

Membranes

Coaxial Cables

FA Cables

Hybrid Cables

Military Cables

Submarine Cables

# **KIMS UBQ**



*KIMSUBQ.Co.,Ltd.*

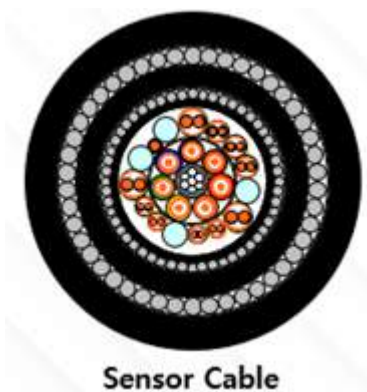


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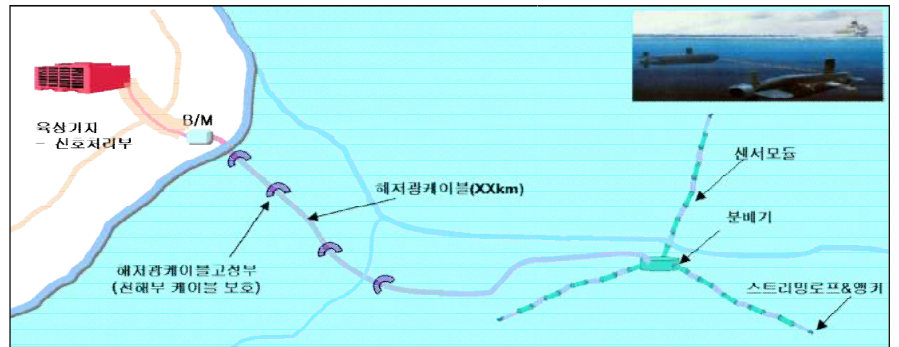
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# Submarine Cable

## > Harbor Underwater Surveillance System for Military



## HARBOR UNDERWATER SURVEILLANCE SYSTEM FOR MILITARY SUBMARINES



## HARBOR SURVEILLANCE SYSTEM PROJECT



OPTICAL & ELECTRICAL COMPOSITION CABLE FOR SUBMARINE



ACOUSTIC INFORMATION SENSOR CABLE

## UNDERWATER SENSOR CABLE FOR NAIMS PROJECT



ACOUSTIC INFORMATION SENSOR CABLE

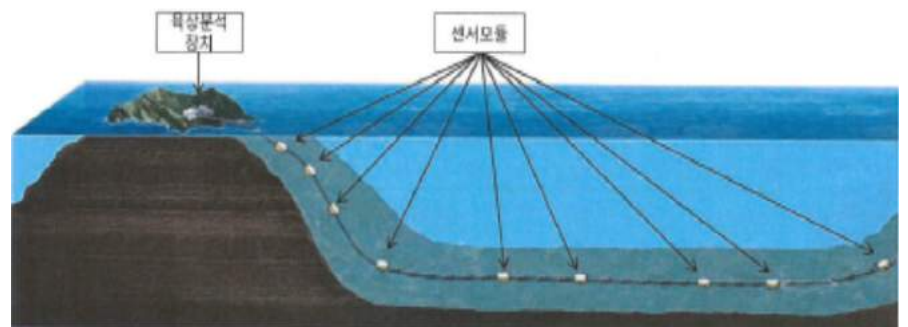
# Submarine Cable

## MULTI-PURPOSE MARINE SURVEILLANCE SYSTEM

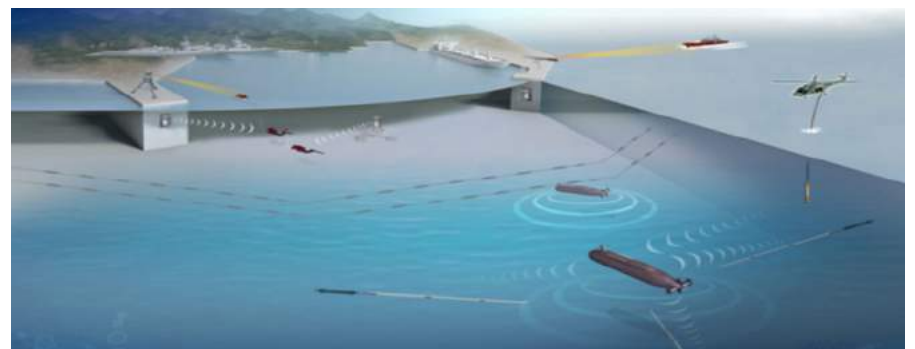
### REAL-TIME OCEAN SURVEILLANCE OPERATION SYSTEM USING OCEAN SENSOR CABLE



### WAVE HEIGHT AND WATER TEMPERATURE SENSOR CABLE



### NUCLEAR SURVEILLANCE SYSTEM



# Submarine Cable

## > Towing Cable Towed Array Sonar Cable

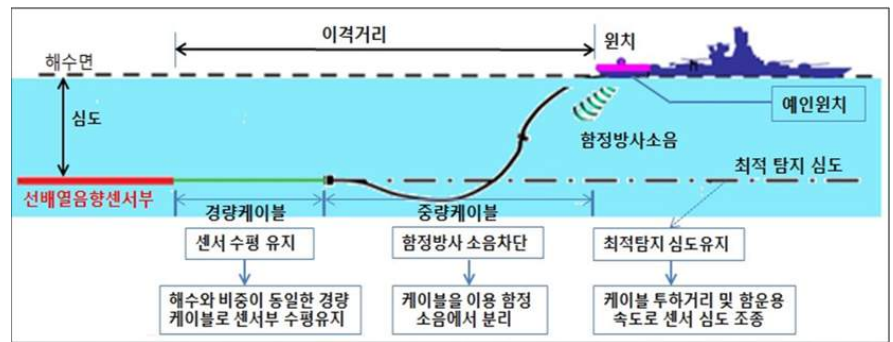


Heavy Towing Cable



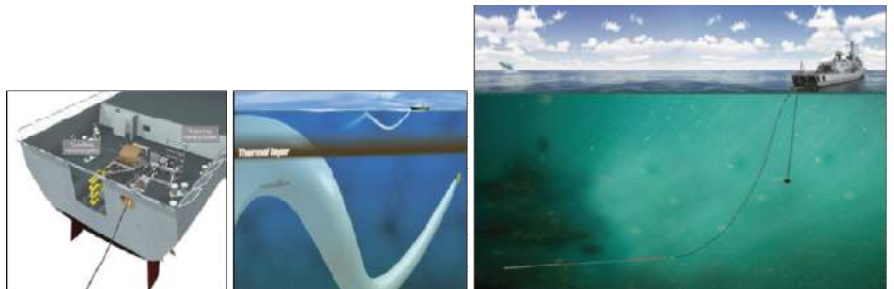
Light Towing Cable

### TOWING CABLE ASSEMBLY (HEAVY AND LIGHT CABLES)



HEAVY AND LIGHT TOWING CABLE CONECTOR

### ACTIVE-PASIVETOWING CABLE ASSEMBLY IN OPTICAL COMMUNICATION SYSTEM FOR SONAR



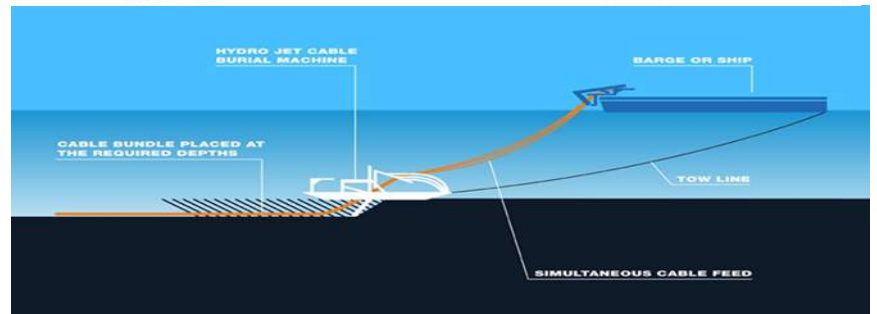
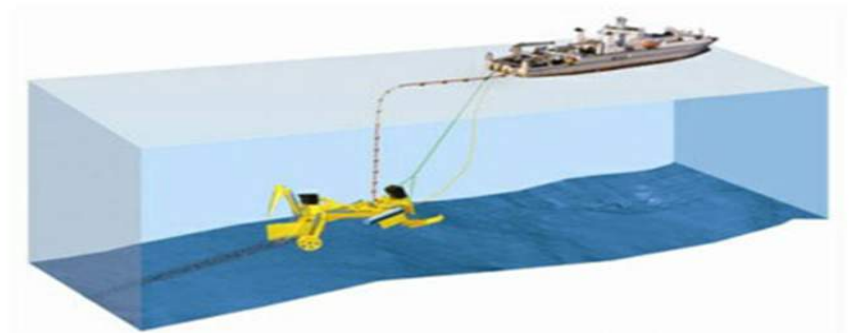
### TOWING CABLE FAIRING -DRAG REDUCTION EFFECT



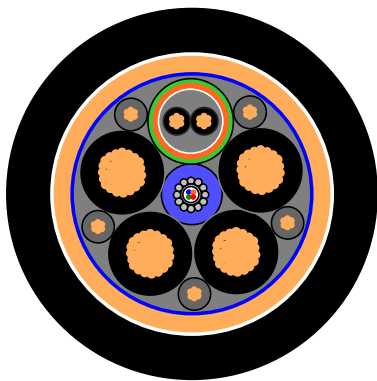
# Submarine Cable

## > Umbilical Cable

### UMBILICAL CABLE ASSEMBLY



### UMBILICAL CABLE ASSEMBLY FOR ROV



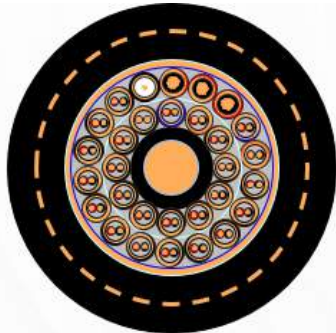
Crabster Cable

### TETHERED DRONE

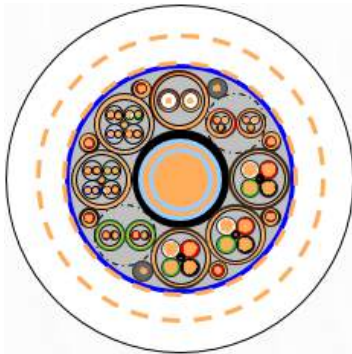


# Submarine Cable

## > Buoy Project



K-Type Umbilical Cable



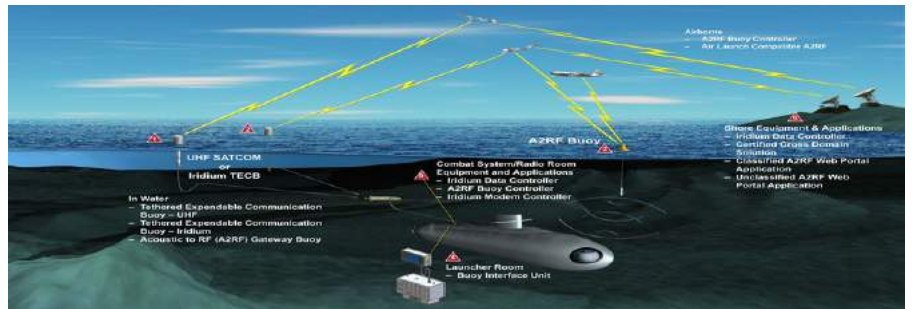
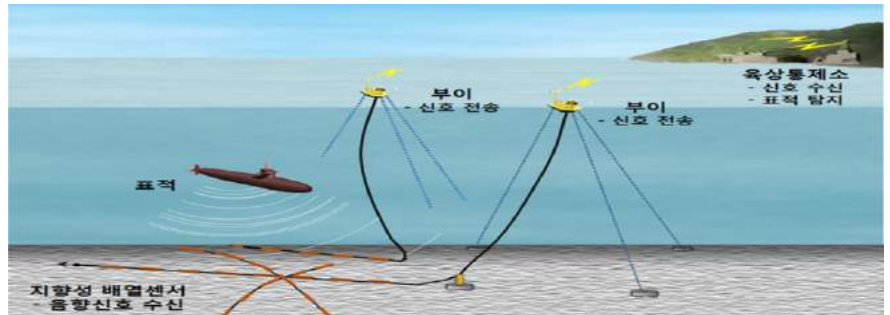
Buoy Sensor Umbilical Cable



Buoy Backbone Umbilical Cable

## BOUY TYPE MILITARY SUBMARINE CABLE

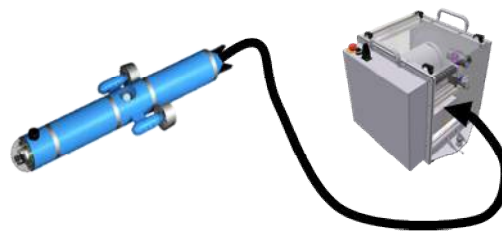
## BOUY TYPE UNDERWATER SURVEILLANCE CABLE ASSEMBLY



## MINE REMOVAL SYSTEM CABLE ASSEMBLY



- ✓ 소해함의 음탐기 이용 기뢰탐지 시 기뢰제거 수단으로 운용
- ✓ 수중위치인식시스템과 소해함 음탐기에 의하여 운용관술에 전시되는 ROV의 위치확인
- ✓ 운용자가 기뢰 수경 플레 근처까지 조종하여 정밀 유도
- ✓ 운용자가 기뢰제거처리기(ROV)의 카메라를 통해 기뢰 식별 후 탄두부의 신관을 각동시켜 자폭으로 기뢰 제거
- ※ 기뢰 미식별 시 기뢰제거처리기(ROV) 회수 및 정비(출진) 후 재 사용





# Military Cable

> Cables for guided weapon

Cables for track vehicle

Cables for antenna

Power cables

Cables for engine

Signal cables

Cables for radar

## CABLES FOR MILITARY AND DEFENSE

### CABLES FOR ARMY APPLICATION



### CABLES FOR ARMY APPLICATION



MIL-DTL-25471

MIL-DTL-27110

MIL-DTL-3702

### CABLES FOR ARMY APPLICATION



DEF-STAN 61-12 PART 25

MIL-DTL-24643 / 3 (US)

NES 526 (EU)

NES 527 (EU)

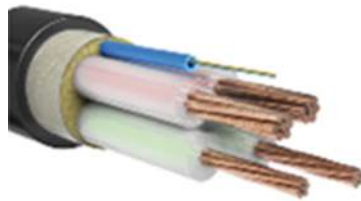
### DEFENSE SPECIALTY CABLES



# Hybrid Cable

- > > Optical & Power
- > Optical & LAN

0.6/1KV CROSSLINKED POLYETHYLENE INSULATED POWER & OPTICAL FIBER CABLE



[2+2G]



[2+1G]

Controls the internal and external network of the building, and transmits electricity and data to one line with optical and power hybrid cable



It is convenient to connect power line by installing optical and power hybrid cable in base station network



It is easy to install power lines and data lines in a wide factory and transmits electricity and data in one line



# Factory Automation Cables

> Shield & Non  
Shield Control  
Cables for Industrial  
Equipment



Control Cable



Signal Cable



Power cable



Low speed power chain cable

SHIELD & NON SHIELED CONTROL CABLES FOR INDUSTRIAL  
EQUIPMENT



SHIELD & NON SHIELED SIGNAL CABLES FOR INDUSTRIAL  
EQUIPMENT



SHIELD & NON SHIELED POWER CABLES FOR INDUSTRIAL  
EQUIPMENT



LOW SPEED POWER CHAIN CABLES FOR INDUSTRIAL EQUIPMENT



## Coaxial Cables

Coaxial cables are the critical systems component used for transmission of high frequency signals, requiring careful choice of materials and sophisticated production methods.

Our range of coaxial cables meet the high standards set by civil and military authorities worldwide and include MIL-C-17 standard to subminiature, triaxial and double screened coaxial cables.

Different types of coaxials are determined by the materials employed (conductors and dielectrics), the outer diameter, the characteristic impedance, the capacitance, the attenuation and the frequency range.

Coaxial cables are used in many different application fields. e.g. :

- Telecommunication equipment demanding less loss and high reliability
- Broad casting equipment : radio / television / video
- Transmission of high frequency signal
- Transport : automotive, car, plane, marine, etc.
- Various types of measuring equipment
- Computer systems
- Medical devices : scanners, imaging equipment
- Military equipment and armament systems
- Nuclear power plant
- Aerospace industry

# Flexible Coaxial Cable

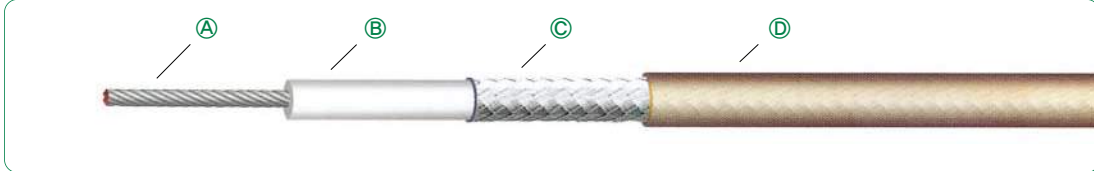


## Flexible Coaxial Cable

### Cable Type : RG-178B/U

- Specification ..... MIL-C-17/93
- Continuous working voltage ..... Max. 750Vrms
- Operating temperature range ..... -55°C ~ 200°C

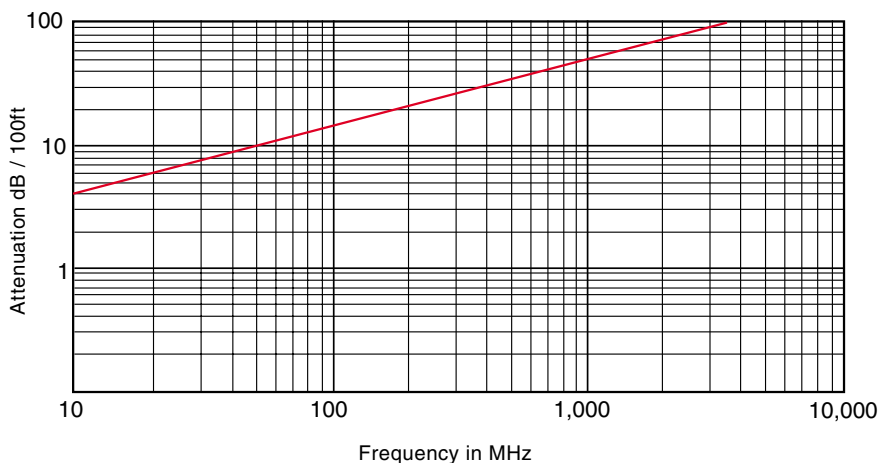
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.31mm(0.012inch)	Strand 7/0.102
Ⓑ Dielectric	PTFE(Solid)	0.84mm(0.033inch)	
Ⓒ Outer shield	SPC(Braid)	1.33mm(0.052inch)	95% Coverage
Ⓓ Jacket	FEP	1.8mm(0.071inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 3 GHz	
Conductor resistance	Max. 24.45 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	8.4 kg/km	
Nom. attenuation	9.7dB/100ft(0.32dB/m) 14.0dB/100ft(0.46dB/m) 20.2dB/100ft(0.66dB/m) 29.6dB/100ft(0.97dB/m) 33.6dB/100ft(1.10dB/m) 37.2dB/100ft(1.22dB/m) 43.9dB/100ft(1.44dB/m) 47.0dB/100ft(1.54dB/m) 50.0dB/100ft(1.64dB/m)	at 50MHz at 100MHz at 200MHz at 400MHz at 500MHz at 600MHz at 800MHz at 900MHz at 1GHz

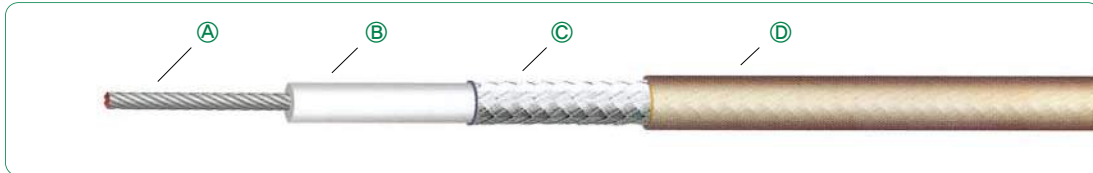


## Flexible Coaxial Cable

### Cable Type : RG-180

- Specification ..... MIL-C-17/95
- Continuous working voltage ..... Max. 1100Vrms
- Operating temperature range ..... -55°C ~ 200°C

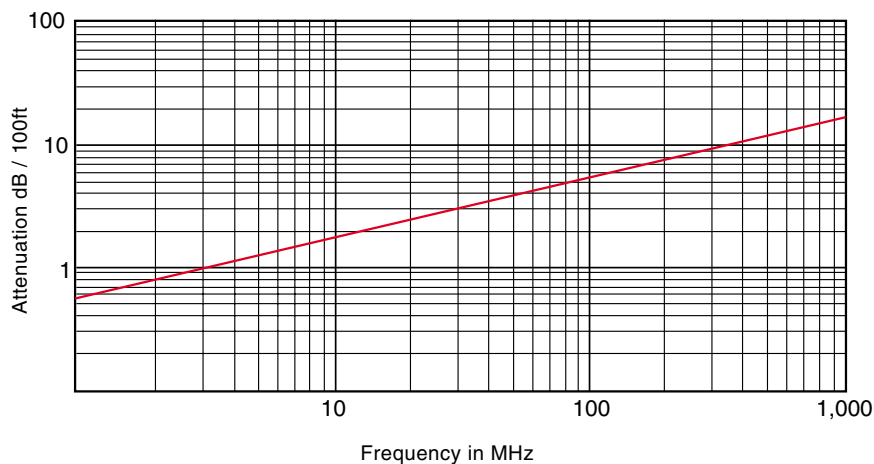
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.31mm(0.012inch)	Strand 7/0.102
Ⓑ Dielectric	PTFE(Solid)	2.59mm(0.102inch)	
Ⓒ Outer shield	SPC(Braid)	3.05mm(0.120inch)	95% Coverage
Ⓓ Jacket	FEP	3.58mm(0.141inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 3 GHz	
Conductor resistance	Max. 24.45 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 17.4 pF/ft	
Characteristic impedance	95 ± 5Ω	
Approx. weight	27.3 kg/km	
Nom. attenuation	3.3dB/100ft(0.11dB/m)	at 10MHz
	4.6dB/100ft(0.15dB/m)	at 50MHz
	5.7dB/100ft(0.19dB/m)	at 100MHz
	7.6dB/100ft(0.25dB/m)	at 200MHz
	10.7dB/100ft(0.35dB/m)	at 400MHz
	14.9dB/100ft(0.49dB/m)	at 700MHz
	15.9dB/100ft(0.52dB/m)	at 900MHz
	17.0dB/100ft(0.56dB/m)	at 1GHz

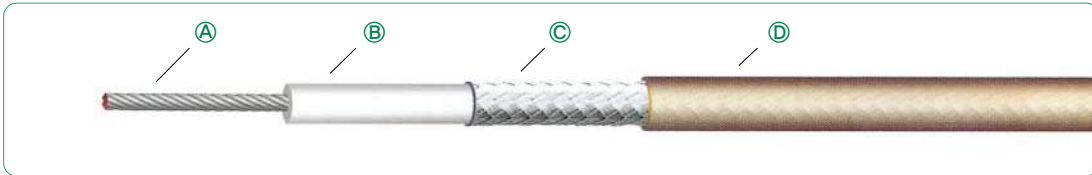


## Flexible Coaxial Cable

### Cable Type : RG-179B/U

- Specification ..... MIL-C-17/94
- Continuous working voltage ..... Max. 900Vrms
- Operating temperature range ..... -55°C ~ 200°C

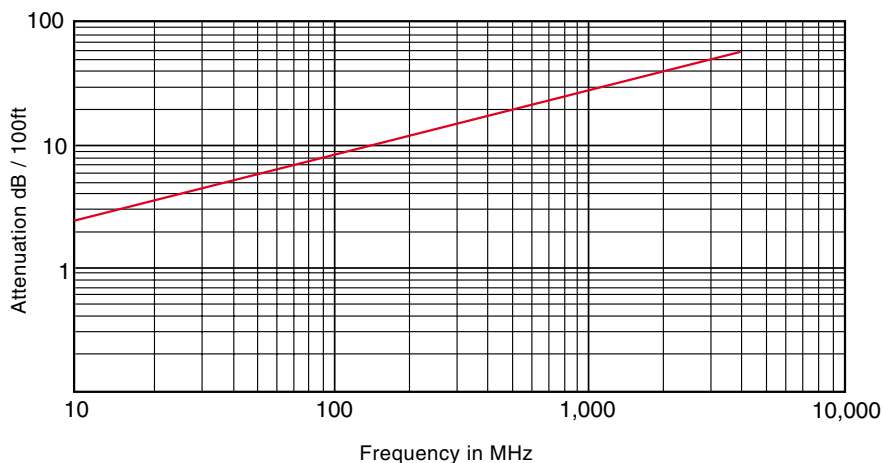
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.31mm(0.012inch)	Strand 7/0.102
Ⓑ Dielectric	PTFE(Solid)	1.55mm(0.061inch)	
Ⓒ Outer shield	SPC(Braid)	2.00mm(0.079inch)	94% Coverage
Ⓓ Jacket	FEP	2.54mm(0.1inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 3 GHz	
Conductor resistance	Max. 24.45 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 23 pF/ft	
Characteristic impedance	75 ± 3 Ω	
Approx. weight	14.8 kg/km	
Nom. attenuation	5.7dB/100ft(0.19dB/m)	at 50MHz
	8.2dB/100ft(0.27dB/m)	at 100MHz
	11.7dB/100ft(0.38dB/m)	at 200MHz
	17.0dB/100ft(0.56dB/m)	at 400MHz
	19.1dB/100ft(0.63dB/m)	at 500MHz
	21.1dB/100ft(0.69dB/m)	at 600MHz
	24.7dB/100ft(0.81dB/m)	at 800MHz
	26.3dB/100ft(0.86dB/m)	at 900MHz
	27.9dB/100ft(0.92dB/m)	at 1GHz



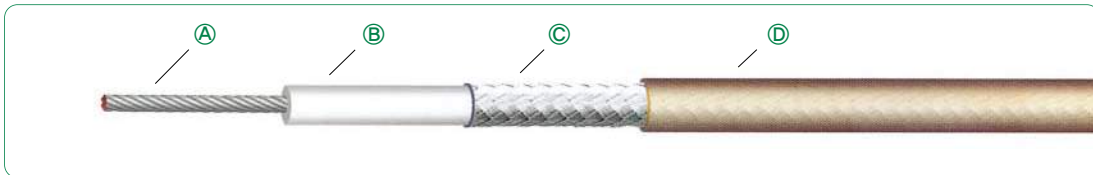


## Flexible Coaxial Cable

### Cable Type : RG-316(Single Shielded Type)

- Specification ..... MIL-C-17/113
- Continuous working voltage ..... Max. 900Vrms
- Operating temperature range ..... -55°C ~ 200°C

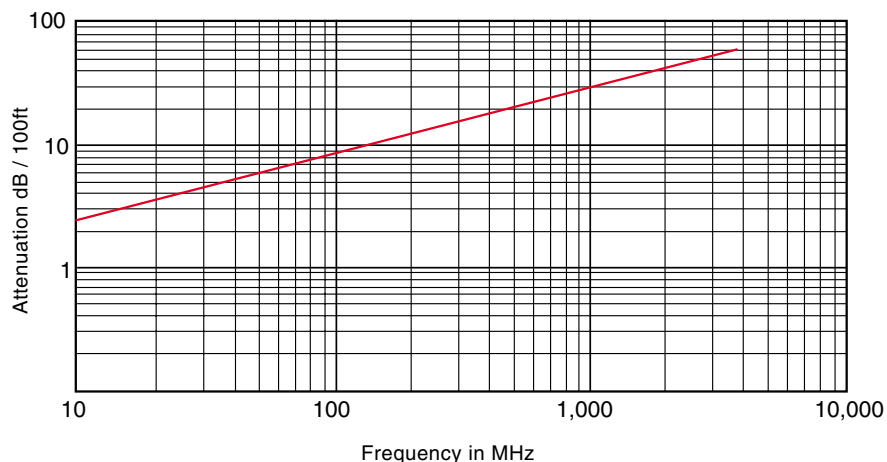
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.51mm(0.02inch)	Strand 7/0.17
Ⓑ Dielectric	PTFE(Solid)	1.52mm(0.06inch)	
Ⓒ Outer shield	SPC(Braid)	2.0mm(0.079inch)	95% Coverage
Ⓓ Jacket	FEP	2.5mm(0.098inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 3 GHz	
Conductor resistance	Max. 8.41 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	16.0 kg/km	
Nom. attenuation	5.4dB/100ft(0.18dB/m)	at 50MHz
	7.7dB/100ft(0.25dB/m)	at 100MHz
	11.1dB/100ft(0.36dB/m)	at 200MHz
	16.1dB/100ft(0.53dB/m)	at 400MHz
	18.1dB/100ft(0.59dB/m)	at 500MHz
	20.0dB/100ft(0.66dB/m)	at 600MHz
	23.5dB/100ft(0.77dB/m)	at 800MHz
	25.0dB/100ft(0.82dB/m)	at 900MHz
	26.5dB/100ft(0.87dB/m)	at 1GHz

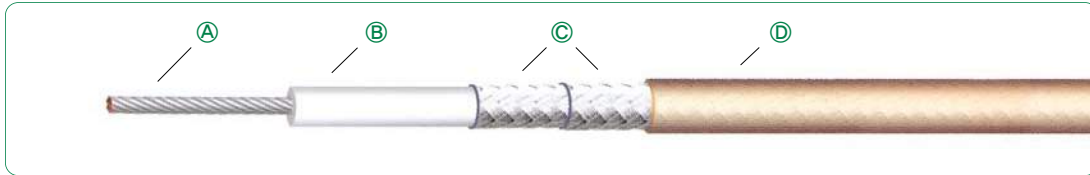


## Flexible Coaxial Cable

### Cable Type : RG-316(Double Shielded Type)

- Specification ..... MIL-C-17/152
- Continuous working voltage ..... Max. 900Vrms
- Operating temperature range ..... -55°C ~ 200°C

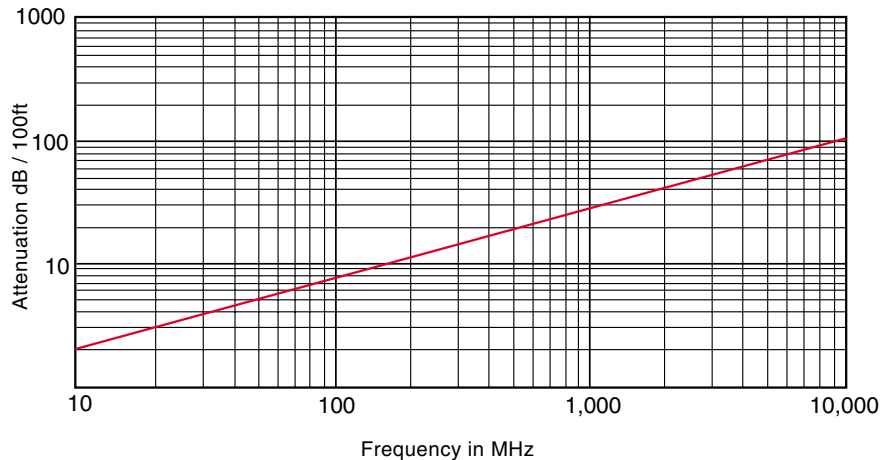
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.51mm(0.02inch)	Strand 7/0.17
Ⓑ Dielectric	PTFE(Solid)	1.52mm(0.061inch)	
Ⓒ Inner shield	SPC(Braid)	2.0mm(0.079inch)	93% Coverage
Outer shield	SPC(Braid)	2.4mm(0.094inch)	95% Coverage
Ⓓ Jacket	FEP	2.9mm(0.114inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 12.4 GHz	
Conductor resistance	Max. 8.41 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	23.0 kg/km	
Nom. attenuation	5.1dB/100ft(0.17dB/m) 23.1dB/100ft(0.76dB/m) 34.2dB/100ft(1.12dB/m) 59.0dB/100ft(1.94dB/m)	at 50MHz at 500MHz at 1GHz at 3GHz

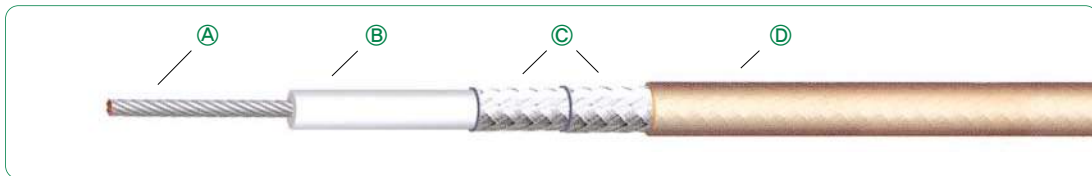


## Flexible Coaxial Cable

### Cable Type : RG-400/U

- Specification ..... MIL-C-17/128
- Continuous working voltage ..... Max. 1400Vrms
- Operating temperature range ..... -55°C ~ 200°C

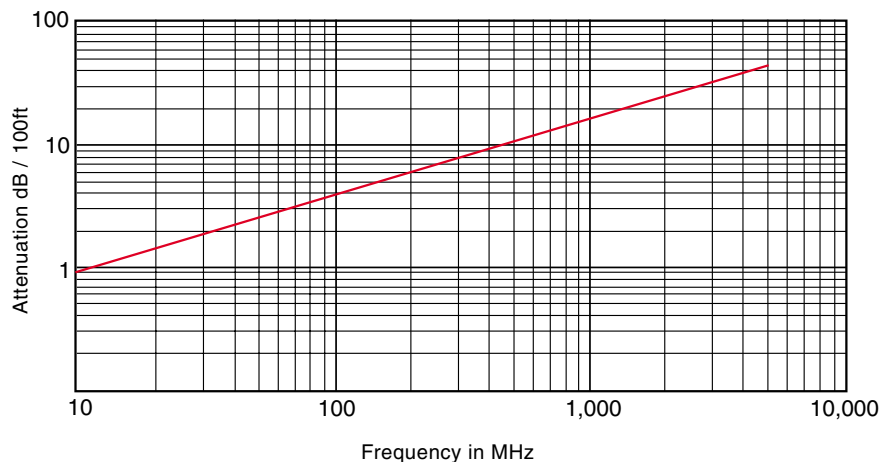
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPC	1.00mm(0.039inch)	Strand 19/0.203
Ⓑ Dielectric	PTFE(Solid)	2.95mm(0.116inch)	
Ⓒ Inner shield	SPC(Braid)	3.60mm(0.142inch)	97% Coverage
Outer shield	SPC(Braid)	4.20mm(0.165inch)	94% Coverage
Ⓓ Jacket	FEP	4.95mm(0.195inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 12.4 GHz	
Conductor resistance	Max. 0.91 $\Omega$ /100ft	at 20°C
Dielectric resistance	Min. 1000 $M\Omega$ .km	at 20°C
Test voltage	3000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 $\pm$ 2 $\Omega$	
Approx. weight	64.0 kg/km	
Nom. attenuation	2.8dB/100ft(0.09dB/m) 4.0dB/100ft(0.13dB/m) 9.8dB/100ft(0.32dB/m) 14.7dB/100ft(0.48dB/m) 22.4dB/100ft(0.73dB/m) 29.0dB/100ft(0.95dB/m) 40.6dB/100ft(1.33dB/m)	at 50MHz at 100MHz at 500MHz at 1GHz at 2GHz at 3GHz at 5GHz

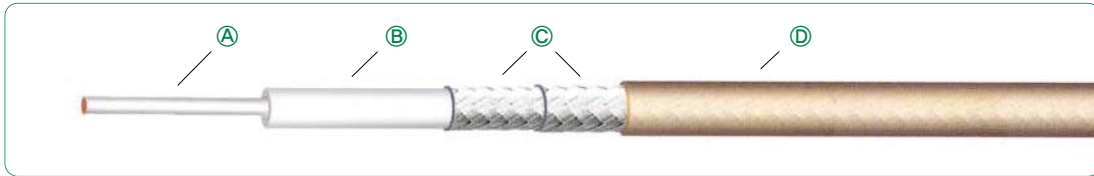


## Flexible Coaxial Cable

### Cable Type : RG-142B/U

- Specification ..... MIL-C-17/60
- Continuous working voltage ..... Max. 1400Vrms
- Operating temperature range ..... -55°C ~ 200°C

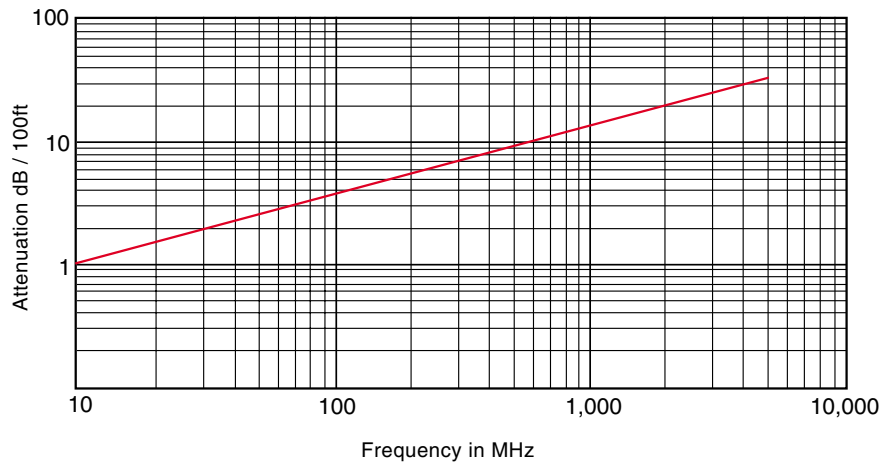
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.94mm(0.037inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	2.95mm(0.116inch)	
Ⓒ Inner shield	SPC(Braid)	3.60mm(0.142inch)	97% Coverage
Outer shield	SPC(Braid)	4.25mm(0.167inch)	94% Coverage
Ⓓ Jacket	FEP	4.95mm(0.195inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 12.4 GHz	
Conductor resistance	Max. 2.06 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Nom. 29.3 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	64.0 kg/km	
Nom. attenuation	2.7dB/100ft(0.09dB/m)	at 50MHz
	3.9dB/100ft(0.13dB/m)	at 100MHz
	9.4dB/100ft(0.31dB/m)	at 500MHz
	13.8dB/100ft(0.45dB/m)	at 1GHz
	20.8dB/100ft(0.68dB/m)	at 2GHz
	26.6dB/100ft(0.87dB/m)	at 3GHz
	36.6dB/100ft(1.20dB/m)	at 5GHz



## Flexible Coaxial Cable

### Cable Type : RG-303

- Specification ..... MIL-C-17/111
- Continuous working voltage ..... Max. 1400Vrms
- Operating temperature range ..... -55°C ~ 200°C

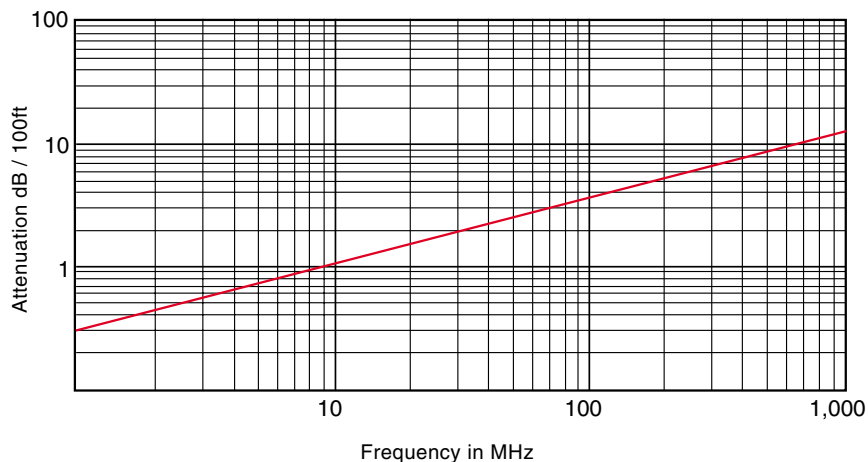
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.94mm(0.037inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	2.95mm(0.116inch)	
Ⓒ Outer shield	SPC(Braid)	3.53mm(0.139inch)	95% Coverage
Ⓓ Jacket	FEP	4.32mm(0.17inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 3 GHz	
Conductor resistance	Max. 2.06 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	45.1 kg/km	
Nom. attenuation	1.1dB/100ft(0.04dB/m)	at 10MHz
	2.7dB/100ft(0.09dB/m)	at 50MHz
	3.9dB/100ft(0.13dB/m)	at 100MHz
	5.6dB/100ft(0.18dB/m)	at 200MHz
	8.2dB/100ft(0.27dB/m)	at 400MHz
	11.0dB/100ft(0.36dB/m)	at 700MHz
	12.5dB/100ft(0.41dB/m)	at 900MHz
	13.5dB/100ft(0.44dB/m)	at 1GHz

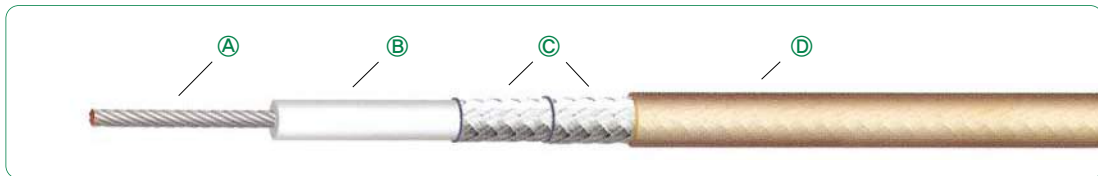


## Flexible Coaxial Cable

### Cable Type : RG-393/U

- Specification ..... MIL-C-17/127
- Continuous working voltage ..... Max. 1875Vrms
- Operating temperature range ..... -55°C ~ 200°C

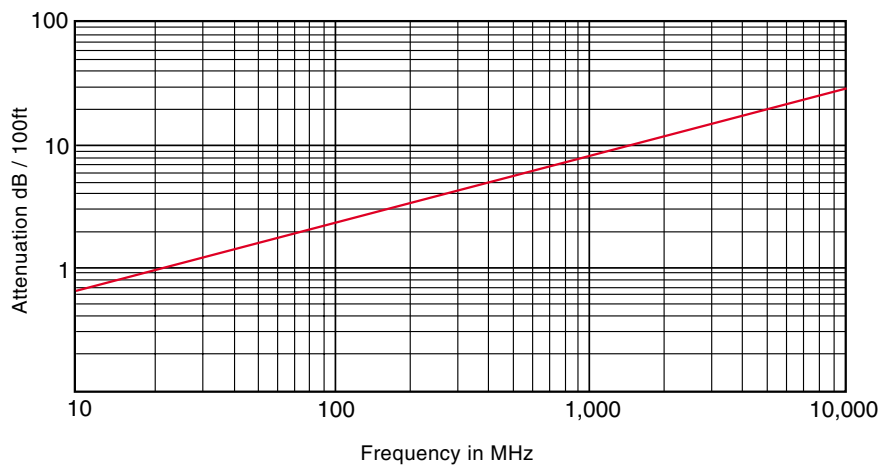
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPC	2.40mm(0.094inch)	Strand 7/0.8
Ⓑ Dielectric	PTFE(Solid)	7.24mm(0.285inch)	
Ⓒ Inner shield	SPC(Braid)	8.00mm(0.315inch)	92% Coverage
Outer shield	SPC(Braid)	8.75mm(0.344inch)	94% Coverage
Ⓓ Jacket	FEP	9.90mm(0.39inch)	Light Brown Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 11 GHz	
Conductor resistance	Max. 0.152 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	7500Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	240 kg/km	
Max. attenuation	1.7dB/100ft(0.06dB/m)	at 50MHz
	2.4dB/100ft(0.08dB/m)	at 100MHz
	5.0dB/100ft(0.16dB/m)	at 400MHz
	8.8dB/100ft(0.29dB/m)	at 1GHz
	18.0dB/100ft(0.59dB/m)	at 3GHz

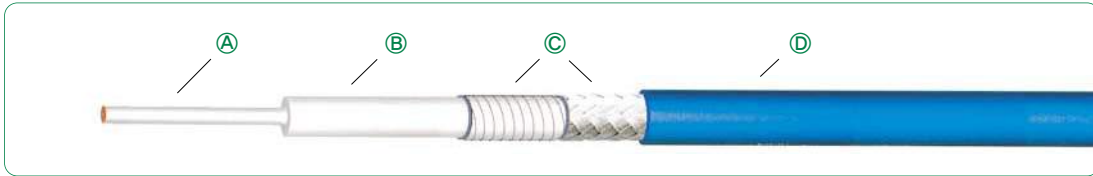


## Flexible Coaxial Cable

### Cable Type : RG-405(Spiral Strip Shield Type)

- Specification ..... MIL-C-17/133
- Continuous working voltage ..... Max. 1500Vrms
- Operating temperature range ..... -55°C ~ 200°C

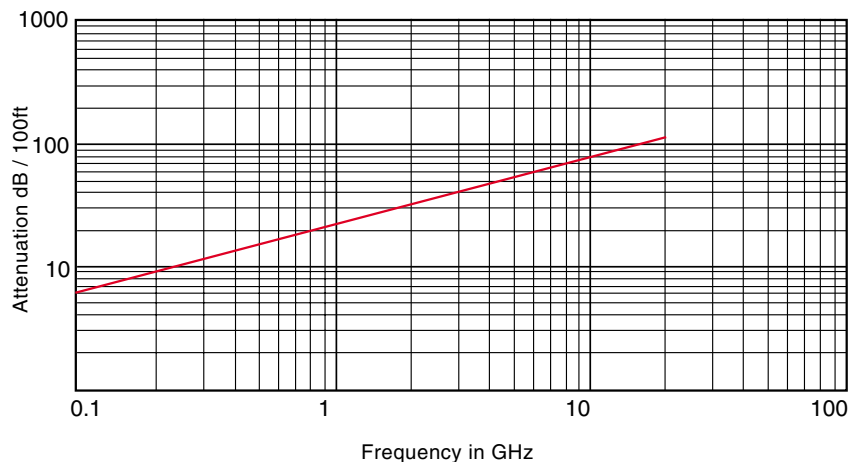
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.511mm(0.02inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	1.63mm(0.064inch)	
Ⓒ Inner shield	SPC(Tape)	1.80mm(0.071inch)	100% Coverage
Outer shield	SPC(Braid)	2.18mm(0.086inch)	97% Coverage
Ⓓ Jacket	FEP	2.64mm(0.104inch)	Sky Blue Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.57 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	19.1 kg/km	
Max. attenuation	14.0dB/100ft(0.46dB/m)	at 400MHz
	22.0dB/100ft(0.72dB/m)	at 1GHz
	39.0dB/100ft(1.28dB/m)	at 3GHz
	50.0dB/100ft(1.64dB/m)	at 5GHz
	80.0dB/100ft(2.62dB/m)	at 10GHz
	110.0dB/100ft(3.61dB/m)	at 18GHz



## Flexible Coaxial Cable

### Cable Type : RG-402(Spiral Strip Shield Type)

- Specification ..... MIL-C-17/130
- Continuous working voltage ..... Max. 1900Vrms
- Operating temperature range ..... -55°C ~ 200°C

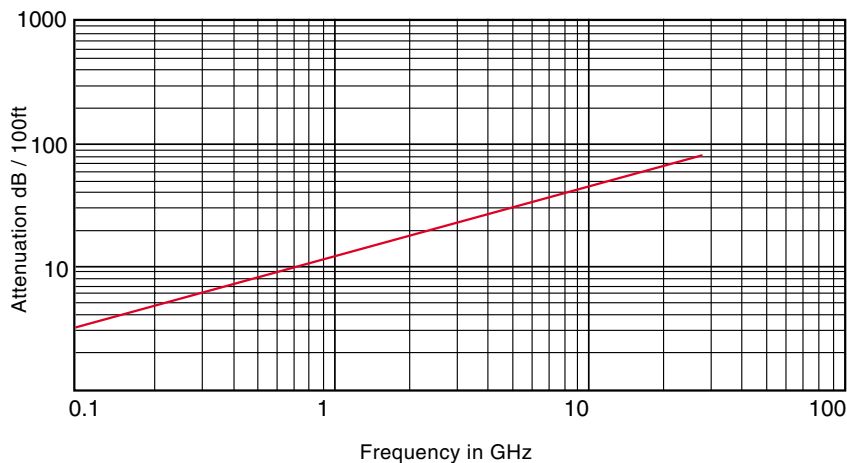
#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.92mm(0.036inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	2.97mm(0.117inch)	
Ⓒ Inner shield	SPC(Tape)	3.25mm(0.128inch)	100% Coverage
Outer shield	SPC(Braid)	3.58mm(0.141inch)	97% Coverage
Ⓓ Jacket	FEP	4.14mm(0.163inch)	Sky Blue Color

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.06 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 29.9 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	43.6 kg/km	
Max. attenuation	8.0dB/100ft(0.26dB/m) 12.0dB/100ft(0.39dB/m) 21.0dB/100ft(0.69dB/m) 29.0dB/100ft(0.95dB/m) 45.0dB/100ft(1.48dB/m) 64.0dB/100ft(2.10dB/m)	at 400MHz at 1GHz at 3GHz at 5GHz at 10GHz at 18GHz



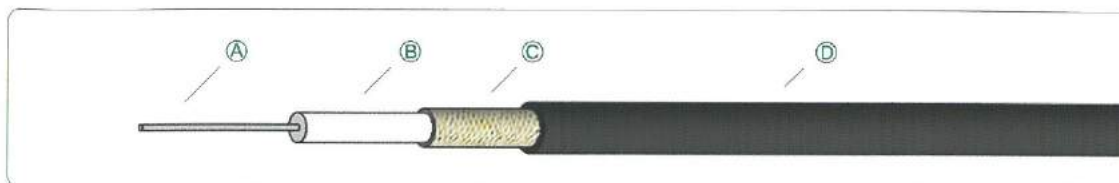


## Flexible Coaxial Cable

### Cable Type : RG-58

- Specification ----- MIL-C-17F/28
- Continuous Working Voltage ----- 1,400 Vrms
- Operating temperature range ----- -40°C ~ +85°C

#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	Tinned Copper	1.26mm	19 / 0.18mm
Ⓑ Dielectric	Solid Polyethylene	2.95mm	
Ⓒ Outer shield	Tinned Copper Braid	3.45mm	95% Coverage
Ⓓ Jacket	PVC	4.95mm	Black

#### Electrical Data

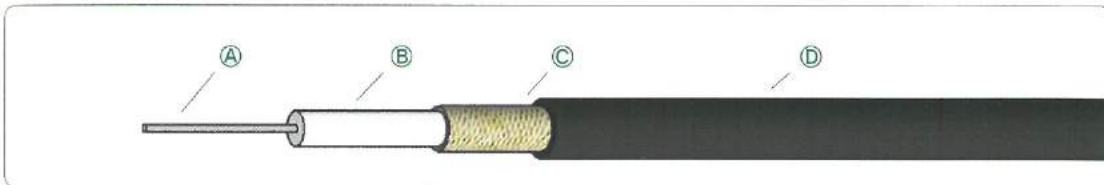
Item	Specification	Remark
Operating frequency	Max. 1.0 GHz	
Conductor resistance	Max. 14.94 Ω /kft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	
Test voltage	5,000 Vrms	
Velocity of propagation	Nom. 66%	
Capacitance	29.56 pF/ft	
Characteristic impedance	50 ± 3Ω	
Approx. weight	39 kg/km	
Nom.attenuation	13.1 dB/100m	at 50MHz
	55.77 dB/100m	at 400MHz

## Flexible Coaxial Cable

### Cable Type : RG-59

- Specification ----- MIL-C-17/29C
- Continuous Working Voltage ----- 1,700 Vrms
- Operating temperature range ----- -40°C ~ +85°C

#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	Tinned Copper	0.58mm	
Ⓑ Dielectric	Solid Polyethylene	3.71mm	
Ⓒ Outer shield	Tinned Copper Braid	4.35mm	95%Coverage
Ⓓ Jacket	PVC	6.15mm	Black

#### Electrical Data

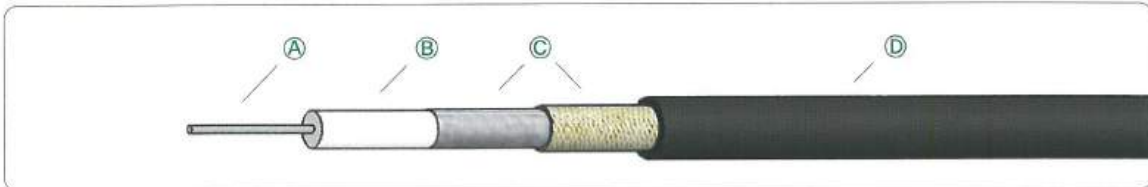
Item	Specification	Remark
Operating frequency	Max. 1.0 GHz	
Conductor resistance	Max. 56 Ω /kft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	
Test voltage	7,000 Vrms	
Velocity of propagation	Nom. 66%	
Capacitance	20.5 pF/ft	
Characteristic impedance	75 ± 3Ω	
Approx. weight	57 kg/km	
Nom.attenuation	0.426 dB/100m	at 10MHz
	4.721 dB/100m	at 50MHz
	7.720 dB/100m	at 150MHz
	9.888 dB/100m	at 250MHz
	11.709 dB/100m	at 350MHz
	13.700 dB/100m	at 450MHz
	18.500 dB/100m	at 750MHz
	20.351 dB/100m	at 900MHz
	22.529 dB/100m	at 1000MHz

## Flexible Coaxial Cable

### Cable Type : FPM316

- Specification----- JIS C3501
- Operating temperature range ----- -20℃ ~ +65℃

#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	Tin Coated Copper	0.46mm	
Ⓑ Dielectric	Solid Polyethylene	1.52mm	
Ⓒ Inner shield	AL-Mylar Tape	1.57mm	
Outer shield	Tin Coated Copper Braid	2.18mm	95%Coverage
Ⓓ Jacket	PVC	2.80mm	Black

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 3.0 GHz	
Conductor resistance	Max. 52 Ω /km	at 20℃
Test voltage	2,000 Vrms	
Velocity of propagation	Nom. 67%	
Capacitance	25 pF/m	at 1kHz
Characteristic impedance	50 ± 3Ω	
Nom. attenuation	33 dB/km	at 10MHz

## Flexible Coaxial Cable

### Cable Type : 1.5DS-QEHB

- Specification ----- JIS C3501
- Operating temperature range ----- -20°C ~ +85°C

#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	Tin Coated Copper	0.54mm	7 / 0.18mm
Ⓑ Dielectric	XLPE	1.60mm	
Ⓒ Inner shield	AL-Mylar Tape	1.65mm	t = 0.025mm
Outer shield	Tin Coated Copper Braid	2.06mm	95% Coverage
Ⓓ Jacket	PVC	3.00mm	Black

#### Electrical Data

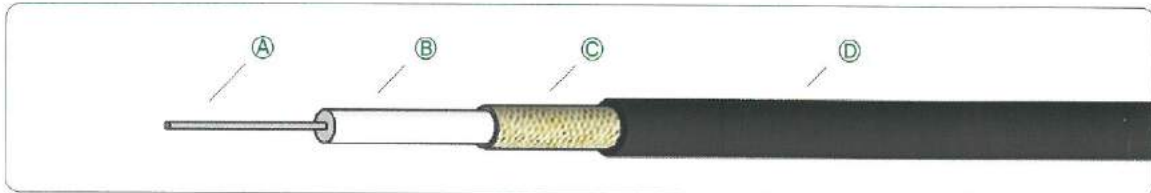
Item	Specification	Remark
Operating frequency	Max. 6.0 GHz	
Conductor resistance	Max. 120 Ω /km	at 20°C
Test voltage	1,000 Vrms	
Insulation resistance	Min 1000 MΩ/km	
Capacitance	104 nF/km	at 1kHz
Characteristic impedance	50 ± 3Ω	
Nom. attenuation	95 dB/km	at 10MHz
	145 dB/km	at 30MHz
	350 dB/km	at 200MHz
	725 dB/km	at 800MHz
	1045 dB/km	at 1500MHz
	1370 dB/km	at 2400MHz
	1450 dB/km	at 2600MHz
2450 dB/km	at 5800MHz	

## Flexible Coaxial Cable

### Cable Type : 1.5DS-QEHV

- Specification ----- JIS C3501
- Operating temperature range ----- -20°C ~ +85°C

#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	Tin Coated Copper	0.54mm	7 / 0.18mm
Ⓑ Dielectric	XLPE	1.60mm	
Ⓒ Outer shield	Tin Coated Copper Braid	2.01mm	95%Coverage
Ⓓ Jacket	PVC	3.10mm	Black

#### Electrical Data

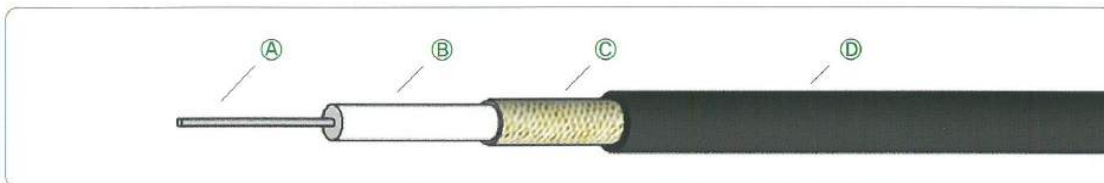
Item	Specification	Remark
Operating frequency	Max. 3.0 GHz	
Conductor resistance	Max. 120 Ω /km	at 20°C
Test voltage	1,000 Vrms	
Insulation resistance	Min 1000 MΩ/km	
Capacitance	104 nF/km	at 1kHz
Characteristic impedance	50 ± 2Ω	
Nom. attenuation	85 dB/km	at 10MHz
	155 dB/km	at 30MHz
	400 dB/km	at 200MHz
	850 dB/km	at 800MHz
	1260 dB/km	at 1500MHz
	1750 dB/km	at 2400MHz
	1850 dB/km	at 2600MHz

## Flexible Coaxial Cable

### Cable Type : 2.5C-2V

- Specification ----- JIS C3501
- Operating temperature range ----- -20°C ~ +65°C

#### Construction



Item	Material	Diameter	Remark
Ⓐ Center conductor	Bare Copper	0.54mm	
Ⓑ Dielectric	Solid Polyethylene	2.40mm	
Ⓒ Outer shield	Tin Coated Copper Braid	3.00mm	95%Coverage
Ⓓ Jacket	PVC	4.00mm	Black

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 1.0 GHz	
Conductor resistance	Max. 145 Ω /km	at 20°C
Test voltage	1,000 Vrms	
Velocity of propagation	Nom. 67%	
Capacitance	69 pF/m	at 1kHz
Characteristic impedance	75 ± 3Ω	
Nom. attenuation	16 dB/km	at 1MHz
	52 dB/km	at 10MHz
	90 dB/km	at 30MHz
	250 dB/km	at 200MHz

# Semi-Flexible Coaxial Cable



## Semi - Flexible Coaxial Cable

### Cable Type : SF-085(Semi- Flexible Type)

- Specification ..... MIL-C-17/133
- Continuous working voltage ..... Max. 1500Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

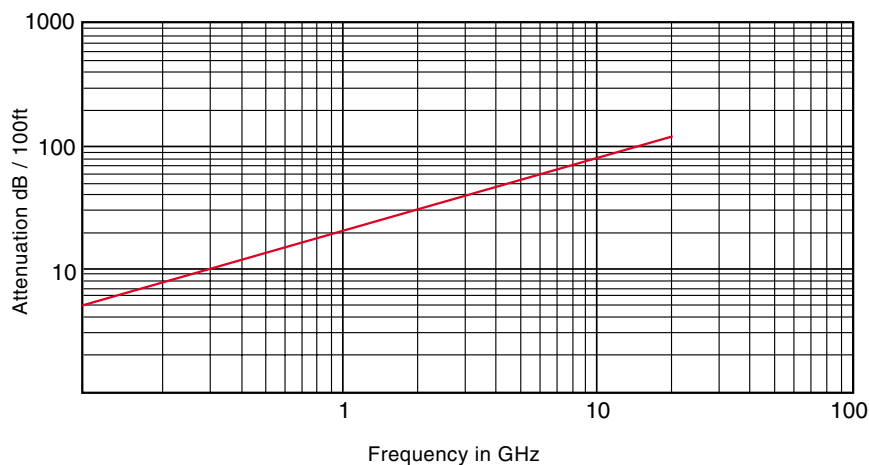


Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.511mm(0.02inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	1.68mm(0.066inch)	
Ⓒ Outer shield	TC(Braid)	2.20mm(0.087inch)	100% Coverage

※TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.57 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	16.0 kg/km	
Max. attenuation	15.0dB/100ft(0.49dB/m)	at 500MHz
	22.0dB/100ft(0.72dB/m)	at 1GHz
	50.0dB/100ft(1.64dB/m)	at 5GHz
	80.0dB/100ft(2.62dB/m)	at 10GHz
	130.0dB/100ft(4.27dB/m)	at 20GHz





## Semi - Flexible Coaxial Cable

### Cable Type : SF-085P(Semi- Flexible Type)

- Specification ..... MIL-C-17/133
- Continuous working voltage ..... Max. 1500Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

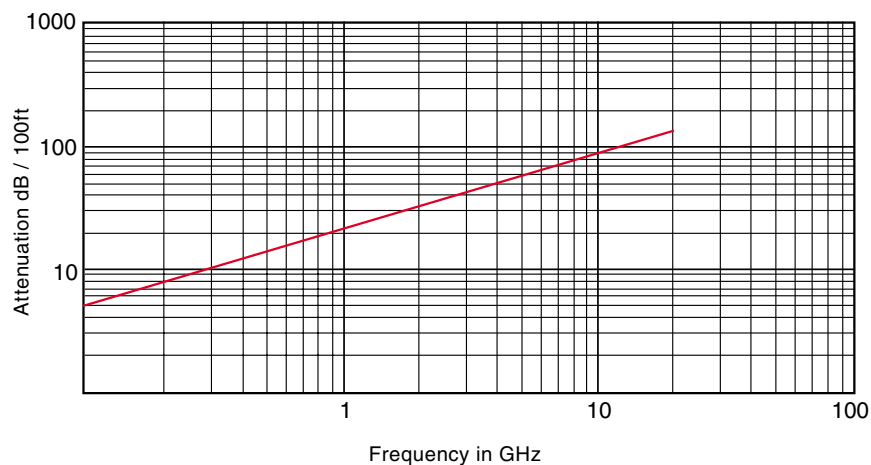


Item	Material	Diameter	Remark
(A) Center conductor	SPCW	0.511mm(0.02inch)	Solid type
(B) Dielectric	PTFE(Solid)	1.68mm(0.066inch)	
(C) Outer shield	TC(Braid)	2.20mm(0.087inch)	100% Coverage
(D) Jacket	PVC(Clear)	3.20mm(0.1061inch)	

※TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.57 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	22.0 kg/km	
Max. attenuation	15.0dB/100ft(0.49dB/m) 22.0dB/100ft(0.72dB/m) 50.0dB/100ft(1.64dB/m) 80.0dB/100ft(2.62dB/m) 130.0dB/100ft(4.27dB/m)	at 500MHz at 1GHz at 5GHz at 10GHz at 20GHz



## Semi - Flexible Coaxial Cable

### Cable Type : SF-141(Semi-Flexible Type)

- Specification ..... MIL-C-17/130
- Continuous working voltage ..... Max. 1900Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

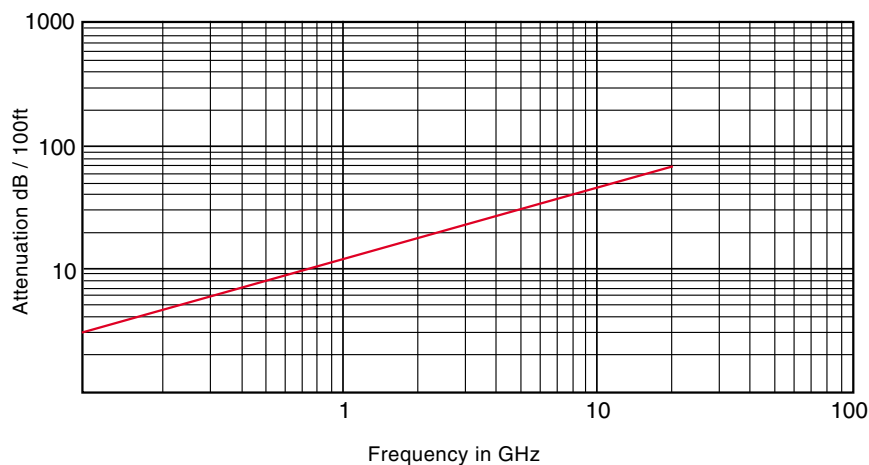


Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.92mm(0.036inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	2.98mm(0.117inch)	
Ⓒ Outer shield	TC(Braid)	3.58mm(0.141inch)	100% Coverage

※TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.06 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 29.9 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	36.0 kg/km	
Max. attenuation	8.0dB/100ft(0.26dB/m) 12.0dB/100ft(0.39dB/m) 21.0dB/100ft(0.69dB/m) 29.0dB/100ft(0.95dB/m) 45.0dB/100ft(1.48dB/m) 70.0dB/100ft(2.30dB/m)	at 500MHz at 1GHz at 3GHz at 5GHz at 10GHz at 20GHz



## Semi - Flexible Coaxial Cable

### Cable Type : SF-141P(Semi-Flexible Type)

- Specification ..... MIL-C-17/130
- Continuous working voltage ..... Max. 1900Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

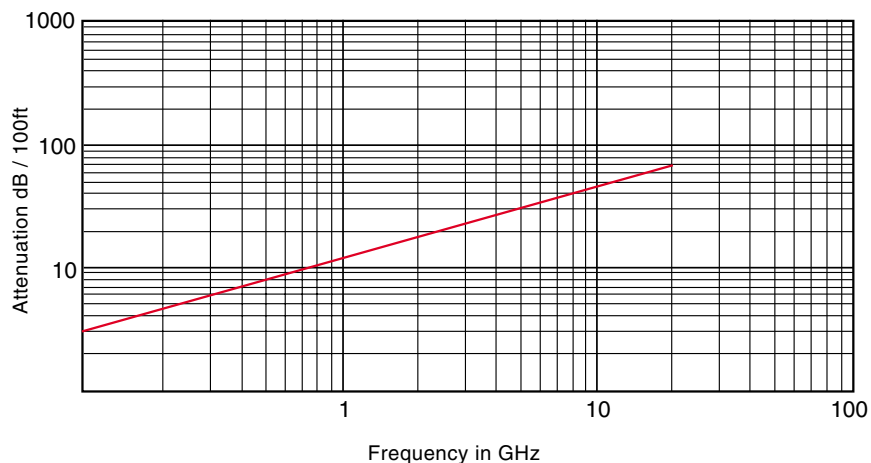


Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.92mm(0.036inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	2.98mm(0.117inch)	
Ⓒ Outer shield	TC(Braid)	3.58mm(0.141inch)	100% Coverage
Ⓓ Jacket	PVC(Clear)	4.58mm(0.1801inch)	

※TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.06 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 29.9 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	45.0 kg/km	
Max. attenuation	8.0dB/100ft(0.26dB/m) 12.0dB/100ft(0.39dB/m) 21.0dB/100ft(0.69dB/m) 29.0dB/100ft(0.95dB/m) 45.0dB/100ft(1.48dB/m) 70.0dB/100ft(2.30dB/m)	at 500MHz at 1GHz at 3GHz at 5GHz at 10GHz at 20GHz



## Semi - Flexible Coaxial Cable

### Cable Type : SF-250(Semi-Flexible Type)

- Specification ..... MIL-C-17/129
- Continuous working voltage ..... Max. 3000Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

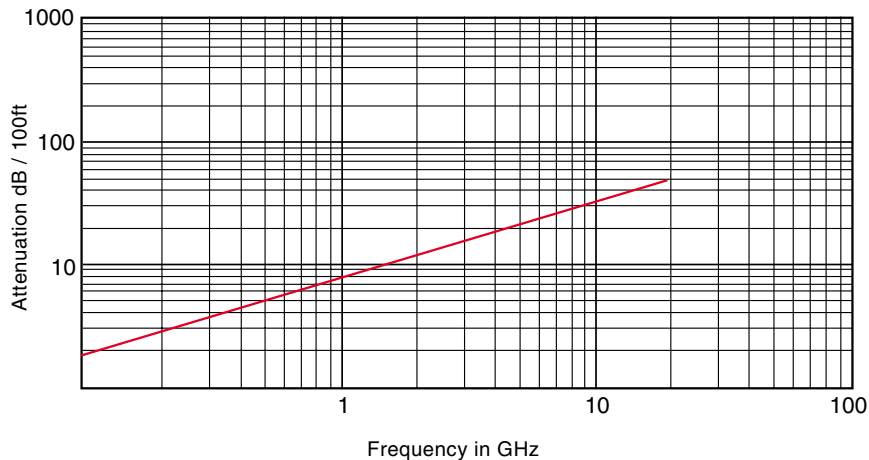


Item	Material	Diameter	Remark
Ⓐ Center conductor	SPC	1.628mm(0.064inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	5.31mm(0.209inch)	
Ⓒ Outer shield	TC(Braid)	6.35mm(0.250inch)	100% Coverage

※TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 18 GHz	
Conductor resistance	Max. 0.257 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	7500Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 29.6 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	114.0 kg/km	
Max. attenuation	4.5dB/100ft(0.15dB/m) 7.5dB/100ft(0.25dB/m) 16.0dB/100ft(0.52dB/m) 33.0dB/100ft(1.08dB/m) 48.0dB/100ft(1.57dB/m)	at 400MHz at 1GHz at 3GHz at 10GHz at 18GHz



# Semi-Rigid Coaxial Cable

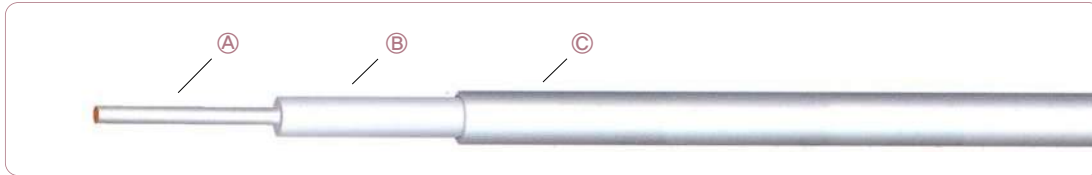


## Semi-Rigid Coaxial Cable

### Cable Type : SR-034(Semi-Rigid Type)

- Specification ..... MIL-C-17/154
- Continuous working voltage ..... Max. 750Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

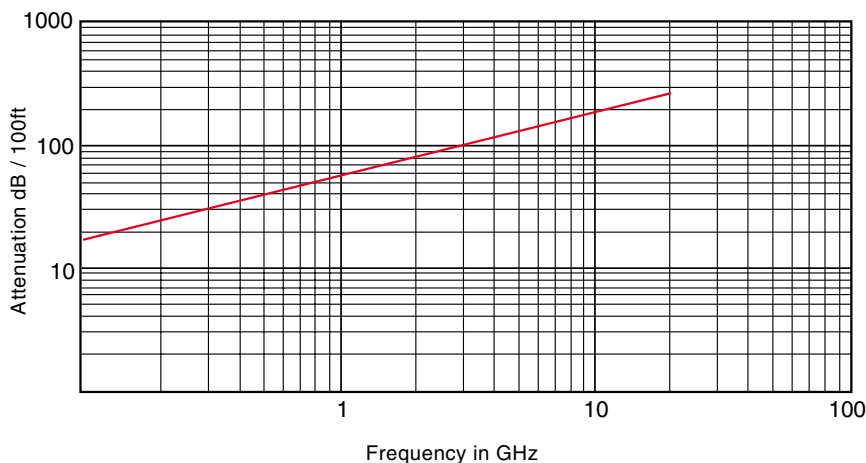


Item	Material	Diameter	Remark
(A) Center conductor	SPCW	0.203mm(0.008inch)	Solid type
(B) Dielectric	PTFE(Solid)	0.66mm(0.026inch)	
(C) Outer shield	TC(Tube)	0.86mm(0.339inch)	100% Coverage

※TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 41.9 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	3.1 kg/km	
Max. attenuation	42.0dB/100ft(1.38dB/m)	at 500MHz
	60.0dB/100ft(1.97dB/m)	at 1GHz
	100.0dB/100ft(3.28dB/m)	at 3GHz
	140.0dB/100ft(4.59dB/m)	at 5GHz
	190.0dB/100ft(6.23dB/m)	at 10GHz
	280.0dB/100ft(9.19dB/m)	at 20GHz

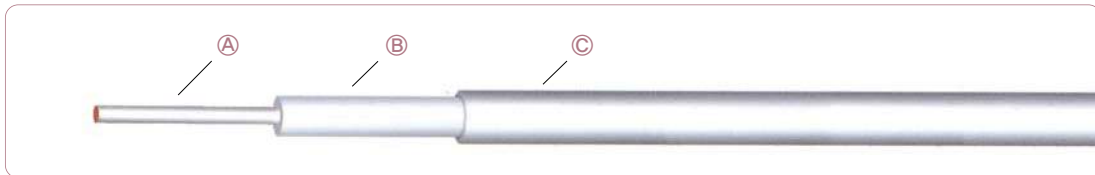


## Semi-Rigid Coaxial Cable

### Cable Type : SR-047(Semi-Rigid Type)

- Specification ..... MIL-C-17/151
- Continuous working voltage ..... Max. 1000Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

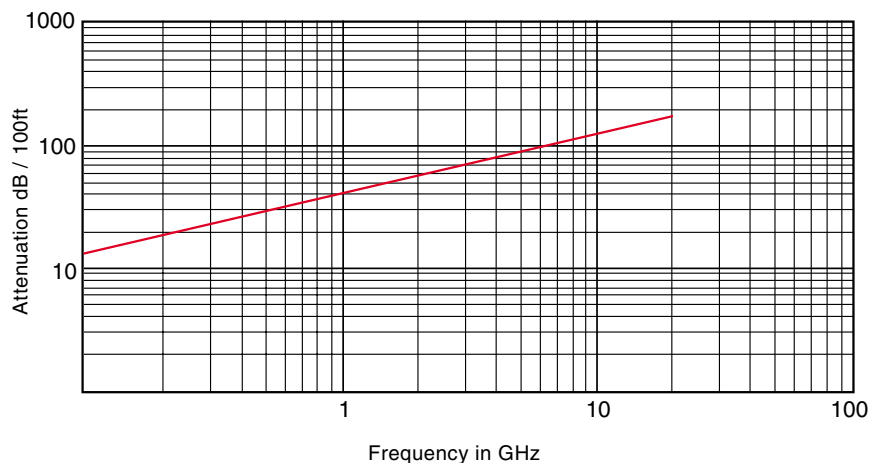


Item	Material	Diameter	Remark
(A) Center conductor	SPCW	0.287mm(0.011inch)	Solid type
(B) Dielectric	PTFE(Solid)	0.94mm(0.037inch)	
(C) Outer shield	TC(Tube)	1.19mm(0.047inch)	100% Coverage

※ TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 20.9 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ.km	at 20°C
Test voltage	2000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	5.7 kg/km	
Max. attenuation	28.0dB/100ft(0.92dB/m) 40.0dB/100ft(1.31dB/m) 70.0dB/100ft(2.30dB/m) 90.0dB/100ft(2.95dB/m) 130.0dB/100ft(4.27dB/m) 190.0dB/100ft(6.23dB/m)	at 500MHz at 1GHz at 3GHz at 5GHz at 10GHz at 20GHz

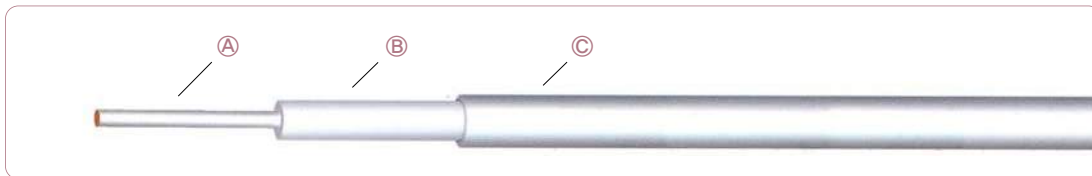


## Semi-Rigid Coaxial Cable

### Cable Type : SR-085(Semi-Rigid Type)

- Specification ..... MIL-C-17/133
- Continuous working voltage ..... Max. 1500Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

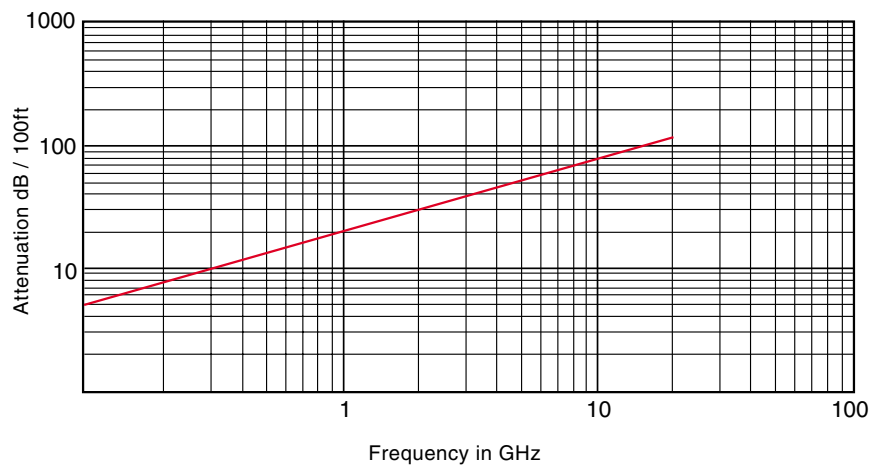


Item	Material	Diameter	Remark
Ⓐ Center conductor	SPCW	0.511mm(0.02inch)	Solid type
Ⓑ Dielectric	PTFE(Solid)	1.68mm(0.066inch)	
Ⓒ Outer shield	TC(Tube)	2.20mm(0.087inch)	100% Coverage

※ TC= Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.57 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 32 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	20.2 kg/km	
Max. attenuation	15.0dB/100ft(0.49dB/m)	at 500MHz
	22.0dB/100ft(0.72dB/m)	at 1GHz
	50.0dB/100ft(1.64dB/m)	at 5GHz
	80.0dB/100ft(2.62dB/m)	at 10GHz
	130.0dB/100ft(4.27dB/m)	at 20GHz



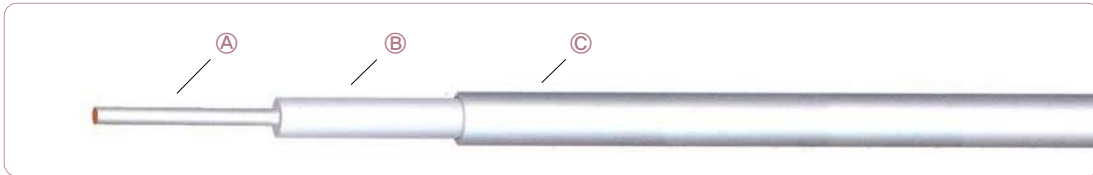


## Semi-Rigid Coaxial Cable

### Cable Type : SR-141(Semi-Rigid Type)

- Specification ..... MIL-C-17/130
- Continuous working voltage ..... Max. 1900Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

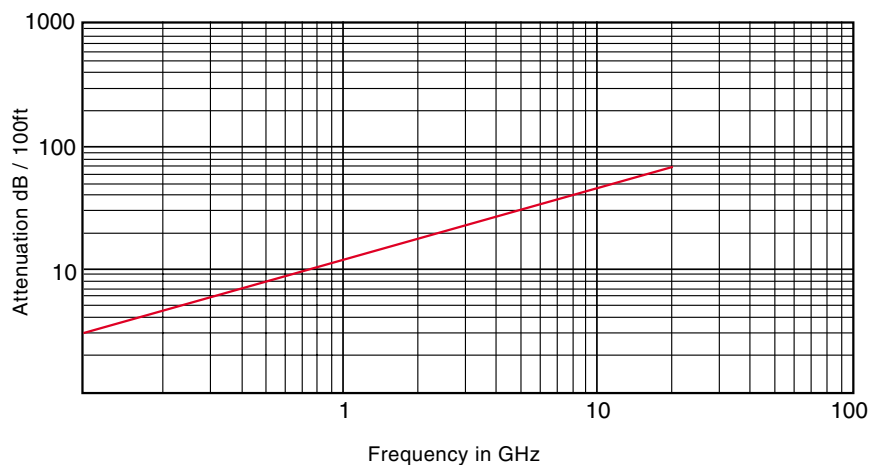


Item	Material	Diameter	Remark
(A) Center conductor	SPCW	0.92mm(0.036inch)	Solid type
(B) Dielectric	PTFE(Solid)	2.98mm(0.117inch)	
(C) Outer shield	TC(Tube)	3.58mm(0.141inch)	100% Coverage

※ TC=Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 20 GHz	
Conductor resistance	Max. 2.06 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	5000Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 29.9 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	46.7 kg/km	
Max. attenuation	8.0dB/100ft(0.26dB/m)	at 500MHz
	12.0dB/100ft(0.39dB/m)	at 1GHz
	21.0dB/100ft(0.69dB/m)	at 3GHz
	29.0dB/100ft(0.95dB/m)	at 5GHz
	45.0dB/100ft(1.48dB/m)	at 10GHz
	70.0dB/100ft(2.30dB/m)	at 20GHz

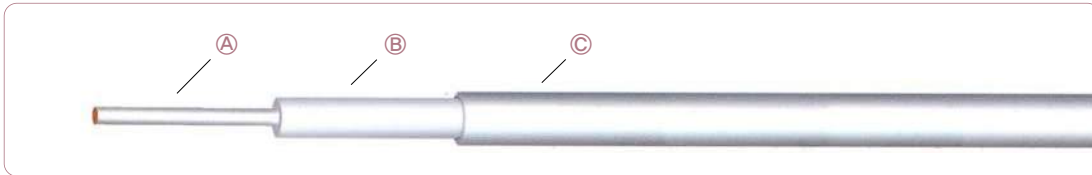


## Semi-Rigid Coaxial Cable

### Cable Type : SR-250(Semi-Rigid Type)

- Specification ..... MIL-C-17/129
- Continuous working voltage ..... Max. 3000Vrms
- Operating temperature range ..... -40°C ~ 125°C

#### Construction

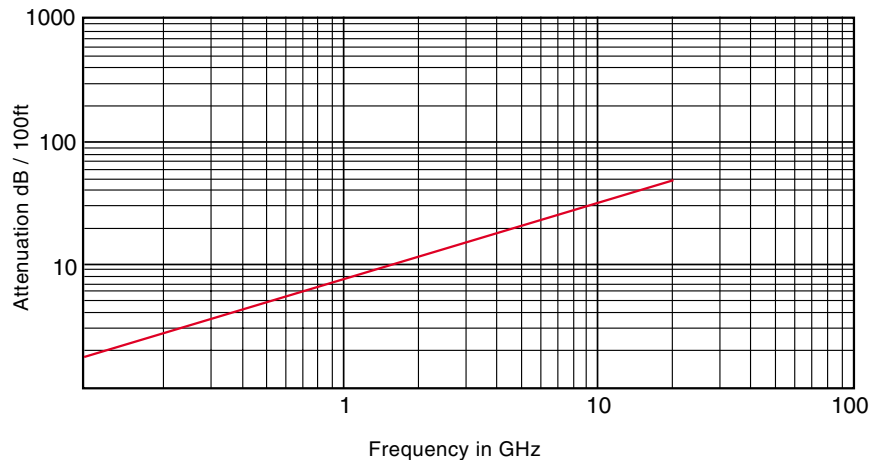


Item	Material	Diameter	Remark
(A) Center conductor	SPC	1.628mm(0.064inch)	Solid type
(B) Dielectric	PTFE(Solid)	5.31mm(0.209inch)	
(C) Outer shield	TC(Tube)	6.35mm(0.25inch)	100% Coverage

※TC= Tin Plated Copper

#### Electrical Data

Item	Specification	Remark
Operating frequency	Max. 18 GHz	
Conductor resistance	Max. 0.257 Ω /100ft	at 20°C
Dielectric resistance	Min. 1000 MΩ .km	at 20°C
Test voltage	7500Vrms	1 min
Velocity of propagation	Nom. 69.5%	
Capacitance	Max. 29.6 pF/ft	
Characteristic impedance	50 ± 2 Ω	
Approx. weight	147.0 kg/km	
Max. attenuation	4.5dB/100ft(0.15dB/m)	at 400MHz
	7.5dB/100ft(0.25dB/m)	at 1GHz
	16.0dB/100ft(0.52dB/m)	at 3GHz
	33.0dB/100ft(1.08dB/m)	at 10GHz
	48.0dB/100ft(1.57dB/m)	at 18GHz



# Hook-up Wire



## Hook-up Wire

### Wire Type : M16878/4

- Specification ..... MIL-W-16878
- Continuous working voltage ..... 600V
- Operating temperature range ..... 200°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
SPC	30	1/0.254	0.254	PTFE	0.25	0.75
SPC	30	7/0.102	0.306	PTFE	0.25	0.81
SPC	28	1/0.320	0.320	PTFE	0.25	0.82
SPC	28	7/0.127	0.381	PTFE	0.25	0.88
SPC	26	1/0.404	0.404	PTFE	0.25	0.90
SPC	26	7/0.160	0.480	PTFE	0.25	0.98
SPC	24	1/0.511	0.511	PTFE	0.25	1.01
SPC	24	7/0.203	0.609	PTFE	0.25	1.11
SPC	22	1/0.643	0.643	PTFE	0.25	1.14
SPC	22	7/0.254	0.762	PTFE	0.25	1.26
SPC	20	1/0.813	0.813	PTFE	0.25	1.31
SPC	20	7/0.320	0.960	PTFE	0.25	1.46
SPC	18	1/1.024	1.024	PTFE	0.25	1.52
SPC	18	7/0.404	1.212	PTFE	0.25	1.71
SPC	12	37/0.320	2.240	PTFE	0.50	3.24

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 100 M $\Omega$ .km	at 20°C
Voltage withstanding	1500V	1 min

## Hook-up Wire

### Wire Type : M16878/5

- Specification ..... MIL-W-16878
- Continuous working voltage ..... 1000V
- Operating temperature range ..... 200°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
SPC	30	1/0.254	0.254	PTFE	0.38	1.01
SPC	30	7/0.102	0.306	PTFE	0.38	1.07
SPC	28	1/0.320	0.320	PTFE	0.38	1.08
SPC	28	7/0.127	0.381	PTFE	0.38	1.14
SPC	26	1/0.404	0.404	PTFE	0.38	1.16
SPC	26	7/0.160	0.480	PTFE	0.38	1.24
SPC	24	1/0.511	0.511	PTFE	0.38	1.27
SPC	24	7/0.203	0.609	PTFE	0.38	1.37
SPC	22	1/0.643	0.643	PTFE	0.38	1.40
SPC	22	7/0.254	0.762	PTFE	0.38	1.52
SPC	20	1/0.813	0.813	PTFE	0.38	1.57
SPC	20	7/0.320	0.960	PTFE	0.38	1.34
SPC	18	1/1.024	1.024	PTFE	0.38	1.78
SPC	18	7/0.404	1.212	PTFE	0.38	1.97
SPC	12	37/0.320	2.240	PTFE	0.38	3.00
SPC	10	37/0.404	2.828	PTFE	0.38	3.59

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 100 M $\Omega$ .km	at 20°C
Voltage withstanding	2000V	1 min

## Hook-up Wire

### Wire Type : M16878/6

- Specification ..... MIL-W-16878
- Continuous working voltage ..... 250V
- Operating temperature range ..... 200°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
SPC	30	1/0.254	0.254	PTFE	0.15	0.55
SPC	30	7/0.102	0.306	PTFE	0.15	0.61
SPC	28	1/0.320	0.320	PTFE	0.15	0.62
SPC	28	7/0.127	0.381	PTFE	0.15	0.68
SPC	26	1/0.404	0.404	PTFE	0.15	0.70
SPC	26	7/0.160	0.480	PTFE	0.15	0.78
SPC	24	1/0.511	0.511	PTFE	0.15	0.81
SPC	24	7/0.203	0.609	PTFE	0.15	0.91
SPC	22	1/0.643	0.643	PTFE	0.15	0.94
SPC	22	7/0.254	0.762	PTFE	0.15	1.06
SPC	20	1/0.813	0.813	PTFE	0.15	1.11
SPC	20	7/0.320	0.960	PTFE	0.15	1.26

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 50 M $\Omega$ .km	at 20°C
Voltage withstanding	1000V	1 min

## Hook-up Wire

### Wire Type : M16878/23

- Specification ..... MIL-W-16878
- Continuous working voltage ..... 600V
- Operating temperature range ..... 260°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
NPC	30	1/0.254	0.254	PTFE	0.15	0.55
NPC	30	7/0.102	0.306	PTFE	0.15	0.61
NPC	28	1/0.320	0.320	PTFE	0.15	0.62
NPC	28	7/0.127	0.381	PTFE	0.15	0.68
NPC	26	1/0.404	0.404	PTFE	0.15	0.70
NPC	26	7/0.160	0.480	PTFE	0.15	0.78
NPC	24	1/0.511	0.511	PTFE	0.15	0.81
NPC	24	7/0.203	0.609	PTFE	0.15	0.91
NPC	22	1/0.643	0.643	PTFE	0.15	0.94
NPC	22	7/0.254	0.762	PTFE	0.15	1.06
NPC	20	1/0.813	0.813	PTFE	0.15	1.11
NPC	20	7/0.320	0.960	PTFE	0.15	1.26

※ NPC=Nickel-Plated Copper

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 50 M $\Omega$ .km	at 20°C
Voltage withstanding	1500V	1 min

## Hook-up Wire

### Wire Type : M16878/2

- Specification ..... MIL-W-16878
- Continuous working voltage ..... 1000V
- Operating temperature range ..... 260°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
NPC	30	1/0.254	0.254	PTFE	0.25	0.75
NPC	30	7/0.102	0.306	PTFE	0.25	0.81
NPC	28	1/0.320	0.320	PTFE	0.25	0.82
NPC	28	7/0.127	0.381	PTFE	0.25	0.88
NPC	26	1/0.404	0.404	PTFE	0.25	0.90
NPC	26	7/0.160	0.480	PTFE	0.25	0.98
NPC	24	1/0.511	0.511	PTFE	0.25	1.01
NPC	24	7/0.203	0.609	PTFE	0.25	1.11
NPC	22	1/0.643	0.643	PTFE	0.25	1.14
NPC	22	7/0.254	0.762	PTFE	0.25	1.26
NPC	20	1/0.813	0.813	PTFE	0.25	1.31
NPC	20	7/0.320	0.960	PTFE	0.25	1.46
NPC	18	1/1.024	1.024	PTFE	0.25	1.52
NPC	18	7/0.404	1.212	PTFE	0.25	1.71
NPC	12	37/0.320	2.240	PTFE	0.33	2.90

※NPC=Nickel-Plated Copper

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 100 MΩ.km	at 20°C
Voltage withstanding	2000V	1 min



## Hook-up Wire

### Wire Type : M16878/27

- Specification ..... MIL-W-16878
- Continuous working voltage ..... 250V
- Operating temperature range ..... 260°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
NPC	30	1/0.254	0.254	PTFE	0.38	1.01
NPC	30	7/0.102	0.306	PTFE	0.28	1.07
NPC	28	1/0.320	0.320	PTFE	0.38	1.08
NPC	28	7/0.127	0.381	PTFE	0.38	1.14
NPC	26	1/0.404	0.404	PTFE	0.38	1.16
NPC	26	7/0.160	0.480	PTFE	0.38	1.24
NPC	24	1/0.511	0.511	PTFE	0.38	1.27
NPC	24	7/0.203	0.609	PTFE	0.38	1.37
NPC	22	1/0.643	0.643	PTFE	0.38	1.40
NPC	22	7/0.254	0.762	PTFE	0.38	1.52
NPC	20	1/0.813	0.813	PTFE	0.38	1.57
NPC	20	7/0.320	0.960	PTFE	0.38	1.34
NPC	18	1/1.024	1.024	PTFE	0.41	1.84
NPC	18	7/0.404	1.212	PTFE	0.41	2.03
NPC	12	37/0.320	2.240	PTFE	0.51	3.26
NPC	10	37/0.404	2.828	PTFE	0.51	3.85

※NPC=Nickel-Plated Copper

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 100 M $\Omega$ .km	at 20°C
Voltage withstanding	1000V	1 min

## Hook-up Wire

### Wire Type : M22759/9

- Specification ..... MIL-W-22759
- Continuous working voltage ..... 1000V
- Operating temperature range ..... 200°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
SPC	28	7/0.127	0.381	PTFE	0.36	1.10
SPC	26	19/0.102	0.510	PTFE	0.38	1.27
SPC	24	19/0.127	0.635	PTFE	0.38	1.40
SPC	22	19/0.160	0.800	PTFE	0.38	1.56
SPC	20	19/0.203	1.015	PTFE	0.38	1.78
SPC	18	19/0.254	1.270	PTFE	0.41	2.09
SPC	16	19/0.287	1.435	PTFE	0.41	2.26
SPC	14	19/0.361	1.805	PTFE	0.43	2.67
SPC	12	19/0.455	2.275	PTFE	0.43	3.14
SPC	10	37/0.404	2.828	PTFE	0.43	3.69

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 50 M $\Omega$ .km	at 20°C
Voltage withstanding	2000V	1 min

## Hook-up Wire

### Wire Type : M22759/10

- Specification ..... MIL-W-22759
- Continuous working voltage ..... 1000V
- Operating temperature range ..... 260°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
NPC	28	7/0.127	0.381	PTFE	0.36	1.10
NPC	26	19/0.102	0.510	PTFE	0.38	1.27
NPC	24	19/0.127	0.635	PTFE	0.38	1.40
NPC	22	19/0.160	0.800	PTFE	0.38	1.56
NPC	20	19/0.203	1.015	PTFE	0.38	1.78
NPC	18	19/0.254	1.270	PTFE	0.41	2.09
NPC	16	19/0.287	1.435	PTFE	0.41	2.26
NPC	14	19/0.361	1.805	PTFE	0.43	2.67
NPC	12	19/0.455	2.275	PTFE	0.43	3.14
NPC	10	37/0.404	2.828	PTFE	0.43	3.69

※NPC=Nickel-Plated Copper

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 100 M $\Omega$ .km	at 20°C
Voltage withstanding	2000V	1 min

## Hook-up Wire

### Wire Type : M22759/11

- Specification ..... MIL-W-22759
- Continuous working voltage ..... 600V
- Operating temperature range ..... 200°C



#### Construction & Material

Conductor				Insulation		
Material (-)	Size (AWG)	Stranding (EA/mm)	Diameter (mm)	Material (-)	Thickness (mm)	Diameter (mm)
SPC	28	7/0.127	0.381	PTFE	0.23	0.84
SPC	26	19/0.102	0.510	PTFE	0.25	1.01
SPC	24	19/0.127	0.635	PTFE	0.25	1.14
SPC	22	19/0.160	0.800	PTFE	0.25	1.30
SPC	20	19/0.203	1.015	PTFE	0.25	1.52
SPC	18	19/0.254	1.270	PTFE	0.28	1.83
SPC	16	19/0.287	1.435	PTFE	0.28	2.00
SPC	14	19/0.361	1.805	PTFE	0.30	2.41
SPC	12	19/0.455	2.275	PTFE	0.36	3.00
SPC	10	37/0.404	2.828	PTFE	0.41	3.65

#### Electrical Data

Item	Specification	Remark
Insulation resistance	Min. 50 M $\Omega$ .km	at 20°C
Voltage withstanding	1500V	1 min

# Membranes



## ePTFE Membrane (MF)

### • ePTFE Membrane Specifications

Properties	Unit	Value	Remark
Polymer		PTFE	
Type		MF	
Thickness	$\mu\text{m}$	20 $\pm$ 2	
Width	mm	1650	
Pore size	$\mu\text{m}$	$\leq$ 0.20	ASTM-F316-03
Hydrostatic pressure	cmH <sub>2</sub> O(low range hydrostatic pressure method)	180	KS K ISO 811
Vapour permeance Air permeability	g/m <sup>2</sup> ,24hr(Potassium acetate)	72000	JIS L 1099 B2
	cm <sup>3</sup> ,cm <sup>3</sup> ,min	40	KS K ISO 9237

### • ePTFE(expanded polytetrafluoroethylene)

Thin porous polymer membrane is made by processing polytetrafluoroethylene.

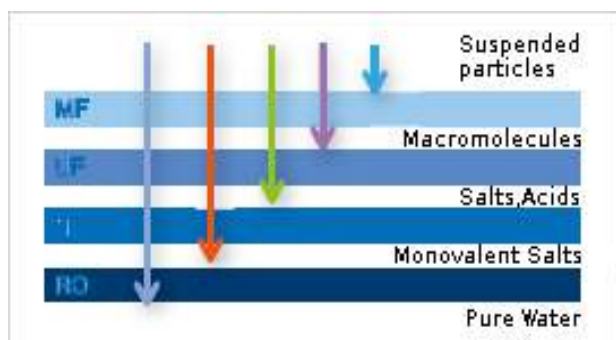
Droplets smaller than the holes in the membrane is greater than the vapor, Therefore, to prevent the water coming from the outside and to pass the vapor occurring from the inside at the same time.

### • Advantage

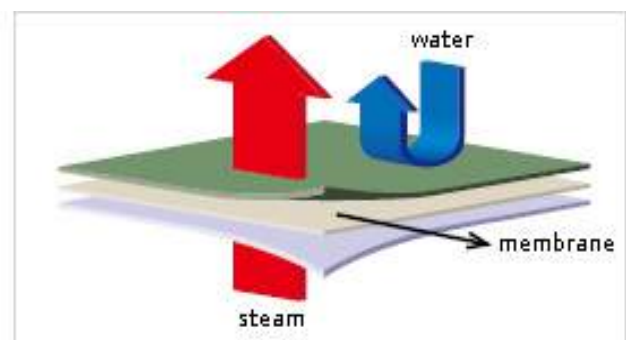
Chemical resistance, Non-flammable, Weather proof, High electrical property

### • Application

High performance fabric, Implant, Fluorine polymer texture, Gasket, Membrane filter



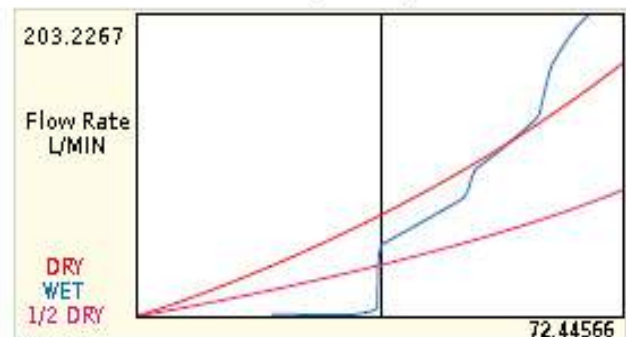
Membrane types



Laminating Technique



ePTFE SEM ( $\times$ 1,000)



ePTFE pore size ( $\mu\text{m}$ )

## ePTFE Membrane (UF)

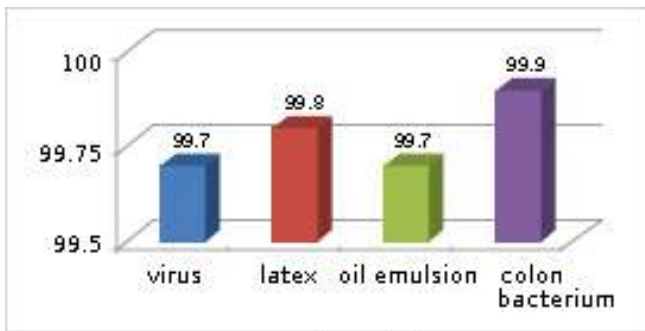
### • ePTFE Membrane Specifications

Properties	Unit	Value	Remark
Polymer		PTFE	
Type		UF	
Thickness	$\mu\text{m}$	10 $\pm$ 2	
Width	mm	1600	
Pore size	$\mu\text{m}$	$\leq 0.10$	ASTM-F316-03
Hydrostatic pressure	cmH <sub>2</sub> O (low range hydrostatic pressure method)	100	KS K ISO 811
Vapour permeance Air	g/m <sup>2</sup> , 24hr (Potassium acetate)	140000	JIS L 1099 B2
permeability	cm <sup>3</sup> cm <sup>2</sup> /min	80	KS K ISO 9237

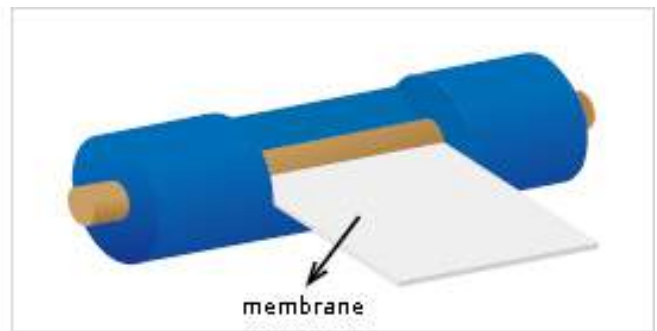
### • High resolution filter

General filtered to separate the liquid or gaseous particles that do not dissolve as well as even the separation of the mixture of gases dissolved in the liquid or dissolved substances is a special membrane.

Are characterized by big honor MF and UF membrane on the inner surface of the membrane separation and adsorption simultaneously.



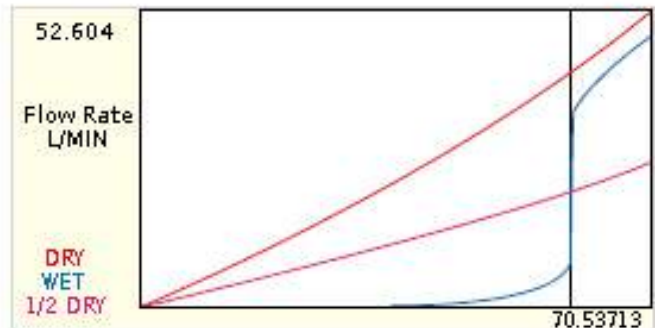
Removal rate (%)



Utilization



ePTFE SEM ( $\times 1,000$ )



ePTFE pore size ( $\mu\text{m}$ )

## ePTFE Membrane (ULPA)

### • ePTFE Membrane Specifications

Properties	Unit	Value	Remark
Polymer		PTFE	
Type		ULPA	
Thickness		5±2	
Width Resistance	μm	5±2	
Remove efficiency	mm	≤1450	
	mmH2O	25	
	%	99.999	ASTM-F316-03

### • Air Filter Membrane

ULPA grade has a low pressure drop and high dust collection efficiency. Due to these excellent properties compared with glass fiber filter.

Not involve Boron and Phosphorus as chemicals, as well as impurities. Also excellent chemical resistance and moisture resistance.

Excellent dust emission feature can easily exhausted to the outside.

### • Advantage

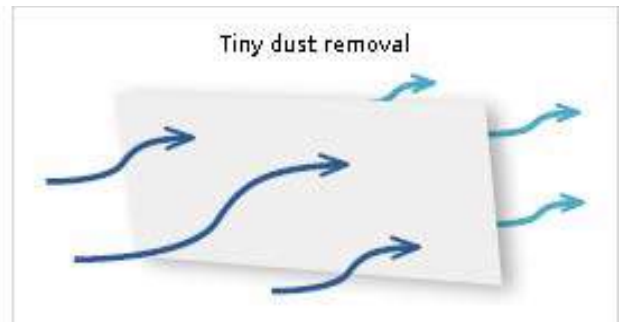
Low pressure loss and high dust collection efficiency, Excellent chemical resistance, Excellent moisture resistance, Excellent dust release properties.

### • Application

vacuum, car, air conditioner, semiconductor



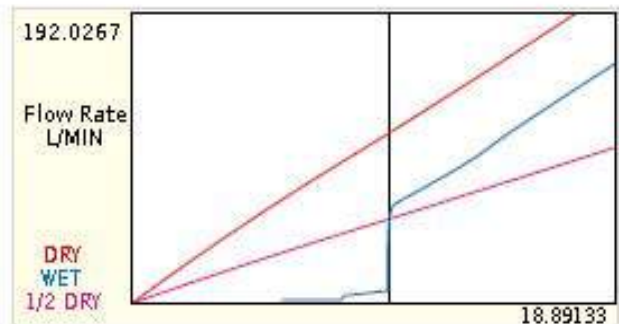
Air Filter membrane



Characteristics of the air filter



ePTFE SEM (x1,000)



Water filter pore size



# Laminating Textile

## • Textile Specifications

Properties	Unit	Value		Remark
Type		Laminated fabric membrane		
Thickness	$\mu\text{m}$	30 $\pm$ 2		
Width	mm	1650		
Pore size	$\mu\text{m}$	$\leq$ 0.25		ASTM-F316-03
Hydrostatic pressure	cmH <sub>2</sub> O (low range hydrostatic pressure method)	$\leq$ 1550		KS K ISO 811
Vapour permeance	$\text{g/m}^2, 24\text{hr}$ (Potassium acetate)	21000		JIS L 1099 B2
Air permeability	$\text{cm}^3, \text{cm}^2, \text{min}$	15		KS K ISO 9237
Color fastness to washing	30°C	change in color 4	contamination acetate 4-5	KS K ISO 9237
		Cotton 4-5	Nylon 4-5	
		Polyester 4-5	Acrylic 4-5	
		Acrylic 4-5		
Color Fastness To Drycleaning		change in color	solution 4	KS K ISO 105 D01
Color fastness to rubbing		Dry 4-5	Wet 4-5	KS K 0650
Bonding stress	cN/3 cm	MD 45	TD 30	KS K 0531

## • Laminating Textile

FLONTEC's Highly breathable laminated products supply more convenience also excellent waterproof and windproof function to maintain comfort.

## • Advantage

Excellent Porous Waterproof, Excellent Vapor permeance, High Hydrostatic pressure

## • Application

Mountain, Ski, Cycle, Golf apparel etc



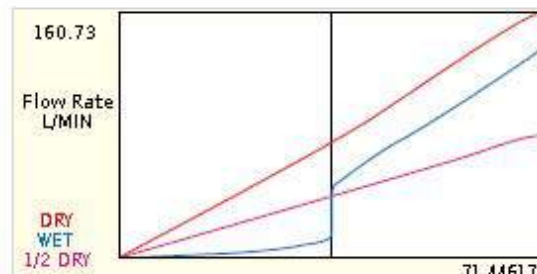
Laminating Textile



Fabric



Lining



Textile pore size



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