





ADD: 16F, 198 CHANGJIANG ROAD, NANJING, CHINA, 210018 TEL: 0086-25-84531722 FAX: 0086-25-84545196 E-MAIL:chenchao@sumec.com.cn WEB: www.sumec-wasin.com / www.sumec.com

SUMEC A FORTUNE 500 COMPANY SUMEC GROUP www.sumec-wasin.com





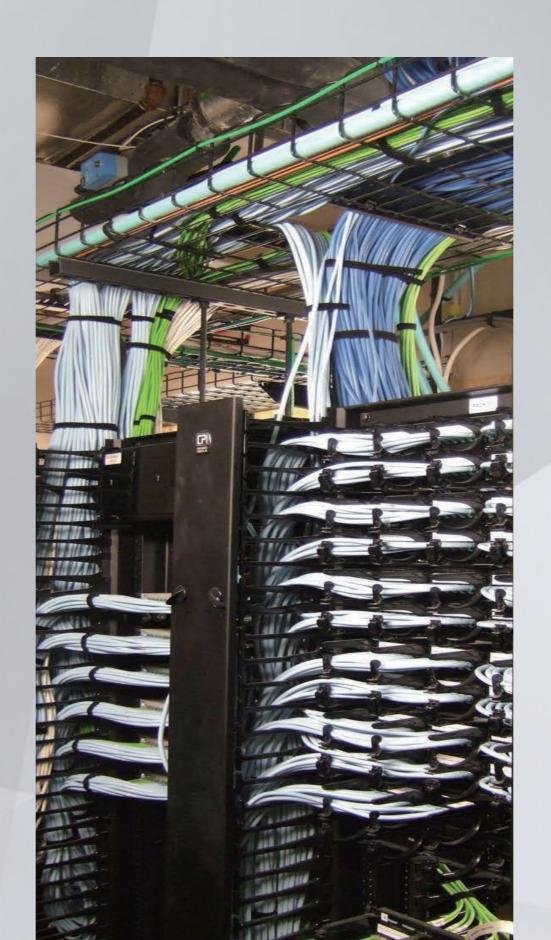
# 

# 

- 1 All-dry dielectric Cable
- 2 All-Dry Armored Cable
- 4 All-Dry Double Sheath Armored Cable
- 5 All-Dry Double Armored Cable

6 Submarine Cable

8 ADSS





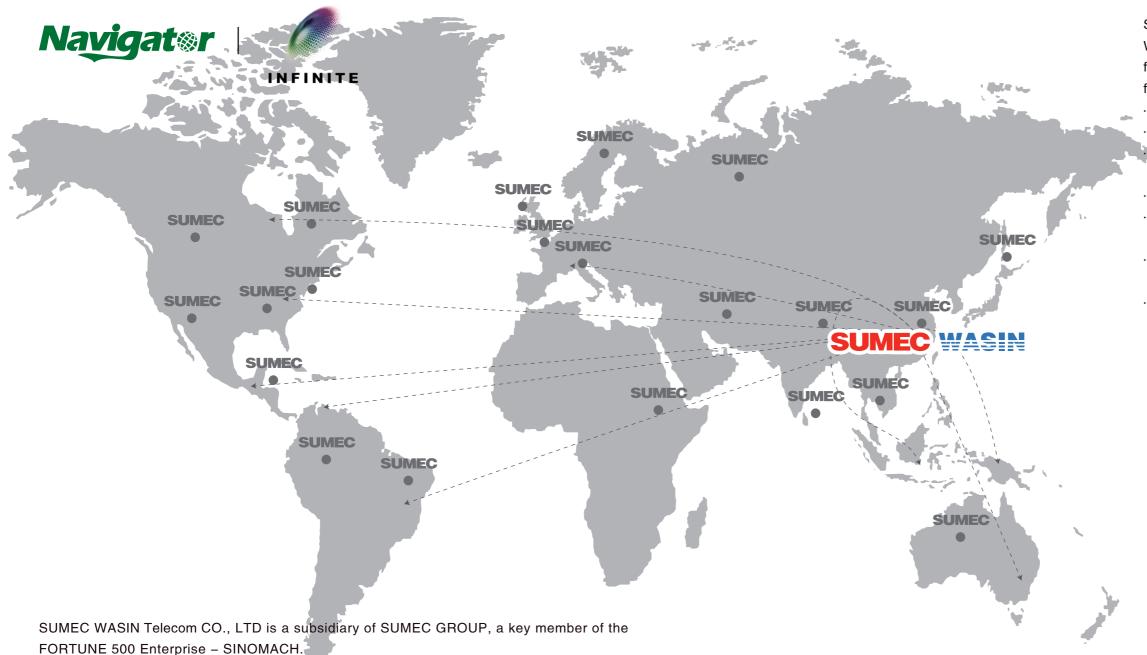
10 Stranded Single Sheath Ribbon Cable

13 Bow Tie Shape Drop Cable

14 Air-Blown Micro-Cable

16 Optical Power Ground Wire

# TRADITION AND HISTORY

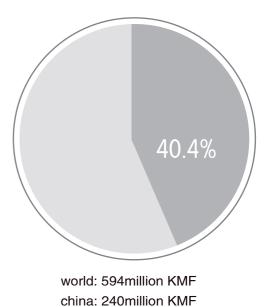


With nearly 40 years of development and the process of global economic integration, SUMEC has become a modern global manufacturing service group, focusing on three fields: trade and service, engineering contracting, investment and development. We have warehouses and technology centers in Europe and North America, and companies in other countries and regions. Our goal is to provide professional products and quality fullservice delivery services to customers around the world.

**Navigat**®r

Sumec has over 20 years manufacturing fiber optic cables. We import FUJIKURA glass–preforms from Japan, draw fibers and create a full range fiber optical cables in our factory.

- $\cdot\,A$  top 5 fiber optic cable manufacturer in China.
- 45 million fiber kilometers capacity per year.
- Range from 1 core drop cable up to 1728 cores ribbon cable dielectric or armored.
- Duct cable, direct buried, ADSS and submarine cables.
  A tier 1 fiber optic cable supplier of China Telecom, China Mobile and China Unicom.
- Supplying customized cable to major carriers and operators in EU and USA.
- · Certified to be compatible with worldwide major brands: Corning ,Prysmian / Draka, OFS/ FURUKAWA .



Production Capacity Percentage of China 2018





## **Remarks and Comments from testing personnel**

" As good or better than Corning and OFS "

Splicing Comments for the 96 Ct. non armored Fiber Cable Samples:

Corning: semi-medium thick Jacket easy prep, 1 Pull Cord breaks multiple times before completing, semi rigid Buffer, tubes wrapped very tight makes cable very durable, but sometimes tubes form a memory to each other a little more difficult to work with in an enclosure.

OFS: semi-medium thick jacket easy prep, 2 durable pull cords, easy prep, rigid Buffer Tubes a bit more difficult to work with, but ok to work with, flooding compound in the Buffer Tubes always a joy to work with.

Navigator: Thicker jacket than the other samples, a bit more difficult to work with, but a few preparations to get the feel for it ok, however provides maximum protection for the Buffer Tubes, almost emulates an armor jacket but better because under stress the armor will kink and have a permanent memory., this is the reason that it survived the Break Test a bit better than the other Samples, rigid tightly wrapped Buffer Tubes a little more difficult to work with but not much, Buffer Tubes do not form a memory of the tube adjacent to it, two very durable pull cords that don't break.

> **Cochran Communications** Palm Springs, California, USA

## All-dry dielectric Cable

- · 2-432 colored fibers
- · Loose tube gel-free construction
- · Fiber Reinforce Plastic wire central strength member. **Applications:**
- · Inter-building voice and data communication backbones
- · Installed in ducts, underground conduit and aerial. Features:
- · Loose tube construction for good moisture-resistant and water prevention
- · Nonconductive sheath and central strength member providing excellent electric isolation.



### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance	Allowable Tensile Resistance
Storage -40°C to 75°C Installation -30°C to 60°C Operating -40°C to 70°C		Short term 1000 N/100mm Long term 300 N/100mm	Short term 1500 N Long term 600 N
Options	Flame-retardant sheath like Low Smoke Zero Halogen material available upon request.		

Fiber Count	No. of Loose Tubes	Normal Cable Diameter mm	Normal Cable Weight Kg/Km
2-36	6	9.6	78
38-72	6	10.6	97
74-96	8	12.1	126
96-120	10	13.5	155
122-144	12	15.2	200
146-216	18	15.6	201
216-288	24	17.7	266
432	36	20.5	347







	FRP central strength member UV fiber Tube filling gel Loose tube
-	<sup>-</sup> Cable core filling compound <sup>-</sup> Binder & Additional <sup>-</sup> PE outer sheath





## All-Dry Armored Cable

#### • 2-432 colored fibers

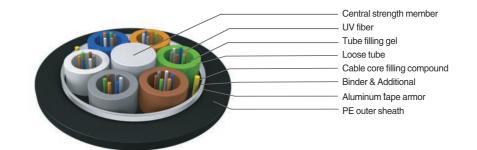
- Loose tube gel-free construction
- Fiber Reinforced Plastic wire central strength member
- Corrugated tape armor.

### Applications:

- Inter-building voice and data communication backbones
- · Installed in ducts, underground conduit and aerial.

#### Features:

- Loose tube construction for superior moisture-resistant and water prevention
- Single armor providing fiber protection
- Fiber Reinforce Plastic providing excellent tensile resistance.



### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance
Storage-40°C to 70°CInstallation-30°C to 60°COperating-40°C to 70°C	20 × ND—Installation 10 × ND—In-service	Short term 1000 N/100mm Long term 300 N/100mm
Options	Flame-retardant material sheath like Low Smoke Zero Halogen sheath available upon request; Phosphating steel wire strength member available upon request.	



(432core)

### Dimension of the cable:

Amount of fiber	Max. no. of the Fiber per Tube	Number of Tube Positions	Number of Active Tubes	Diameter (Appr.) mm	Weight (Appr.) Kg/km
2-36	6	6	1-6	11.0	117
38-72	12	6	4-6	12.0	140
74-96	12	8	7-8	13.5	175
98-120	12	10	9-10	14.5	209
122-144	12	12	11-12	16.6	260
146-216	12	18	13-18	17.0	262
218-288	12	24	19-24	19.1	334
432	12	30-36	30-36	22.0	419

\*The nominal and minimal thickness of the outer sheath is 1.5mm and 1.35mm.



Fiber
Water blocking yarn
Loose tube Water blocking yarn
Dielectric central element Water blocking tape
Corrugated steel tape Ripcord
Polyethylene (MDPE)



## All-Dry Double Sheath Armored Cable

· 2-144 colored fibers

Loose tube gel-free construction

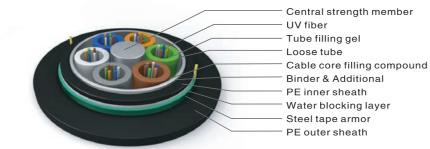
· Fiber Reinforce Plastic central strength member.

#### Applications:

- Inter-building voice and data communication backbones
- · Installed in ducts, underground conduits, direct buried and aerial.

#### Features:

- · Double sheath construction for superior moisture-resistant and water blocking protection
- · Single armor providing good mechanical performance and rodent-resistant construction
- Fiber Reinforce Plastic providing excellent tensile resistance and good fiber protection.



### Performance:

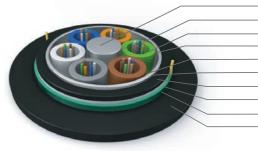
Temperature	Minimum Bend Radius	Allowable Crush Resistance	Allowable Tensile Resistance
Storage -40°C to 75°C Installation -30°C to 60°C Operating -40°C to 70°C	20 × ND—Installation 10 × ND—In-service	Short term 1000 N/100mm Long term 3000 N/100mm	Short term 3000 N Long term 1000 N
Options		ath like Low-Smoke Zero-Halogen of member available upon reques	material sheath available upon request; it.

Fiber Count	No. of Loose Tubes	Normal Cable Diameter mm	Normal Cable Weight Kg/Km
2~36	7	12.7	173
38~72	6	13.9	211
74~96	8	15.5	251
98~120	10	17.2	299
122~144	12	18.8	345



## All-Dry Double Armored Cable

- 2-144 colored fibers
- · Loose tube gel-free construction
- · Fiber Reinforce Plastic central strength member Applications:
- · Inter-building voice and data communication backbones
- · Installed in ducts, underground conduits, direct buried and aerial. Features:
- Double sheath construction providing superior moisture-resistant and water prevention
- · Double armored construction providing outstanding rodent-resistance and mechanical performance
- · Fiber Reinforce Plastic providing excellent tensile resistance and good fiber protection.



#### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance	Allowable Tensile Resistance
Storage -40°C to 70°C Installation -30°C to 60°C Operating -40°C to 70°C	25 × ND—Installation 12.5 × ND—In-service	Short term 3000 N/100mm Long term 1000 N/100mm	Short term 4000 N Long term 2000 N
Options	Flame-retardant material sheath like Low Smoke Zero Halogen sheath available upon request; Phosphating steel wire strength member available upon request.		

Fiber Count	No. of Loose Tubes	Normal Cable Diameter mm	Normal Cable Weight Kg/Km
2~36	6	13.9	202
38~72	6	15.1	241
74~96	8	17.1	290
98~120	10	18.6	333
122~144	12	20.2	381







Central strength member UV fiber - Tube filling gel - Loose tube Cable core filling compound Binder & Additional PE inner sheath Water blocking layer - Steel tape armor

PE outer sheath



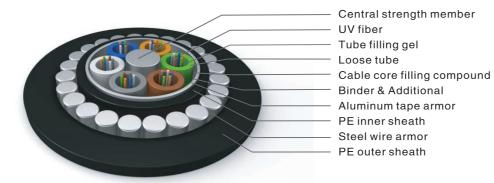


### Submarine Cable

- · 2-72 colored fibers
- Loose tube gel-filled construction
- Phosphating steel wire central strength member
- Corrugated coated aluminum tape armor
- · Stranded phosohating steel wire armor
- Moisture- resistant PE sheath.
   **Applications:**
- Installed under lake, river , in ducts, and direct buried
- · data communication backbones in building and metro

### Features:

- Loose tube gel-filled and dual sheath construction for superior moisture-resistant and water blocking protection
- · Phosphating steel wire central strength member providing excellent tensile resistance and good fiber protection
- Stranded phosohating steel wire armor providing outstanding crush resistance
- Guarantee of lifespan of 30 years.

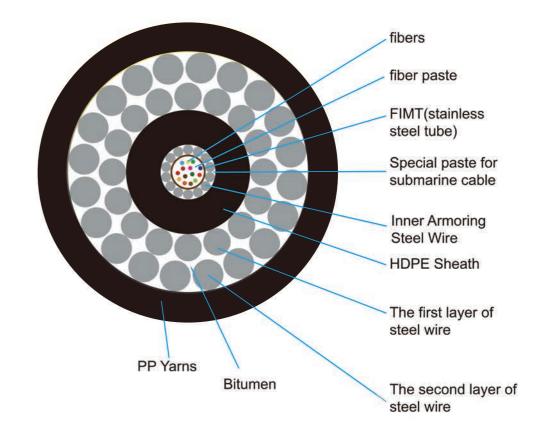


### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance	Allowable Tensile Resistance
Storage -40°C to 75°C Installation -30°C to 60°C Operating -40°C to 70°C	30 × ND—Installation 15 × ND—In-service	Short term 5000 N/100mm Long term 3000 N/100mm	Short term 10000 N Long term 4000 N
Options	Different construction, with more sheaths and more armor, available upon application scenarios.		, available upon application

Fiber Count	No. of Loose Tubes	Normal Cable Diameter mm	Normal Cable Weight Kg/Km
2~30	6	15.5	407
32~36	6	16.0	437
38~60	12	16.6	463
62~72	12	17.2	499

Structure Cross Section Parameters



### Parameters:

	Nominal Value	Remark
Stainless steel tube	Φ4.1mm	60 optical fibers
Inner Armoring Steel Wire	Φ1.16 mm	14 (phosphatized steel wire)
HDPE Sheath outer FIMT	Φ14.5mm	
The first layer of steel wire	Ф3.2	16
The second layer of steel wire	Ф3.6	20
Outer sheath	Φ35	





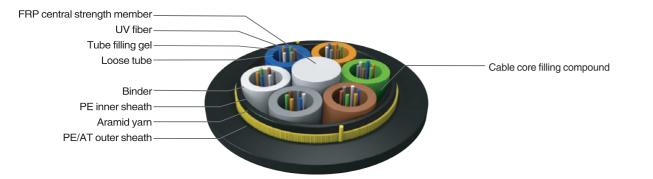


### **ADSS**

- · 6-288 colored fibers
- · Loose tube gel-filled construction
- Fiber Reinforced Plastic central strength member. *Applications:*
- · Outdoor aerial self-supporting installation
- Long-distance communication, local trunk line, CATV and computer networks system
- Telecom and campus outside plant backbone applications
- Ethernet LAN Network as CCTV and Network Camera.

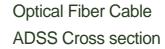
#### Features:

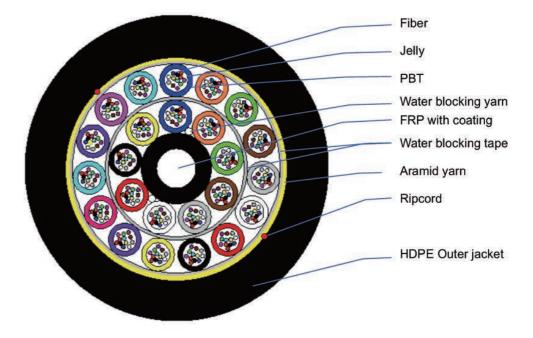
- Loose tube construction for good moisture-resistant
- Nonconductive construction providing excellent electric isolation
- Fiber Reinforce Plastic providing excellent tensile resistance and good fiber protection
- Sufficient high modulus aramid yarn overall strength member requiring no messenger wire for self-support.

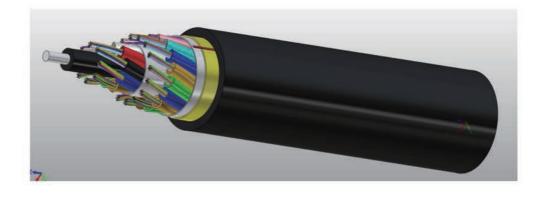


### Performance:

Temperature	Minimum Bend Radius	Options	
Storage-40°C to 70°CInstallation-30°C to 60°COperating-40°C to 70°C	20 × ND—Installation 10 × ND—In-service	Largest span over 1200m.	







### Cable Characteristics:

Amount of fiber	Max. no. of the Fiber per Tube	Number of Tube Positions	Diameter (Appr.) mm	Weight (Appr.) Kg/km
12	12	1.7	13.3	137
48	12	1.7	13.3	137
96	12	1.7	14.9	180
288	12	1.7	21.2	331

\*Note: The minimum thickness of the outer jacket is 1.5mm.

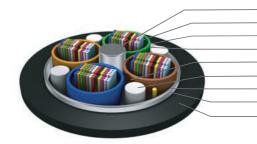






### Stranded Single Sheath Ribbon Cable

- 4-fiber ribbon, 6-fiber ribbon, 8-fiber ribbon, 12-fiber ribbon available
- · Loose tube gel-filled construction
- Fiber Reinforced Plastic central strength member *Applications:*
- Inter-building voice or data communication backbones
- Installed in ducts, underground conduits and aerial. *Features:*
- Loose tube construction for water blocking protection
- Nonconductive construction for excellent electric isolation
- Fiber Reinforce Plastic providing excellent tensile resistance.



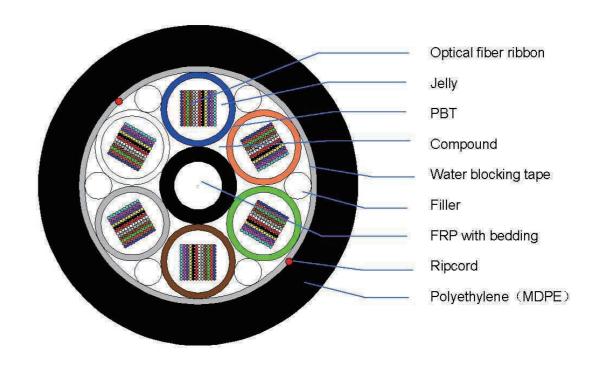
Central strength member Fiber ribbon Tube filling gel Loose tube Cable core filling compound Filler(optional) Binder&Additional Aluminum tape armor PE outer sheath

### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance	
Storage-40°C to 70°CInstallation-30°C to 60°COperating-40°C to 70°C		Short term 1000 N/100mm Long term 300 N/100mm	
Options	Flame-retardant sheath like Low Smoke Zero H Corrugated steel tape armor available upon r	· · ·	

### 200µm mini-fiber for 864-core Spe is less than an inch, 0.9094 inch.

Optical Fiber Cable Cross section



### Cable Characteristics:

Amount of Fiber	Product Type	Ribbon per Tube	Fibers per Ribbon	Number of Tube Positions	Numbers of Active Tubes	Diameter(Appr.) mm	Weight(Appr.) Kg/Km
864	Dielectric	12	12	6	6	23.1	435
1728	Dielectric	12	24	6	6	40.2	1170

Navigat®r

200µm mini-fiber for 864-core Special Loose Tube Ribbon Cable diameter



### ADSS Mini Cable

- 2-12 colored fibers
- Loose tube gel-filled construction
- Fiber Plastic Reinforced strength member
- UV- and moisture-resistant PE sheath.

#### **Applications:**

- Broadband network
- · Installed in ducts and aerial
- FTTX.

#### Features:

- · Loose tube gel-filled construction for good moisture-resistant and water blocking protection
- · Nonconductive sheath and central strength member providing excellent electric isolation
- Fiber Reinforce Plastic stranded with loose tube providing excellent tensile resistance and good fiber protection.

# Certified by CCCC COCHRAN

## Bow Tie Shape Drop Cable

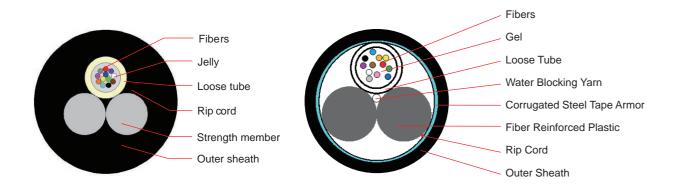
- Low bend-loss fibers
- Tight buffer construction
- · High modulus strength member
- · UV- and moisture-resistant outer sheath

#### Application:

- Broadband network
- · Installed in ducts or aerial

### Features:

- All-dry structure, user-friendly design, easy for stripping and splicing and easy for installation
- High modulus strength member providing good cable mechanical performance
- Guarantee of lifespan of 15years



### Performance:

Temperature	Minimum Bend Radius	Maximum Installation Tensile Load	Allowable Tensile Resistance
torage -20°C to 65°C Installation -20°C to 65°C Operating -10°C to 55°C	20 × ND—Installation 10 × ND—In-service	Short term 1500 N	Short term 1000 N/100 mm

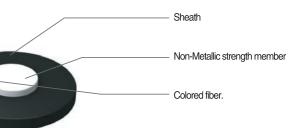
### Performance:

Temperature	Minimum Bend Radius	Allowable Tensile Load	Allowable Crush Resistance	Normal Cable Measurement	Normal Cable Weight		
Storage -30°C to 70°C Installation -30°C to 70°C Operating -30°C to 70°C	20 × ND—Installation 10 × ND—In-service	Short term 200 N Long term 100 N	Short term 2200 N/100mm Long term 1000 N/100mm	2.0 mm×3.0 mm	10Kg/Km		
Options	Flame-retardant she	Flame-retardant sheath like Low Smoke Zero Halogen material available upon request.					
Notes	Normal cable measurement determined by exterior rectangle.						





splicing and easy for installation anical performance

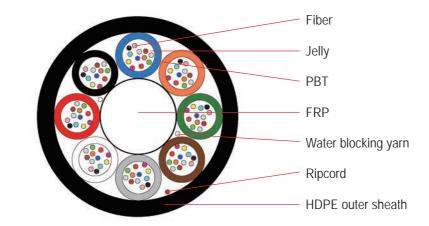




### Air-Blown Micro-Cable

### Applications:

- · Inter-building and intra-building voice and data communication backbones
- Installed in ducts, underground conduits and aerial
- Installation in cable trays and general horizontal applications. Features:
- · Ease of handling, smaller size, saving installation cost
- Excellent electric isolation and air-blown installation
- Excellent fire prevention
- · Compatible with any installation environment.



#### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance	Allowable Tensile Load
Storage -40°C to 70°C Installation -5°C to 50°C Operating -40°C to 70°C	20 × ND—Installation 10 × ND—In-service	Short term 1000 N/100mm Long term 300 N/100mm	Short term 160 N Long term 100 N

### Dimension of the cable:

Amount of fiber	Max. no. of the Fiber per Tube	No. of tube positions	Number of Active Tubes	Diameter (Appr.) mm	Weight (Appr.) Kg/km
12	12	6	0.6	6.1	29
24	12	6	0.6	6.1	29
36	12	6	0.6	6.1	30
48	12	6	0.6	6.1	30
96	12	8	0.6	7.1	46
144	12	12	0.6	9.2	73
288	24	12	0.6	11.6	110

\*Note: The minimum thickness of the sheath is 0.4mm.

Certified by COCHRAN

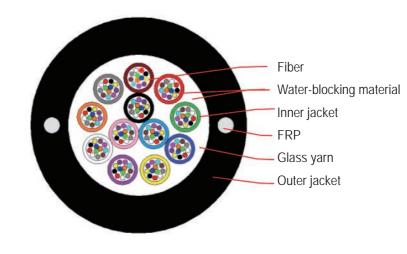
### Micro Module

### **Applications:**

- · Inter-building and intra-building voice and data communication backbones
- Installed in ducts

### Features:

- More cable cores, compact structure and small size
- Mainly used for distribution and access network
- The inner jacket can be easy to be removed with finger nails
- All dielectric structure design, without electromagnetic induction effect.



### Performance:

Temperature	Minimum Bend Radius	Allowable Crush Resistance
Storage -20°C to 60°C Installation -10°C to 40°C Operating -30°C to 60°C	10 × ND	Short term 2000 N/100mm Long term 600 N/100mm

Fibers per Tube	Cores	InnerUnit Diameter	Cable Diameter	Max Tension	Cable Weight	Outer Color
	12	1.4 ± 0.1 mm	6.3 mm ± 0.4mm	800N	30 kg/km	Black
	24	1.4 ± 0.1 mm	7.0mm ±0.4mm	800N	37 kg/km	Black
	36	1.4 ± 0.1 mm	7.7mm ±0.4mm	1000N	44 kg/km	Black
12	48	1.4 ± 0.1 mm	8.1mm ±0.4mm	1000N	50 kg/km	Black
12	72	1.4 ± 0.1 mm	9.5mm ±0.4mm	1600N	66 kg/km	Black
	96	1.4 ± 0.1 mm	10.7mm ±0.4mm	2200N	81 kg/km	Black
	144	1.4 ± 0.1 mm	11.5 mm ±0.4mm	2200N	97 kg/km	Black
	288	1.4 ± 0.1 mm	14.4 mm ±0.4mm	2700N	147kg/km	Black





### **Optical Power Ground Wire**

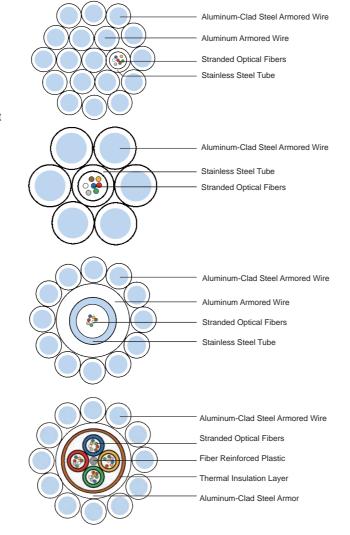
SUMEC WASIN'S OPGW cables are typically designed for optical transmission and overhead ground wire for power transmission. The cable is working in power transmission line both as optical fiber cable and overhead ground wire which can provide protection of lightning strike and conducting short circuit currency.

This consist of stainless steel tube optical unit, aluminum cladding steel wire, aluminum alloy wire. It has central stainless steel tube structure and layer stranding structure. The cable can be designed according to different environment condition and customer's requests.

### Features:

Stainless-steel optical fiber unit of central loose tube or stranding construction

Aluminum alloy wire and aluminum clad steel wire armored Coated with anticorrosive grease between layers Being able to support heavy load and long span installation Meeting requirement of ground wire's mechanical and electric requirements by adopting proportion of steel and aluminum Easy for producing accordance with existing ground wire and easy for replacing.



Catalogue Code	OPGW-60	OPGW-70	OPGW-90	OPGW-110	OPGW-130
Fiber Count	48	32	48	52	30
Normal Cable Diameter(mm)	10.5	12.0	13.0	14.0	15.0
Normal Cable Weight(Kg/Km)	415	320	374	432	527
Short-Circuit Capacity, from 40 °C to 400 °C (kA2sec)	24.0	57.3	78.9	105.8	150.4
Rated Tensile Strength(KN)	75	45	53	64	80
DC Resistance in 20 <sup>°</sup> C (Ω/Km)	1.36	0.524	0.448	0.386	0.327

### American Team



### America Main Markets



#### USA Warehouse

