

SHAPING THE FUTURE WITH "TSUNAGU" TECHNOLOGY.

FUJIKURA NEWS



Release of Aerial High-density High-strength Single-mode Optical Fiber Cables for NTT East and West



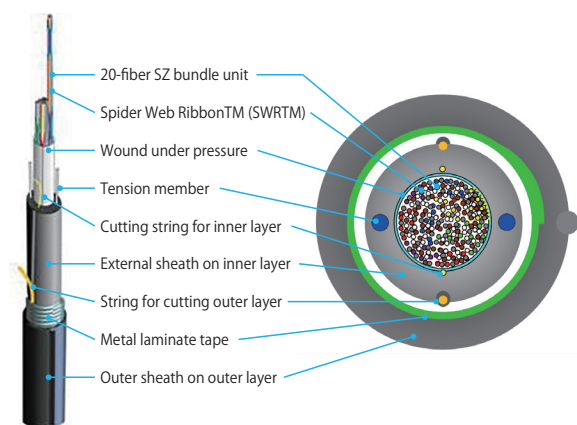
Fujikura has started to deliver aerial high-density (HD) high-strength (HS) single-mode (SM) optical cables with Spider Web Ribbon™ (SWRTM) for Nippon Telegraph and Telephone East Corporation and Nippon Telegraph and Telephone West Corporation (hereafter NTT). This fiber-optic cable has achieved the reduction by about 25% in external diameter and about 50% in weight for the 200-fiber structure by removing slot from an existing sheathed optical cable to prevent damage by birds or animals.

In addition, this new optical cable allows easy pulling out

of SWRs, which was a challenge for the existing slot structure. So the cable now has a structure in which SWRs can be taken out safely and easily using an ordinary tool to strip off sheathing. Currently, NTT is replacing existing slot cables with those with a slot-less structure, which allows reductions in diameter and weight. The introduction of the new cables has expanded the area where the slot-less cables are used in NTT's access networks.

We will continue to contribute to the further development of a highly information-oriented society by developing, manufacturing and supplying slot-less cables.

● Aerial 200-fiber HD HS SM optical fiber cable



● Cable standard outer diameter and weight

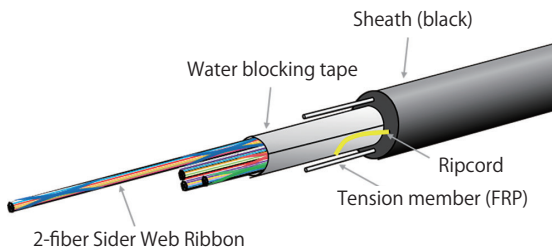
	Item	24-fiber	40-fiber	60-fiber	100-fiber	200-fiber
Standard structure	Standard outer diameter (mm)	13.0	13.0	13.0	14.0	15.0
	Approximate weight (kg/m)	0.16	0.16	0.16	0.18	0.20
With support	Standard outer diameter (mm)	13.0×23.0	13.0×23.0	13.0×23.0	14.0×24.0	15.0×25.0
	Approximate weight (kg/m)	0.26	0.26	0.26	0.28	0.30

Fujikura Releases Indoor-Outdoor Cable with 200 μ m Fiber

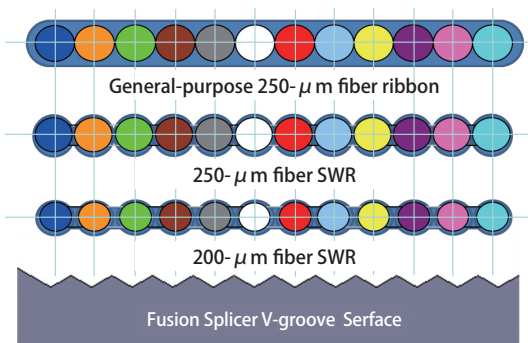
Fujikura has released Indoor-Outdoor Wrapping Tube Cable™ (WTC™) made of using 200- μ m optical fibers. Fujikura has developed Indoor-Outdoor WTC using 200- μ m fibers in Fujikura's proprietary 12F Spider Web Ribbon™ (SWR™) that have drastically reduced diameters and weight compared to conventional WTC with 250- μ m fibers. In addition, since this WTC is designed for both indoors and outdoors use, it has flame retardancy on the cable jacket to minimize human and physical damage in case of fire inside buildings while having weather resistance. For indoor application, cables are usually designed in compliance with either UL standard in the US or CPR standard (Construction Products Regulation) in EU. Fujikura's Indoor-Outdoor WTC complies with both standards and thus can be deployed worldwide.

Consequently, global customers do not need to stock multiple cables with different fireproof ratings. In addition, Indoor-Outdoor WTC can eliminate the need for splicing inside a building because this cable can be installed outdoors and indoors. As a result, customers and installers can save time and money. Moreover, the cable has flexibility, which helps easy handling in a limited space. Both SWR with 200- μ m fibers and SWR with 250- μ m fibers have the same fiber pitch, which ensures backward compatibility for splicing. This allows one-time fusion splicing not only between 200- μ m fiber SWRs but also between 200- μ m fiber SWR and 250- μ m fiber SWR. Thus, network builders do not need to purchase new fusion splicers for splicing 200- μ m SWRs, which contributes to saving installation costs.

Structure



SWR fiber pitch structure



Specifications

Application	For Indoor and outdoor use			
Number of fiber	288	576	864	1728
Standard outer diameter (mm)	12.5	15.0	16.5	21.5
Approximate weight (kg/km)	155	220	270	400
Fiber diameter (μ m)	200			
UL Standard	1666, 1685			
CPR Standard	Cca-s2, d0, a1*			

*Cca: Frame Retardancy, s2: Smoke Emission, d0: Flaming Droplets, a1: Acidity
* CPR is under official confirmation.

R&D

Fujikura and National Institute for Materials Science (NIMS) Co-awarded Tsukuba Encouragement Prize



Fujikura's Akiharu Funaki and National Institute for Materials Science's (NIMS) Kiyoshi Shimamura and Villora Garcia were awarded the 29th Tsukuba Encouragement Prize for their work on "Novel Faraday Rotator for Laser Machinery" by The Science and Technology Promotion Foundation of Ibaraki. The chief director the foundation is a Nobel Physics Prize winner, Reona Esaki. This prize is granted to researchers who have contributed to the promotion of science and technology, for example, by producing fruitful research results and putting them to practical use.

The Faraday rotator, which was subject to the prize, has features of using a new crystal called TSLAG (Tb3Sc2-xLukAl3012), demonstrating excellent optical properties compared to existing products, and allowing higher laser output. This crystal was commercialized in as short as 5 years after Fujikura and NIMS launched the basic research and is used in optical isolators for pulse fiber laser processing machines. At the conferment ceremony on November 13, Dr. Esaki presented the certificates

and medals.

Fujikura will continue to contribute to the promotion of science and technology and the development of society through research and development of optical components for lasers and their commercialization.



● Dr. Esaki and the presentee
(From left, Esaki, Funaki, Shimamura, Villora Garcia, Vice mayor of Tsukuba, Kezuka)

● TSLAG single crystal for Faraday Rotator

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Power & Telecom

Expansion of NETIS-registered LCX Lineup



Fujikura Dia Cable Ltd. Has expanded its product lineup by registering additional highly-foamed insulating leaky coaxial cables (LCX) to New Technology Information System (NETIS) *1 of the Ministry of Land, Infrastructure, Transport, and Tourism. (Registration No.: KK-180001-A)

The product in 43D size was registered in 2018, and those in 33D and 20D sizes have been just registered. These products are to be used mainly in mobile communications systems for tunnels and FM radio rebroadcasting. The new addition enables the selection of an optimum cable size according to the length of the cable to be installed, for instance, where 43D is intended for long-distance tunnels, 20D for short-distance tunnels. In addition, 33D is about 20% lighter in weight than existing braided insulating LCXs, and the connectors have become easy to attach in a shorter time (by about 40%) to reduce workers' workload.

*1 Database system developed by the Ministry of Land, Infrastructure, Transport and Tourism with the aim of sharing and providing information relevant to new technologies to use new technologies. When those who ordered or worked on public construction and other work use registered technologies, they are given an advantage of receiving additional points in construction results assessment according to the effect by the use.



● Highly-foamed insulating LCX

● Connector for highly-foamed insulating LCX

Fujikura Dia Cable <https://www.fujikura-dia.co.jp/contact/>



Circular Waterproof Connector DCA-A-F Series



Fujikura released the DCA series of connectors for industrial equipment. The product series is being well received.

New products of the DCA-A-F series, on the surfaces of which are coated by cathodic electrodeposition, has been added to the existing series, on the surfaces of which are processed by trivalent chromate treatment. The new connectors are suitable for devices (servo motor, machinery, FA-related machine) used in water drops, oil, and dust environments.



● DCA-A-F Series

● Features

- Higher anti-corrosivity than the DCA series (trivalent chromate treatment) because of cathodic electrodeposition coating
- One-touch locking system for fitting
 - Easy fitting (reduction of screw tightening work, no need of torque control)
 - Sound and marking indicating complete fitting
- Highly resistant to vibration and impulse

● Specifications

Surface treatment	Cathodic electrodeposition coating	Connection	Soldering
Fitting system	Compliant with VG95234	Waterproofness	IP67 (fitted)
Arrangement	Compliant with MIL-DTL-5015	Operating temperature range	-55°C~+125°C

✉ Connector Product Development Division ddk.contact@jp.fujikura.com



Volunteering for Reconstruction in Earthquake-stricken Minamisoma City, Fukushima, again in 2019

The Fujikura Group volunteered to work for reconstruction in earthquake stricken Minamisoma City, Fukushima Prefecture, on November 22 to 23 in 2019.

It has passed 8 and half years since Tohoku Region Pacific Coast Earthquake and the following Fukushima 1st Nuclear Power Plant's Accident and Disaster occurred on March 11 in 2011. While there are concerns about Fukushima reconstruction efforts fading away, we have carried out volunteer activities in Fukushima every year since 2014. This year has marked our fifth with 10 employees who participated in the event. With the cooperation of NPO Minamisoma City Voluntary Action Center, we cut weeds in some residential areas. This year, we had opportunities to talk with people who asked for this work, which inspired our feelings to further support Fukushima's

reconstruction.

Our volunteer activity may be a small step toward Fukushima's reconstruction, but we will continue volunteering in the affected areas to meet the expectations of people who hope reconstruction as early as possible.



● Picture of participants



● Cutting weed in residential area

✉ CSR Promotion Team fjk.csr@jp.fujikura.com



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