## INDOOR VS. OUTDOOR CABELLING

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<th>INDOOR</th>
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<tr>
<td><strong>Simplex Riser</strong></td>
<td><img src="image1" alt="Simplex Riser" /></td>
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<td><strong>Duplex Riser</strong></td>
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<td><strong>Micro Distribution Riser</strong></td>
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<td><strong>Fiber + Cat6 Riser</strong></td>
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<td><strong>Breakout Riser</strong></td>
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<td><strong>Aluminum Interlocking Armored Plenum</strong></td>
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<td><strong>Simplex Plenum/LSZH</strong></td>
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<td><strong>24 Strand Single Tube Plenum</strong></td>
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<td><strong>Hybrid Demarc Duplex Plenum</strong></td>
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<td><strong>Rugged Micro Distribution Riser</strong></td>
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<td><strong>Tactical Micro Distribution</strong></td>
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<td><strong>Tactical Breakout</strong></td>
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<td><strong>Armored Corrugated Steel</strong></td>
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### Specifications

- **Outer Diameter (Millimeters)**
  - Simplex Riser: 3.0
  - Duplex Riser: 3.0 x 2
  - Micro Distribution Riser: 3.0 - 10.6
  - Fiber + Cat6 Riser: 14.0
  - Breakout Riser: 11.6 - 19.25
  - Simplex Plenum/LSZH: 3.0
  - Duplex Plenum/LSZH: 3.0 x 2
  - Micro Distribution Plenum/LSZH: 3.0 - 10.6
  - 24 Strand Single Tube Plenum: 3.1
  - Fiber + Power Plenum: 8.4
  - Hybrid Demarc Duplex Plenum: 3.0 x 2
  - Breakout Plenum: 3.0 x 2
  - Rugged Micro Distribution Riser: 7.2
  - Tactical Micro Distribution: 6.1
  - Tactical Breakout: 4.8
  - Armored Corrugated Steel: 5.0 - 9.0

- **Fiber Types**
  - MM = Multimode
  - SM = Single Mode
  - MM/SM = MM, SM, or MM/SM

- **Fire Rating**
  - Riser
  - Plenum
  - Not Rated

- **Conduit or Duct Recommended**
  - Recommended

- **Direct Burial**
  - Varies

- **Water Blocking Features**
  - Reduces water intrusion

- **UV Resistant**
  - Resistant

- **Rodent Resistant**
  - Resistant

- **Armored**
  - Armored

Refer to specification sheets for full cable details. ©2021 Cleerline Technology Group | 1-866-469-2487 | www.cleerlinefiber.com
INDOOR VS OUTDOOR FIBER OPTIC CABLE

Let’s face it: many installations do not involve perfect conditions. What are you supposed to do? What are your cabling options?

First, make sure to check the rating and specification requirements for your installation. In most cases, cable specifications will indicate whether a given cable is intended for indoor, indoor/outdoor, or outdoor only use, as well as the cable’s fire rating.

The following article provides some basic recommendations based on Cleerline’s current cable selection and is subject to change. For questions on specific applications, please contact our technical support team at info@clrtec.com.

A Note About Water

Unless otherwise specified, any statements relating to water or standing water refer to fresh water.

Fire Ratings

Indoor, Indoor/Outdoor, and Outdoor are not recognized fire ratings. While our indoor and indoor/outdoor cables do carry a fire rating, these vary by cable type. Always check your local fire code requirements prior to selecting cables.

INDOOR CABLES

Indoor cables are intended for use in (you guessed it) indoor environments. This means cables are not expected to be subject to moisture or condensation, sunlight, or large swings in temperature. Use indoor-rated cabling for in-premise wiring, or for connections between switches, displays, or other devices inside homes and offices.

Importantly, indoor rated cables will also have a fire rating (i.e. riser, plenum, or LSZH). Ensure the rating meets your installation’s requirements before installing.

While our indoor cables can handle a wide range of temperatures, indoor cables are usually intended for applications with some sort of climate control. Installing in an unheated utility shed in North Dakota, or have extremely high humidity seasonally? Consider an indoor/outdoor cable.

Armored Indoor Cables

Some indoor applications require extra protection. Worried about cables being chewed by rodents or crushed by a forklift inside your building? Cables like Aluminum Interlocking Armored (AIA) provide a solution. AIA incorporates an aluminum tube around the fiber-holding subunit, protecting the glass. The aluminum layer also allows installation without additional conduit.

The armor, however, is not a substitute for an indoor/outdoor rating. Aluminum Interlocking Armored is not intended for use in situations involving moisture or large, fast, changes in temperature. For harsher applications, move to an indoor/outdoor or outdoor cable.

INDOOR/OUTDOOR CABLES

Indoor/Outdoor cables provide the greatest installation flexibility. All our indoor/outdoor rated cables incorporate dry water-blocking yarns and have UV-resistant qualities.

As none of our current indoor/outdoor cables incorporate armor, we do recommend installing these cables in ducts or conduit (they are not intended for direct burial).

Rugged Cable

While our indoor/outdoor cables are up to the challenges of multiple environments, Rugged Micro Distribution is designed for more difficult applications. Rugged Micro incorporates a secondary jacketing layer for additional cable protection. It also has fiberglass yarns to help to deter rodents and provide increased tensile strength. Choose Rugged Micro if you have concerns about your installation environment but feel that armor is not necessary, such as installing cable in a conduit.

What About Water?

As noted above, our indoor/outdoor cables include water-blocking yarns.

If any water incursion occurs, these yarns are intended to mitigate ingress, preventing issues with signal transmission down the cable.

(Note that these yarns will not help with water around the connectors; please contact us if this is a concern.)

To be on the safe side, if you know that you will have some standing water in the conduit occasionally, start with at least Rugged Micro Distribution.

OUTDOOR ONLY CABLES

Outdoor cables are designed to handle tough conditions. As such, their constructions may require the use of jacketing components not intended to meet in-building fire codes. Our outdoor cables do not carry a fire rating and are only intended for use outside. Generally, a maximum of 50 feet of ingress into structures is allowed (please refer to local regulations for specifics).

All outdoor rated cabling includes dry water-blocking yarns and/or tapes. Again, for installations with a larger amount of standing water, we suggest looking at our Armored Corrugated Steel direct burial cable.

Tactical

Tactical cabling is an outdoor-only rated cable designed to be frequently moved or changed. It is designed to be highly flexible and resistant to abrasion and chemicals. With its polyurethane jacket, it is also UV-resistant. Tactical can be installed permanently on a site, but it is not suitable for direct burial. Choose this cable for applications like broadcasts, rental set-ups, or staging.

Direct Burial

Armored Corrugated Steel Direct Burial is our cable of choice for direct burial or harsh outdoor or exposed installations. This is our most robust cable, featuring a polyethylene jacket over a corrugated steel tube. Fibers are contained with an additional subunit, and dry water blocking tapes and yarns help to keep any moisture out. Due to the armor, this cable is larger and less flexible than most of our other cables, although it will still bend beyond EIA SP-2840A standards.

Choosing cable depends on your specific installation’s requirements. Again, always check for any ratings and regulations before choosing cables. Don’t hesitate to contact us if you have any questions!