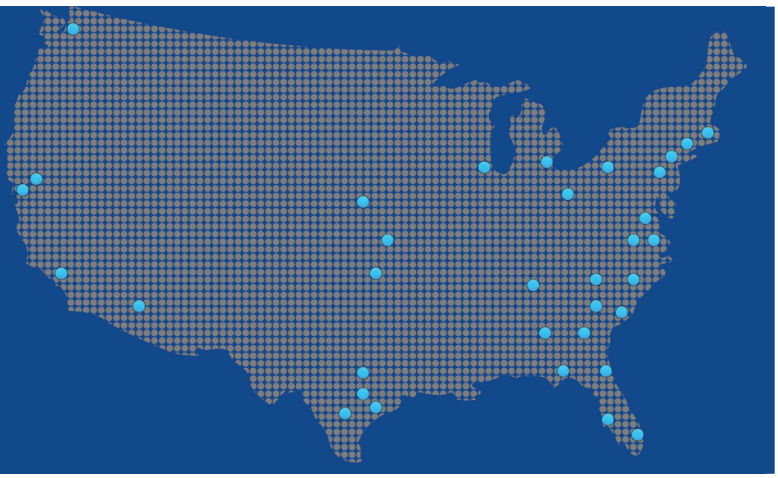
	MIC®, MIC Unitized Riser Cable	MIC DX Riser Cable	MIC, MIC Unitized Interlocking Armor Riser Cable	MIC, MIC Unitized Plenum Cable	MIC DX Plenum Cable	MIC, MIC Unitized Interlocking Armor Plenum Cable	FREEDM®, FREEDM One, FREEDM One Unitized, FREEDM LST™ Riser Cable
PVC Riser	■	■	■				■
PVC Plenum				■	■	■	
PVDF							
LSZH							
MDPE							
Polyamide/Nylon Overjacket Available							
Indoor	■	■	■	■	■	■	■
Outdoor							■
Duct	■			■			■
Aerial							■
Direct Buried							
Low Friction	■	■	■	■	■	■	■
UV-Resistant							■
Fungus Resistant							■
Water Resistant							■
Metallic Armor			■			■	
Dielectric Armor		■			■		
Fiberglass Armor							
Impact and Crush Resistance		■	■		■	■	
Rodent Resistance			■			■	
Tray Rated							
Petrochemical Resistance							
Minimum Operating Temperature °C (°F)	-20 (-4)	-20 (-4)	-20 (-4)	0 (32)	0 (32)	0 (32)	-40 (-40)
Maximum Operating Temperature °C (°F)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)	70 (158)

Select Cable Attributes

FREEDM® Plenum Cable	FREEDM One, FREEDM LST Plenum Cable	Industrial LSZH™ Cable	Industrial LSZH Fiberglass-Armored Cable	Mining and Petrochemical Cable	ALTOS® with FastAccess® Technology Cable	ALTOS Lite™ Cable	SST-Drop™ Cable
			■				
	■						
■							
		■	■	■			
					■	■	■
						■	■
■	■	■	■	■			
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
		■	■	■		■	■
■	■				■	■	■
■	■	■	■	■	■	■	■
■	■	■	■	■	■	■	■
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						■	
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			■			■	
		■	■	■			
				■			
-40 (-40)	-40 (-40)	-50 (-58)	-50 (-58)	-50 (-58)	-40 (-40)	-40 (-40)	-40 (-40)
70 (158)	70 (158)	75 (167)	75 (167)	75 (167)	70 (158)	70 (158)	70 (158)

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