

What is FTTH Drop Cable?

FTTH (fiber to the home) networks are installed in many areas covering indoor section, outdoor section, as well as the transition in between. To fulfill the cabling requirements from different areas, different types of fiber optic cables are well developed. Drop cable as an important part of FTTH network forms the final external link between the subscriber and the feeder cable. This blog post will focus on this special outdoor fiber optic cable.

Drop cables are located on the subscriber end to connect the terminal of a distribution cable to a subscriber's premises. They are typically small diameter, low fiber count cables with limited unsupported span lengths, which can be installed aerially, underground or buried. As it is used in outdoor, drop cable shall have a minimum pull strength of 1335 Newtons according to the industry standard.

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Figure 1: 1 FO indoor drop cable

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Types of FTTH Drop Cable

Drop cables are available in many different types. The following part introduces three most used drop cables divided according to the cable structure.

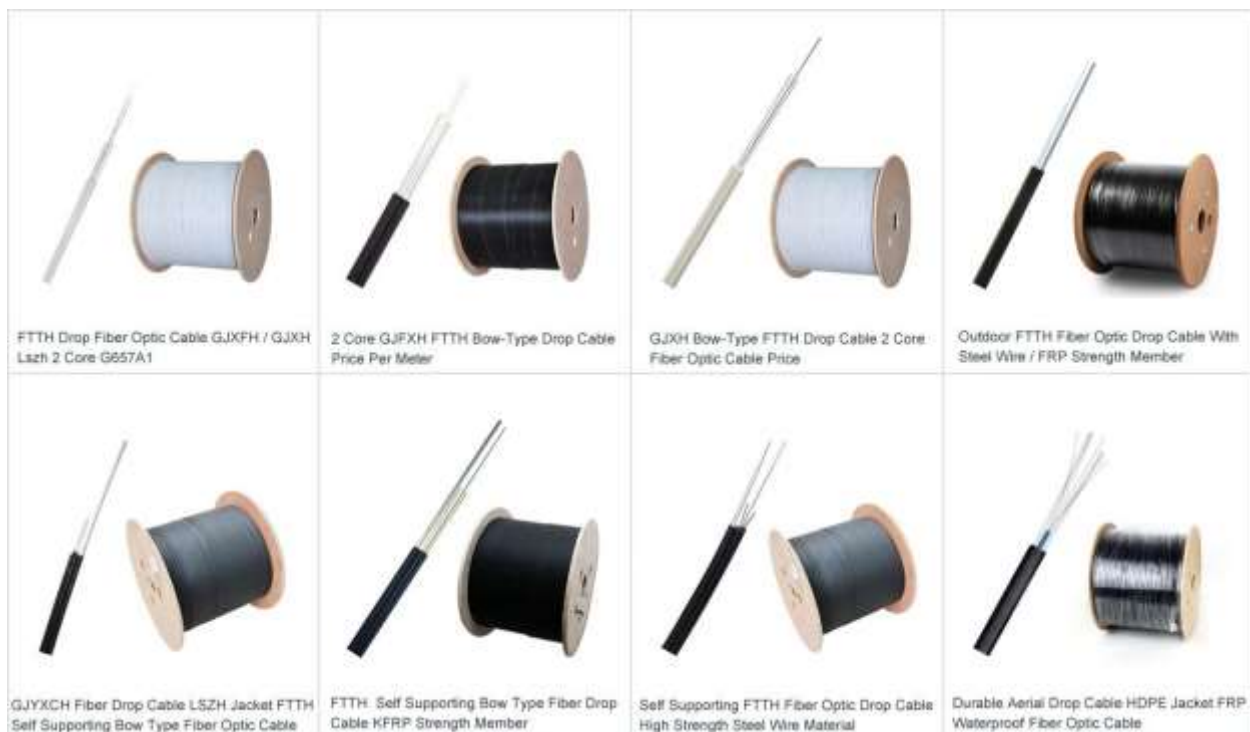


Figure 2: various types of FTTH drop cables

Flat Type Drop Cable

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Also known as flat drop cable, with a flat out looking, usually consists of a polyethylene jacket, several fibers and two dielectric strength members to give high crush resistance. Drop cable usually contains one or two fibers, however, drop cable with fiber counts up to 12 or more is also available now.

Figure 8 Aerial Drop Cable

This is self supporting cable, with the cable fixed to a steel wire, designed for easy and economical aerial installation for outdoor applications. This type of drop cable is fixed to a steel wire. Typical fiber counts of figure 8 Drop Cable are 2 to 48. Tensile load is typically 6000 Newtons.

Round Drop Cable

This variant usually contains a single bend insensitive fiber buffered and surrounded by dielectric strength members and an outer jacket, which can provide durability and reliability in the drop segment of the network. The following shows the cross section of a round drop cable with one tight buffered optical fiber.

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Figure 3: iso14001 lszh g652d 12 core optical fiber drop cable

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Drop Cable Connectivity Method: Splice or Connector?

It's necessary to choose a right architecture for FTTH network from overall. However, drop cable as the final connection from the fiber optic network to customer premises also plays an important role. Thus, finding a flexible, efficient, and economical drop cable connectivity method becomes a crucial part of broadband service. Whether to use a fiber optic connector, which can be easily mated and un mated by hand or a splice, which is a permanent joint? The following will offer the answer and the solutions for your applications.

It is known that splice, which eliminates the possibility of the connection point becoming damaged or dirty with a permanent joint, has better optical performance than fiber optic connector. However, splice lack of operational flexibility compared with fiber optic connector. Fiber optic connector can provide an access point for networking testing which cannot be provided by splicing. Both methods have their own pros and cons.

Generally, splice is recommended for drop cables in the places where no future fiber rearrangement is necessary, like a greenfield, new construction application where the service provider can easily install all the drop cables. Fiber optic connector is appropriate for applications which flexibility is required, like ONTs which have a connector interface.

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Choosing the Right Splice Method

For splice, there are two methods, one is fusion splicing, the other is mechanical splicing. Fusion splicers have been proved to provide a high quality splice with low insertion loss and reflection. However, the initial capital expenditures, maintenance costs and slow installation speed of fusion splicing hinder its status as the preferred solution in many cases. Mechanical splicing is widely used in FTTH drop cable installation in countries, as a mechanical splice can be finished in the field by hand using simple hand tools and cheap mechanical within 2 minutes. It's a commonly used method in many places, like China, Japan, and Korea. However, in US mechanical splicing is not popular.

Choosing the Right Connector

For fiber optic connector, there are two types of connectors for drop cable connection. Field terminated connector, which contains fuse on connector and mechanical connector, and pre terminated drop cable, which is factory terminated with connector on the end of drop cable.

Fuse on connector uses the same technology as fusion splicing to provide the high optical connection performance. However, it requires expensive equipment and highly trained technician, and more time like fusion splicing. Mechanical connector could be a replacement of fuse on connector if the conditions do not fit the mentioned ones. It could be a time save and cost save solution for drop cable termination.

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If you have no limits in cost and want high performance termination in a time save way, pre terminated drop cable could be your choice. Many factories can provide you customized drop cables in various fiber types, fiber optic connector and lengths.

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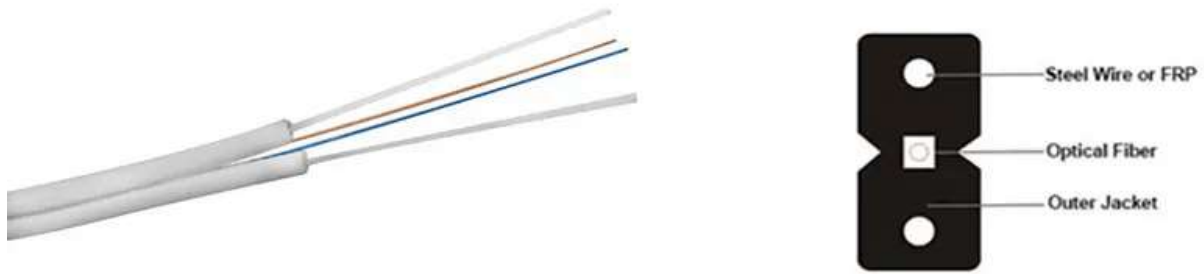


Figure 4: indoor 2 cores snt fdc FTTH drop fiber optic cable

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Features and Benefits

- Choice of fiber types
- Single mode optical fiber meeting ITU T G.657A1 or ITU T G.657A2
- Individually colored optical fibers, (blue, orange, green, brown)
- Notched 2 x 3 mm construction for easy stripping
- White LSZH jacket for internal use
- Black LSZH jacket for short distance external use

Applications

- Internal FTTH applications horizontal and riser
- Clipping to surfaces including skirting boards
- Short distance external use with black LSZH jacket

Specifications

Parameter	Unit	Value
Crush (short term)	N/100 mm	500

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Parameter	Unit	Value
Strength member		FRP
Storage temperature	°C	20 to 60
Installation temperature	°C	5 to 50
Operating temperature	°C	20 to 60
Primary buffer diameter	μm	250
Fiber count	n	1 to 4
Nominal outer diameter	mm	2.0 x 3.0 ± 0.2
Nominal weight	kg/km	7
Maximum tensile load	N	80
Minimum bend radius (installation)	mm	44

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Parameter	Unit	Value
Minimum bend radius (installed)	mm	25
Jacket material		LSZH
Drum Length	m	2

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Figure 5: outdoor steel wire g657a1 FTTH drop cable self-supporting 1 2 4 6 core

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Whether you have questions about FTTH Drop Cable or you would take a sample of FTTH Drop Cable, feel free to contact us and you will have our response within 6 hours.

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