MEFC

شركة الشرق الأوسط لصناعة كابلات الالياف البصرية

MIDDLE EAST FIBER CABLE MANUFACTURING CO.

Connecting the Globe

FiberConnect Council MENA

SAUDI MADE

صناعة سعودية

MEFC

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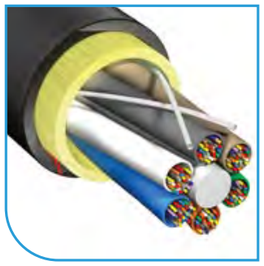
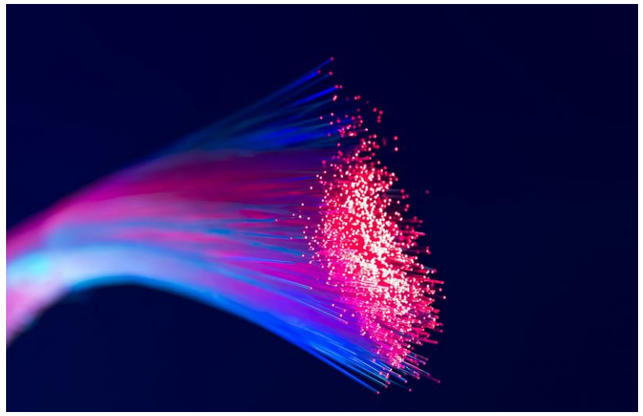


Connecting the Globe



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Company Overview

Since its inception in 1995, **Middle East Fiber Cable Manufacturing Co. (MEFC)** has established itself as the leader in manufacturing optical fiber cables for telecommunications and industrial sectors.

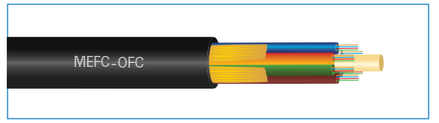
Headquartered in Riyadh - Saudi Arabia, **MFFC** is a Saudi-Japanese partnership (year 2007) with Fujikura, a well-known global company in the fiber and telecom systems products. **MEFC** factory was built with a world class technical infrastructure and vast experience of professionals. MEFC is well positioned to deliver high quality products to its valued clients in short delivery periods. **MEFC** has a production capacity that exceeds 3000 KM/month, and is ISO 90012008 Certified.

MEFC maintains production of very superior-quality fiber cables. Focusing on fiber optics and related technologies, **MEFC** has accumulated great experience and innovative technical knowledge. Our quality control procedures are strictly followed throughout the manufacturing processes in accordance with the International Telecommunication Union (ITU) and IEC standards. **MEFC** has been also certified by international certification bodies such as Telecordia, BSI, Intertek, and ITU. In addition, **MEFC** has been an approved vendor of fiber cables for Saudi Aramco, SEC, SWCC, all regional telecom operators (STC, Mobily, ITC and Bayanat, Etc..), most of OSP/Integrators, Kuwait Petroleum Co., Zain of Kuwait, Qatar Oil & Gas Companies, Q-Tel of Qatar. Dubai Electricity & Water Authority (DEWA), Algerian Telecom and many others.

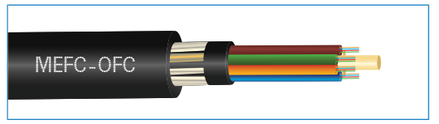
With an estimated 40% of the Saudi local market share and the GCC countries, **MEFC** is well positioned to be the supplier of choice for most of the local telecom and industrial projects. **MEFC** has entered the FTTH market by supplying micro cables, pre-connected cables, fiber optics accessories, air blown cables and offering end to end solutions. In addition, MEFC is planning to increase exports to the GCC, Middle East countries and Africa.

MEFC employs a very competent, well-experienced management team and dedicated employees, most of which have been with the company for very long term. Sales and marketing staff have established long-term business relationships with government entities as well as service providers, industrial and integration and OSP contractors. MEFC top priority is to provide superior quality products, along with continual improvement in order to achieve ultimate customer satisfaction.

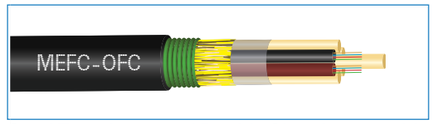
Middle East Fiber Cable Manufacturing Co. (MEFC):
is a Saudi Japanese Partnership Based in Riyadh, Saudi Arabia.



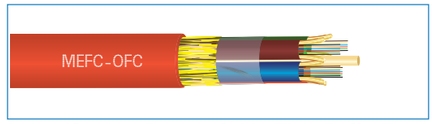
Duct F.O. Cable



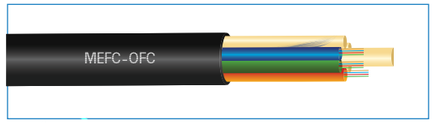
Direct Buried Non-Metallic F.O. Cable



Steel Tape Armoured Double Sheath F.O. Cable



Indoor/Outdoor Dry F.O. Cable (Tight Buffer Type)



Micro Duct Cable

ISO 9001-2008 Certified
- Certified by RWTUV Germany

Company's Top Priorities
- Superior quality products
- Continuous Improvement
- Customer Satisfaction

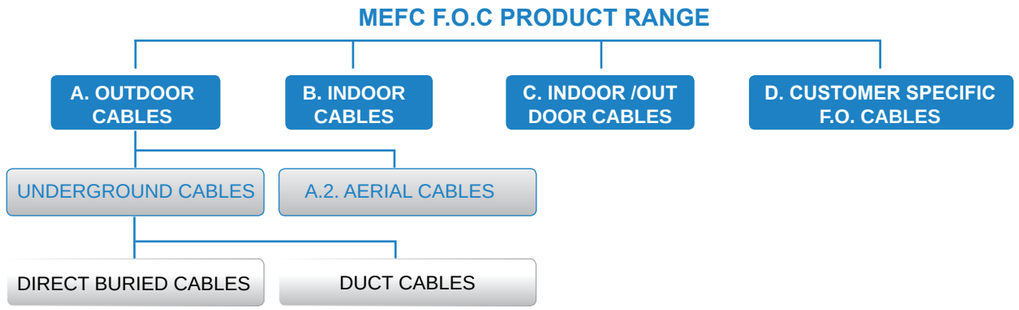
MEFC Vendor Approvals
1. Saudi Aramco
2. Saudi Telecom Company
3. Saudi Railways
4. Kuwait Oil Company
5. Kuwait National Petroleum Corporation
6. Zain Kuwait
7. Qatar Petroleum
8. Sudan Telecom
9. Dubai Electricity Water Authority
10. Federal Electricity Water Authority
11. SEC
12. SWCC
13. Iran Telecom
14. MODA, Saudi Arabia
15. Mobily (Bayanat) / ITC
16. MOI, Saudi Arabia
17. Princess Nourah University
18. King Abdullah Petroleum Science & Research Centre
19. King Abdullah Financial District

Approvals For Fiber & Cables
- Telecordia Technologies - USA
- British Standards Institute
- Underwriter Laboratories. (Simplex & Duplex)
- Intertek Testing Services
- Canadian Standards Association USA

MEFC Product Overview

1.2 - OPTICAL FIBER CABLES

MEFC manufactures various types of fiber optic cables by taking into account the customers' requirements, the latest technologies and the highest quality.
MEFC adopted Loose tube construction for the most outside plant optical fiber cables.



A-OUTDOOR CABLES

A.1: UNDER GROUND CABLES

The construction of MEFC outdoor cables are mostly of Loose tube structured in which the gel filled buffer tubes are stranded over by-SZ type around a central strength member. The central strength member is responsible for providing support to the tubes as well providing tensile strength. These cables may also have KEVLAR or Glass Yarns for additional strength.
Main Types of Construction of outdoor cables are DUCT and DIRECT BURIED along with MEFC manufactures cables for specific customer requirements and applications in oil and gas and high voltage lines etc.

A.1.1 - DIRECT BURIED CABLES

The cable is directly buried in trenches, providing a jacket with resists damages caused by moisture (rodents and insects), abrasion, compression etc. These cables are available in both Metallic and Non-Metallic type.

A.1.2 DUCT CABLES

The cable is directly deployed inside a conduit, and are subject to fewer stress than Direct buried cables, these cables are available in both Metallic and Non-metallic type.

A.2 - AERIAL CABLES

MEFC manufactures both type of aerial cables self support and FIG.8 Cables. These cables support environmental loads generated by wind, snow and extreme temperatures.

B. INDOOR CABLES

MEFC manufactures both plenum and riser rated Indoor cables, these cables are designed to reduce smoke emission and flame spreading. The structure of these cables is of Tight buffer, which facilitates handling and termination. All types of Indoor type like Simplex, Duplex (both flat and zip) Break out, distribution and back bone cables is being manufactured as per international standards.

C. INDOOR / OUTDOOR CABLES

Many times customer lacks premises space needed for the transition between outside plant cable and Indoor cable. MEFC offers special type of Indoor/Outdoor cables which can withstand harsh environments while complying with RISER AND PLENUM Grades

D. CUSTOMER SPECIFIC OPTICAL FIBER CABLES

Complying to the standards of its special customers like ARAMCO, STC, SCECO, MODA, SRO, ,MOBILY, and KOC, MEFC manufactures special type of cables for the specific requirements of these customers.

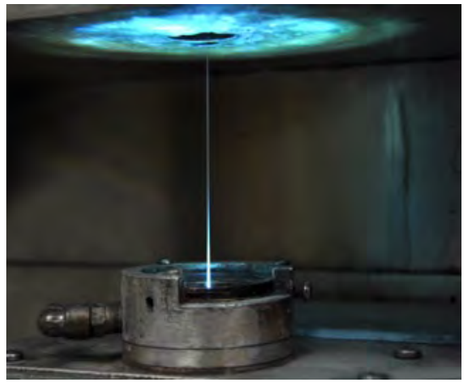
Quality Assurance And Quality Control

As an ISO 9001: 2008 certified company, MEFC has been successfully implementing the quality manage-ment system requirements with a complete commitment to satisfy the Customer needs. Our experienced and highly skilled engineers/inspectors test the incoming raw materials, conduct in process inspection at every cable manufacturing stage, verify the compliance to the requirements after every process. Finished cables are tested as per national /international standards & customer specifications.

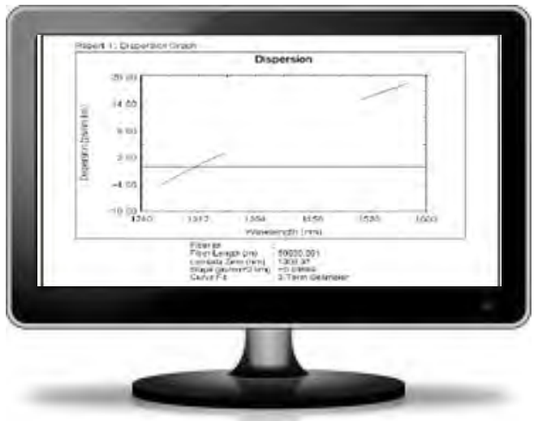
Our cables meet the performance requirements of local utility Companies & national and international standards namely SEC, ARAMCO, Saudi Telecom Company, MOBILY, IEC, ITU-T, EIA/TIA, BS, BELL CORE, RUS-PE 90.

Our Quality staff conducts tests to verify the performance and reliability of Optical fibers. These tests include Fiber strength, Attenuation Co-efficient, Attenuation unifor-mity, Mode field diameter, Cutoff Wavelength, Chromatic Dispersion, Polarization mode dispersion,Bandwidth, Numerical aperture, Cladding diameter, Concentricity error, Non-circularity and Coating diameter. The measurement in respect of above referred fiber parameters is carried out before the cabling process using advanced computer controlled test equipment, which are calibrated using international standard artifacts at regular intervals. These optical fibers are manufactured and tested in a dust free clean room environment. Type tests such as Macro bending, Temperature cycling are conducted periodically an optical fibers to the latest standards.

Colored fibers are tested for MEK and compatibility with material, which they come in contact with when they are cabled. In order to verify the ability to withstand the extreme climate conditions, all the plastics components of the cable are tested for shrink back and cold bend test before being approved for processing.



After the stage wise inspection, routine tests-attenuation co-efficient, Attenuation uniformity, water ingress test on filled cables, physical dimensions and surface quality, are carried out on the finished cables. In order to ensure the finished cables function satisfactorily for at least 30 to 40 years without degradation to the Optical transmission, type tests are conducted for every design periodically. Tensile loading, Fiber strain, Flexing, Repeated Bend, Impact, Crush, Torsion, Temperature cycling, Compound Flow tests are conducted using automated equipments to precisely apply the conditions laid down in interna-tional standards as well as customers specifications. The process and product quality characteristics are analyzed using statistical quality control techniques. X-bar and R charts, Normal Distribution analysis, Pareto Analysis, Percentile charts, P-charts are widely used statistical techniques for monitoring of test equipment and product quality characteristics in MEFC. Our commitment towards delivering highest quality optical fiber cables is quality assurance to our custom-ers that they can reap the benefits of peak perfor-mance from their fiber optic network.



Chromatic Dispersion

OTDR Trace of Optical Fiber

MEFC
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MIDDLE EAST FIBER CABLE MANUFACTURING CO.

Fiber Optic Cables Products

DUCT NON METALLIC F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap - Peripheral Strength Members - Polyethylene Outer Jacket.

DESCRIPTION

The construction of the non-metallic cables begins with our proven loose tube design. The loose tube provides protection against environmental and mechanical forces. This smaller diameter cable is light weight and suitable enough for duct and conduit use.

APPLICATIONS

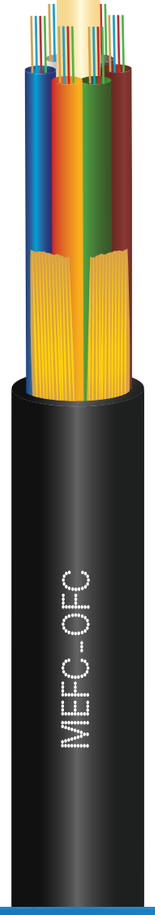
Inter Office Trunking, Data, Video Transmission, Control /Alarm system - Light Weight and Flexible - Laying in Ducts and Concrete.

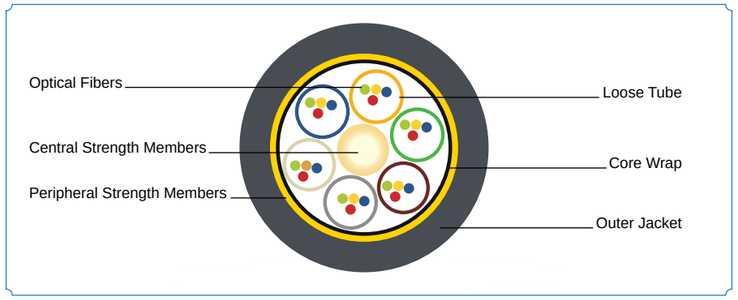
FEATURES AND BENEFITS

- Suitable for conduits and pipelines for long haul applications.
- Supports all grades of single mode and multimode fibers.
- It can be laid in vicinity of power cables.
- No additional grounding is required, at vicinity of power lines and lighting risks.
- Telemetry and SCADA links for oil & gas, electricity.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
ADUN6004	ADUN5004	ADUN1004	ADUN4004	4	4	1	10.0	100	200	85
ADUN6008	ADUN5004	ADUN1008	ADUN4008	8	4	2	10.0	100	200	86
ADUN6012	ADUN5012	ADUN1012	ADUN4012	12	12	2	10.0	100	200	86
ADUN6024	ADUN5024	ADUN1024	ADUN4024	24	12	2	10.0	100	200	88
ADUN6036	ADUN5036	ADUN1036	ADUN4036	36	12	3	10.0	100	200	90
ADUN6048	ADUN5048	ADUN1048	ADUN4048	48	12	4	10.0	100	200	92
ADUN6096	ADUN5096	ADUN1096	ADUN4096	96	12	8	11.3	11.3	226	11.3
ADUN6144	ADUN5144	ADUN1144	ADUN4144	144	12	12	13.8	13.8	276	184
ADUN6288	ADUN5288	ADUN1288	ADUN4288	285	24	12	16.2	162	324	263





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3. Jacket metered can be customized on customer requirements.

DUCT METALLIC F.O. CABLE

CABLE CONSTRUCTION

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DESCRIPTION

The construction of the metallic cables begins with our proven loose tube design. The loose tube provides protection against environmental and mechanical forces. This smaller diameter cable is light weight and suitable enough for duct and conduit use.

APPLICATIONS

Inter Office Trunking, Data, Video Transmission, Control /Alarm system - Light weight and flexible - Laying in Ducts and Concrete.

FEATURES AND BENEFITS

- Suitable for conduits and pipelines for long haul applications.
- Supports all grades of single mode and multimode fibers.
- It can be laid in vicinity of power cables.
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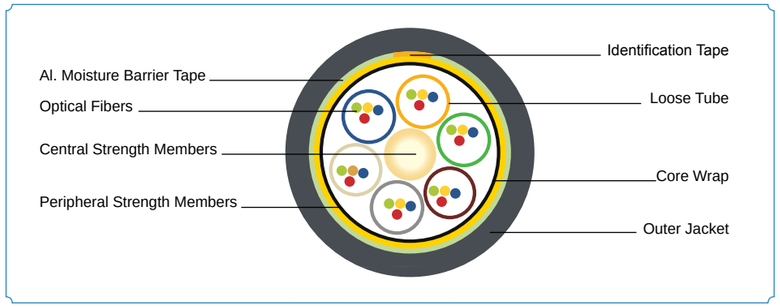
Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
ADUN6004	ADUN5004	ADUN1004	ADUN4004	4	4	1	11.2	112	224	103
ADUN6008	ADUN5004	ADUN1008	ADUN4008	8	4	2	11.2	112	224	104
ADUN6012	ADUN5012	ADUN1012	ADUN4012	12	12	1	11.2	112	224	105
ADUN6024	ADUN5024	ADUN1024	ADUN4024	24	12	2	11.2	112	224	108
ADUN6036	ADUN5036	ADUN1036	ADUN4036	36	12	3	11.2	112	240	110
ADUN6048	ADUN5048	ADUN1048	ADUN4048	48	12	4	11.2	112	224	111
ADUN6096	ADUN5096	ADUN1096	ADUN4096	96	12	8	12.3	123	224	138
ADUN6144	ADUN5144	ADUN1144	ADUN4144	144	12	12	14.7	147	294	210
ADUN6288	ADUN5288	ADUN1288	ADUN4288	288	24	12	17.1	171	342	295



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DIRECT BURIED NON METALLIC F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap- Polyethylene Inner sheath - Peripheral Strength Members - Water Blocking Material - Polyethylene Outer Jacket.

DESCRIPTION

Double Jacket is an excellent choice for installation requiring the added mechanical and environmental protection of two durable polythylene jackets. This Double Jacketed cable is directly buried in trenches.

APPLICATIONS

Junction communication system, subscriber network systym - Data, Video transmission - Direct Buried Installation.

FEATURES AND BENEFITS

- Supports all grades of single mode and multimode fibers.
- No additional grounding is required, at vicinity of power lines and lighting risks.
- Long Haul telecommunication.
- Suitable for lying in the trenches.

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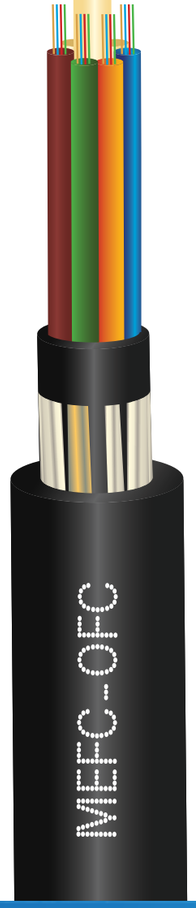

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
ADBN6004	ADBN5004	ADBN1004	ADBN4004	4	4	1	13.4	134	268	140
ADBN6008	ADBN5008	ADBN1008	ADBN4008	8	4	2	13.4	134	268	141
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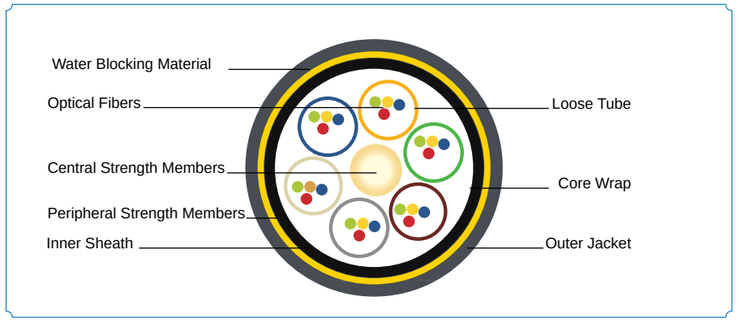
ADBN6024	ADBN5024	ADBN1024	ADBN4024	24	12	2	13.4	134	268	144
ADBN6036	ADBN5036	ADBN1036	ADBN4036	36	12	3	13.4	134	268	145
ADBN6048	ADBN5048	ADBN1048	ADBN4048	48	12	4	13.4	134	268	147
ADBN6096	ADBN5096	ADBN1096	ADBN4096	96	12	8	14.6	146	292	179
ADBN6144	ADBN5144	ADBN1144	ADBN4144	144	12	12	17.2	172	344	320
ADBN6192	ADBN5192	ADBN1192	ADBN4192	192	24	8	16.0	160	320	414
ADBN60288	ADBN5288	ADBN1288	ADBN4288	288	24	12	19.0	190	380	355



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DIRECT BURIED METALLIC F.O. CABLE

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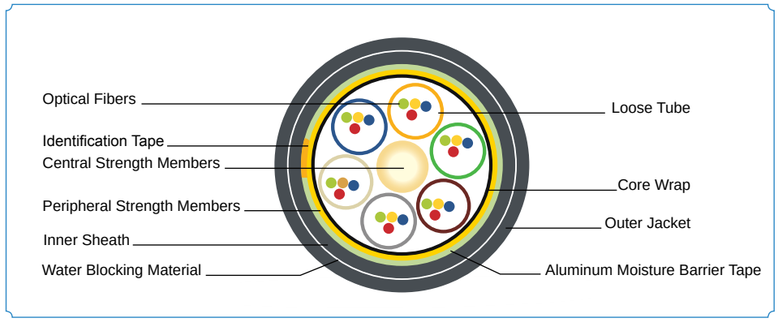
ADBM6012	ADBM5012	ADBM1012	ADBM4012	12	12	1	13.1	131	262	141
ADBM6024	ADBM5024	ADBM1024	ADBM4024	24	12	2	13.1	131	262	142
ADBM6036	ADBM5036	ADBM1036	ADBM4036	36	12	3	13.1	131	262	144
ADBM6048	ADBM5048	ADBM1048	ADBM4048	48	12	6	13.1	131	262	145
ADBM6096	ADBM5096	ADBM1096	ADBM4096	96	12	8	14.2	143	286	186
ADBM6144	ADBM5144	ADBM1144	ADBM4144	144	12	12	16.5	160	330	255



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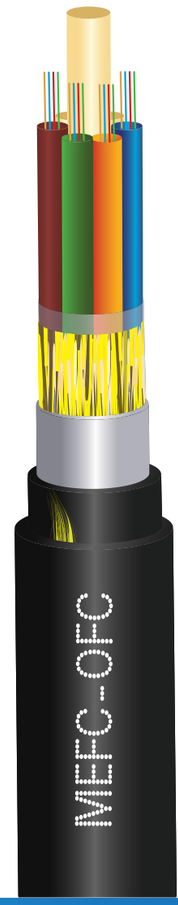
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.



STEEL TAPE ARMOURED (SINGLE SHEATH) F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap - Peripheral Strength Members - Water Blocking Material - Corrugated Steel Tape Armour - Polyethylene Outer Jacket.

DESCRIPTION

MEFC offers steel tape armored optical cable, which has been popular cabling solution for outside plant applications.
Corrugated Steel Tape and robust Polyethylene Outer Jacket combine to deliver rugged durability and added rodent resistance.

APPLICATIONS

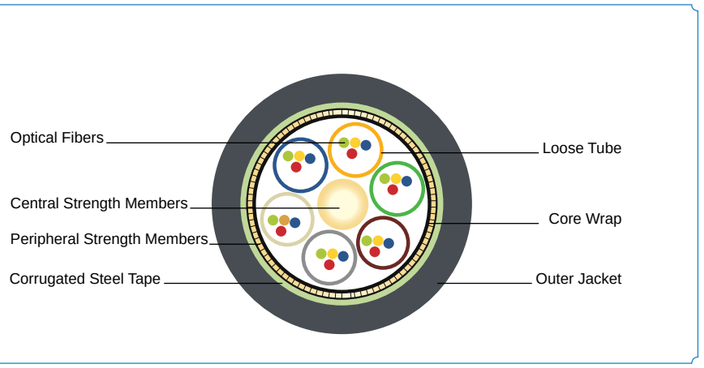
Rodent resistance - Direct buried installation - Data, Video, voice, Transmission.

FEATURES AND BENEFITS

- Supports all grades of single mode and multimode fibers.
- Offers excellant crush resistance.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AAMM6004	AAMM5004	AAMM1004	AAMM4004	4	4	1	12.2	122	244	146
AAMM6008	AAMM5008	AAMM1008	AAMM4008	8	4	2	12.2	122	244	147
AAMM6012	AAMM5012	AAMM1012	AAMM4012	12	12	1	12.2	122	244	147
AAMM6024	AAMM5024	AAMM1024	AAMM4024	24	12	2	12.2	122	244	148
AAMM6036	AAMM5036	AAMM1036	AAMM4036	36	12	3	12.2	122	244	150
AAMM6048	AAMM5048	AAMM1048	AAMM4048	48	12	4	12.2	122	244	157
AAMM6096	AAMM5096	AAMM1096	AAMM4096	96	12	8	13.5	135	270	204
AAMM6144	AAMM5144	AAMM1144	AAMM4144	144	12	12	16.0	160	320	262



Notes:

1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

STEEL TAPE ARMOURED (DOUBLE SHEATH) F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap - Peripheral Strength Members - Water Blocking Material -Polyethylene Inner Jacket Corrugated Steel Tape Armour - Polyethylene Outer Jacket.

DESCRIPTION

MEFC offers steel tape armored optical cable, which has been popular cabling solution for outside plant applications.
Corrugated Steel Tape and robust Polyethylene Outer Jacket combine to deliver rugged durability and added rodent resistance.

APPLICATIONS

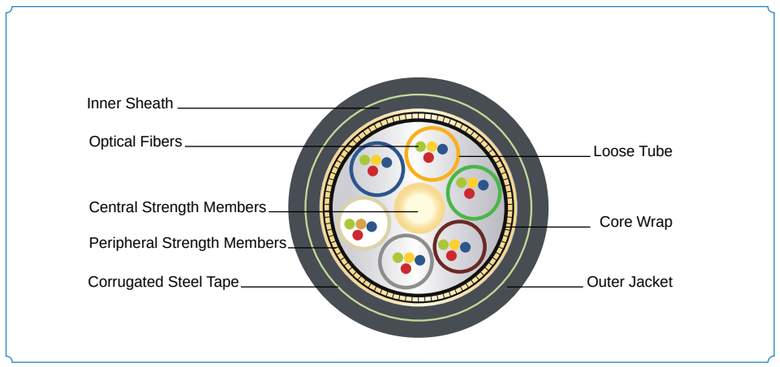
Rodent resistance - Direct buried installation - Data, Video, voice, Transmission.

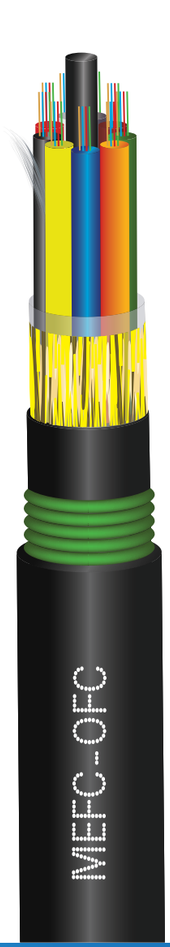
FEATURES AND BENEFITS

- Supports all grades of single mode and multimode fibers.
- Offers excellant crush resistance and projects from Rodent attacks.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AAMM6004	AAMM5004	AAMM1004	AAMM4004	4	4	1	14.6	146	292	203
AAMM6008	AAMM5008	AAMM1008	AAMM4008	8	4	2	14.6	146	292	204
AAMM6012	AAMM5012	AAMM1012	AAMM4012	12	12	1	14.6	146	292	205
AAMM6024	AAMM5024	AAMM1024	AAMM4024	24	12	2	14.6	146	292	206
AAMM6036	AAMM5036	AAMM1036	AAMM4036	36	12	3	14.6	146	292	207
AAMM6048	AAMM5048	AAMM1048	AAMM4048	48	12	4	14.6	146	146	210
AAMM6096	AAMM5096	AAMM1096	AAMM4096	96	12	8	15.9	159	318	245
AAMM6144	AAMM5144	AAMM1144	AAMM4144	144	12	12	18.3	183	366	324





Notes:

1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

STEEL TAPE DOUBLE ARMOURED F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap - Peripheral Strength Members - Polyethylene inner sheath - Corrugated Steel Tape Armour - Polyethylene intermediates sheath - Corrugated Steel Tape Armour - Polyethylene Outer Jacket.

DESCRIPTION

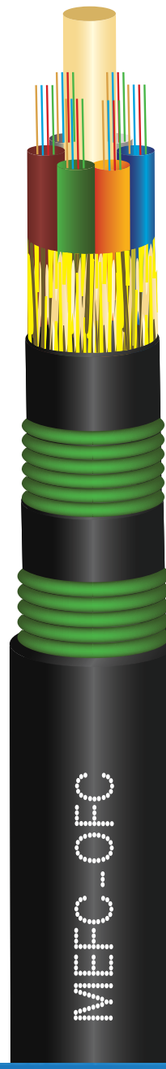
MEFC offers steel tape armored optical cable, rugged and heavy-duty fiber which has been popular cabling solution for harsh enviroment.
Corrugated Steel Tape and robust double Polyethylene Outer Jacket combine to deliver rugged durability and added rodent resistance.

APPLICATIONS

Rodent resistance - Heavy Duty - Data, Video, voice, Transmission.

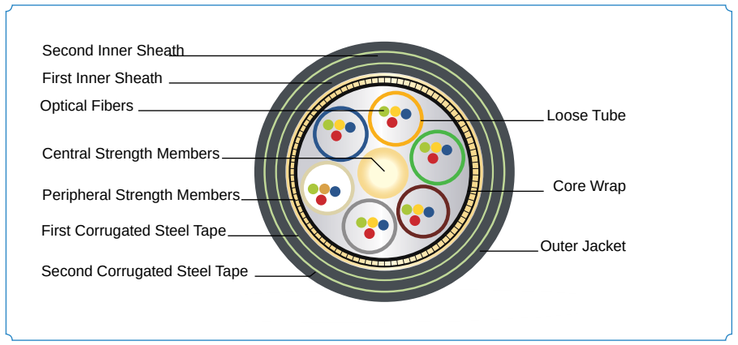
FEATURES AND BENEFITS

- Supports all grades of single mode and multimode fibers.
- Offers excellant crush resistance.
- For lying in harsh environment.



Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AAMM6004	AAMM5004	AAMM1004	AAMM4004	4	4	1	16.3	163	326	267
AAMM6008	AAMM5008	AAMM1008	AAMM4008	8	4	2	16.3	163	326	267
AAMM6012	AAMM5012	AAMM1012	AAMM4012	12	12	1	16.3	163	326	267
AAMM6024	AAMM5024	AAMM1024	AAMM4024	24	12	2	16.3	163	326	268
AAMM6036	AAMM5036	AAMM1036	AAMM4036	36	12	3	16.3	163	326	269
AAMM6048	AAMM5048	AAMM1048	AAMM4048	48	12	4	16.3	163	326	270
AAMM6096	AAMM5096	AAMM1096	AAMM4096	96	12	8	17.5	175	350	302
AAMM6144	AAMM5144	AAMM1144	AAMM4144	144	12	12	20.0	200	400	379



Notes:

1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

STEEL TAPE ARMOURED MONO TUBE F.O. CABLE

CABLE CONSTRUCTION

Fiber in Loose Tubes filled with Gel - Peripheral Strength Members - Corrugated Steel Tape Armour - Steel Wires Embedded in Polyethylene Outer Jacket.

DESCRIPTION

MEFC offers flexible and coast effective mono tube design for outdoor applications.
Optical Fibers are bundled in a single tube, and a required tensile strength is obtained without strength memr using two supporting steel wires. For specific applications MEFC offer all dielectric mono tube design.

APPLICATIONS

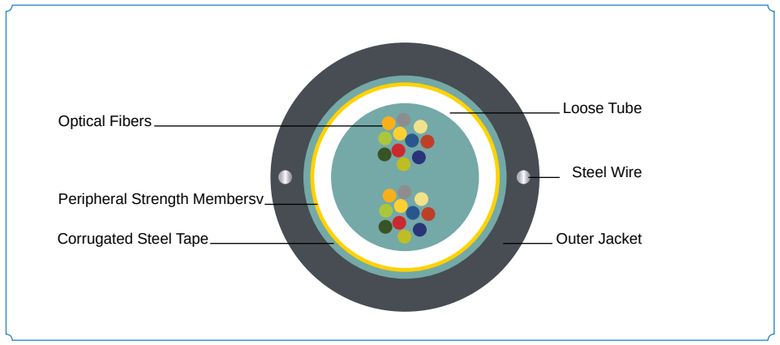
Rodent resistance - Data, Video, voice, Transmission.

FEATURES AND BENEFITS

- Flexible and light weight, intallation frindly.
- Coast effective.
- Rodent resistant.

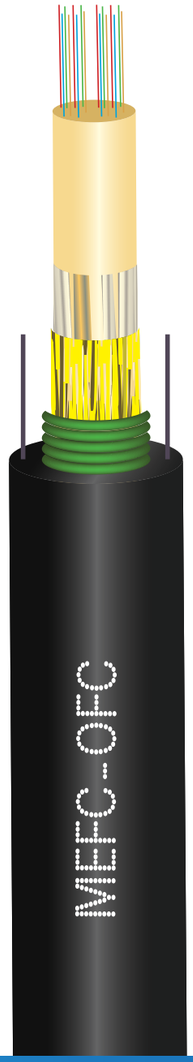
Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AAMM6004	AAMM5004	AAMM1004	AAMM4004	4	4	1	14.4	144	288	170
AAMM6008	AAMM5008	AAMM1008	AAMM4008	8	4	2	14.4	144	288	170
AAMM6012	AAMM5012	AAMM1012	AAMM4012	12	4	3	14.4	144	288	171
AAMM6024	AAMM5024	AAMM1024	AAMM4024	24	4	6	14.4	144	288	172



Notes:

1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.



SEMI CONDUCTIVE SHEATH ARMOURED F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap - Peripheral Strength Members - Polyethylene inner sheath - Corrugated Steel Tape - Polyethylene sheath - Semi conductive PVC Outer Jacket.

DESCRIPTION

MEFC Semi conductive sheath Armoured F.O. Cable offers a good protection of high voltage effects, usually layered near High voltage lines. These cables contains loose tube structured cables, over lapped with corrugated steel tape. Double sheathed by polyethylene and special type of Semi conductive material.

APPLICATIONS

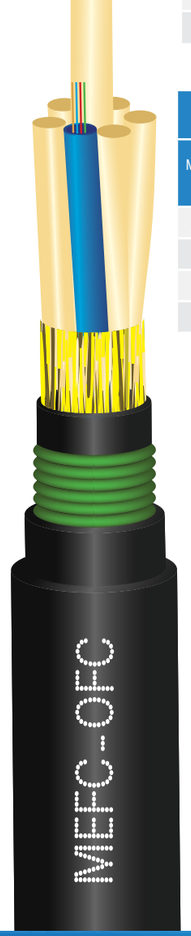
Petro Chemical plant - Junction communication sysytem, LANs - Direct Buried installation.

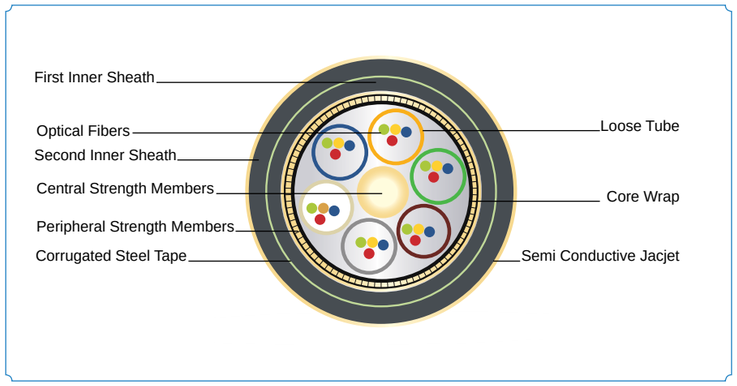
FEATURES AND BENEFITS

- Semi conductive sheath protection from high voltage to the metal part of the cables.
- High tensile and compressive strength.
- Anti rodent protection.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AAMM6004	AAMM5004	AAMM1004	AAMM4004	4	4	1	18.6	279	372	328
AAMM6008	AAMM5008	AAMM1008	AAMM4008	8	4	2	18.6	279	372	329
AAMM6012	AAMM5012	AAMM1012	AAMM4012	12	12	1	18.6	279	372	330
AAMM6024	AAMM5024	AAMM1024	AAMM4024	24	12	2	18.6	279	372	333





Notes:

1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

HYBRID F.O. CABLE

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Copper pair along with loose tubes stranded around steel Central Strength Member - Interstices filled with Gel - Core Wrap - Peripheral Strength Members -Aluminum Moisture Barrier Tape - Polyethylene Outer Jacket.

DESCRIPTION

MEFC offers a robust, highly reliable cable solution for a wide range of demanding outside pkant applicationsm including direct buried and Rocky terrain. The cable consists of fibers with Insulated copper pair, Insulated with Polyethylene Jacket.

APPLICATIONS

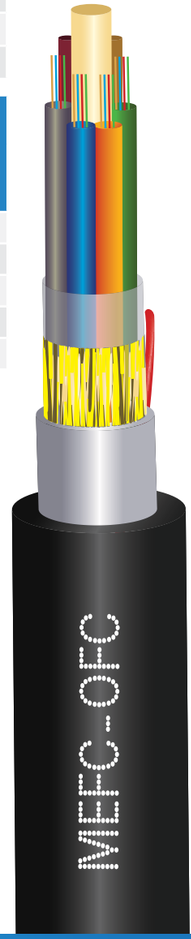
Enables altemate comunication - Moisture Resistant - Junction Comunication System, Subscriber Network System.

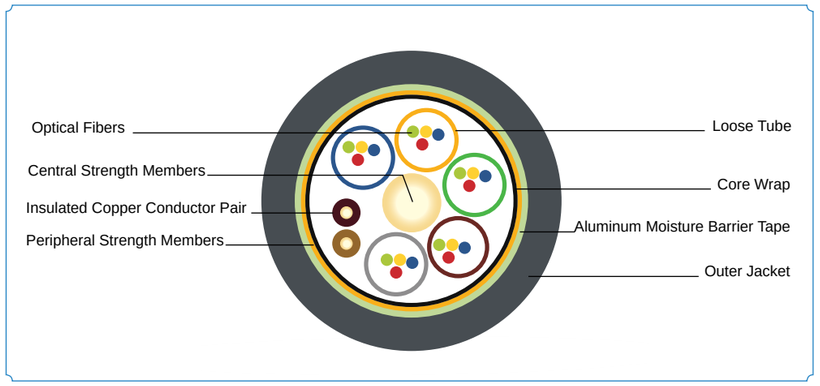
FEATURES AND BENEFITS

- Applicable for remote stations - where ditribution of power cables are difficult..
- Excellant Chemical resistant outer cable jacket for inside/outside plant environment.
- composite cable can be utilized for both applications in power and data applications.
- Supports all grade of single mode and multi mode fibers.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AHBM6004	AHBM5004	AHBM1004	AHBM4004	4	4	1	12.1	121	242	167
AHBM6008	AHBM5008	AHBM1008	AHBM4008	8	4	2	12.1	121	242	168
AHBM6012	AHBM5012	AHBM1012	AHBM4012	12	12	1	12.1	121	242	169
AHBM6024	AHBM5024	AHBM1024	AHBM4024	24	12	2	12.1	121	242	171
AHBM6036	AHBM5036	AHBM1036	AHBM4036	36	12	3	13.7	137	374	209





Notes:

1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

FIRE RESISTANT F.O. CABLE

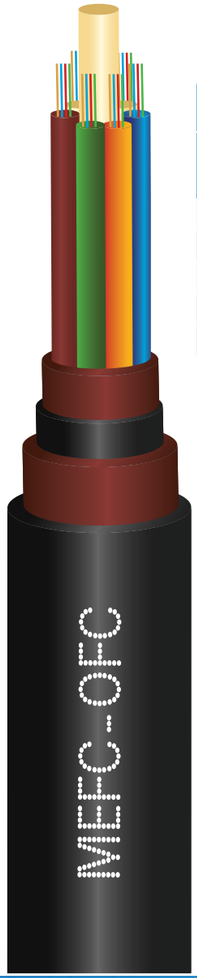
CABLE CONSTRUCTION
Loose Tubes filled with Gel - Stranded around Steel Central Strength Member -Core Wrap with Water Blocking Mica Tape -Low Smoke Zero Halogen Inner Sheath - Mica Tape - Low Smoke Zero Halogen Outer Sheath.

DESCRIPTION
MEFC offers special type of Fire resistant cables for application in Oil and Gas Industries and other Petrochemical Industries for higher resistance. This Core is wrapped with mica tape, which is having excellent characteristics of fire resistance. All

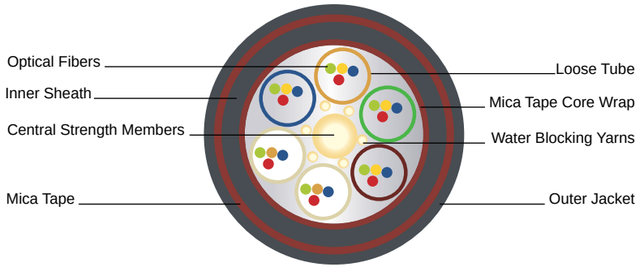
APPLICATIONS
- Halogen Free, High Resistance to ignition - Low Heath of Combustion - Low Toxic and corrosive gas emission, Control, Alarm Systems, Data, Video Transmission.

FEATURES AND BENEFITS
• High temperature and Explosive Environments.
• Extra heavy duty compressive strength.
• Halogen free, less toxic and hazardous when exposed fire.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	



Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AFRN6004	AFRN5004	AFRN1004	AFRN4004	4	4	1	16.1	241	322	355
AFRN6008	AFRN5008	AFRN1008	AFRN4008	8	4	2	16.1	241	322	357
AFRN6012	AFRN5012	AFRN1012	AFRN4012	12	12	1	16.1	241	322	359
AFRN6024	AFRN5024	AFRN1024	AFRN4024	24	12	2	16.1	241	322	362
AFRN6036	AFRN5036	AFRN1036	AFRN4036	36	12	3	17.3	259	346	406



Notes:
1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

ADSS AERIAL F.O. CABLE

CABLE CONSTRUCTION
Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel - Core Wrap -Polyethylene Inner Sheath - Peripheral Strength Members - Polyethylene Outer Jacket.

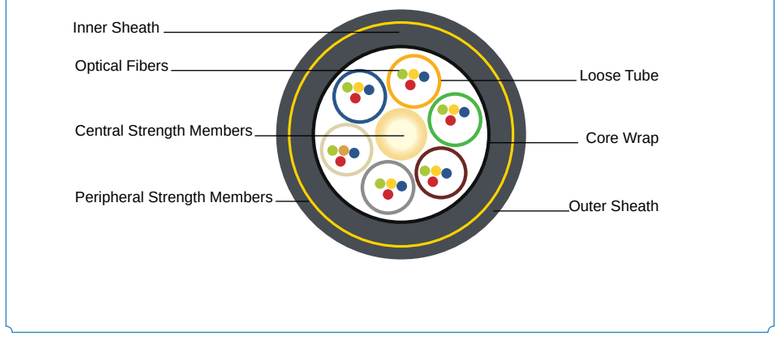
DESCRIPTION
MEFC ADSS F.O. Cables are solution for high performance aerial environments including power transmission and distribution networks, All — Dielectric construction reduces installation costs, by avoiding the need for expensive cable shielding and grounding.

APPLICATIONS
- Aerial Installation - Lightening Protection - Junction Communication System, Subscriber Network System.

FEATURES AND BENEFITS
• Supports all grades of single and multimode fibers
• Cable round Profile minimizes wind loading and tensile and ice loading.(Reducing cable sag and tensile force
• All Dielectric loose tube design in immune to Electro Magnetic Interference.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
AALN6004	AALN5004	AALN1004	AALN4004	4	4	1	14.4	144	288	165
AALN6008	AALN5008	AALN1008	AALN4008	8	4	2	14.4	144	288	166
AALN6012	AALN5012	AALN1012	AALN4012	12	12	1	14.4	144	288	166
AALN6024	AALN5024	AALN1024	AALN4024	24	12	2	14.4	144	288	168
AALN6036	AALN5036	AALN1036	AALN4036	36	12	3	15.5	155	310	198



Notes:
1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

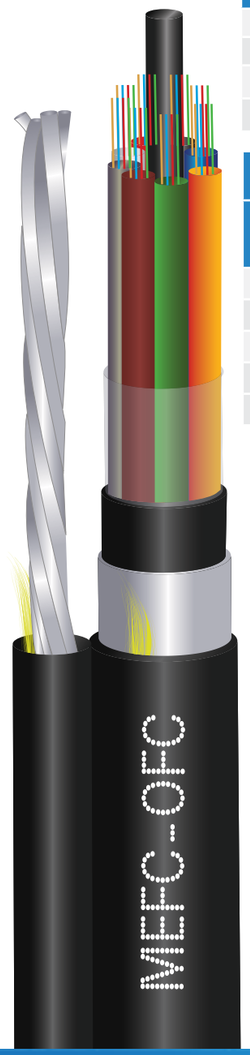
AERIAL ARMOURED FIG -8 F.O. CABLE (METALLIC)

CABLE CONSTRUCTION
Loose Tubes filled with Gel - Stranded around Central Strength Member - Core Wrap - Polyethylene Inner Sheath - Aluminum Moisture Barrier Tape - Messenger Wire embedded Polyethylene Outer Jacket.

DESCRIPTION
MEFC Fig — 8 Cables are self-supporting cables designed for aerial installation. The Cable design provides easy and economical one- step Installation and Stable performance over a wide temperature range. The Whole tensile load is borne by steel messenger wire.

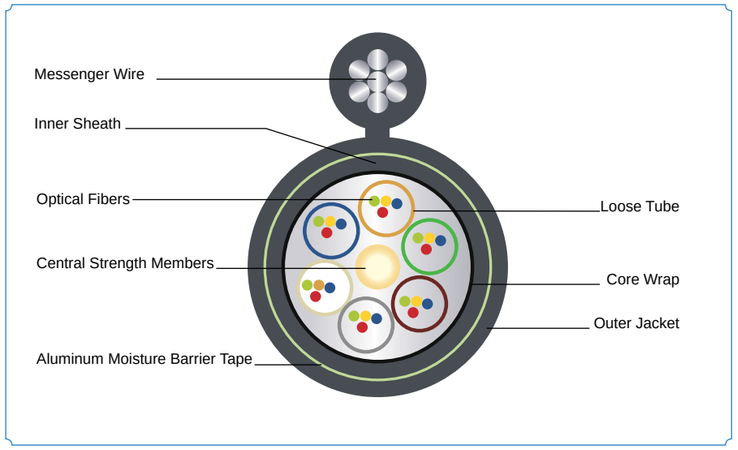
APPLICATIONS
- Aerial Installation - High Mechanical Strength - Data, Voice, Video Transmission

FEATURES AND BENEFITS
• Small Diameter and Light Weight
• Double Jacket single armor construction provides additional crush and mechanical Protection
• Compatible for any telecommunication grade optical fiber.



Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Loose Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 / (G656)					No Load	Under Load	
AALM6004	AALM5004	AALM1004	AALM4004	4	4	1	23.5 x 13.2	132	264	323
AALM6008	AALM5008	AALM1008	AALM4008	8	4	2	23.5 x 13.2	132	264	324
AALM6012	AALM5012	AALM1012	AALM4012	12	12	1	23.5 x 13.2	132	264	326
AALM6024	AALM5024	AALM1024	AALM4024	24	12	2	23.5 x 13.2	132	264	352
AALM6036	AALM5036	AALM1036	AALM4036	36	12	3	23.5 x 13.2	132	264	392



Notes:
1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

INDOOR SIMPLEX F.O. CABLE

CABLE CONSTRUCTION
900 urn Tight Buffer - Peripheral Strength Members - Riser / Plenum Orange Color Jacket.

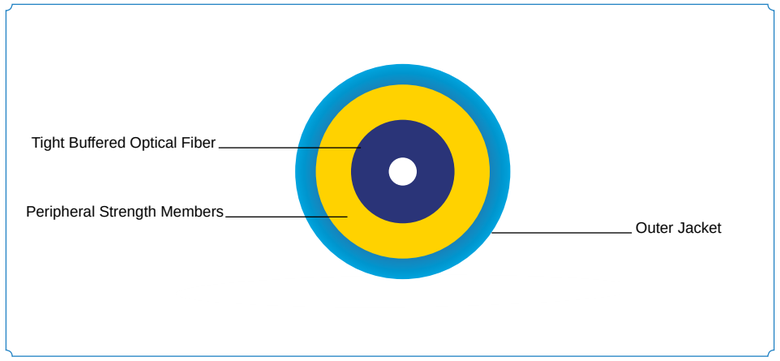
DESCRIPTION MEFC
Simplex cables for indoor applications are flexible enough to handle easily in any interconnect vs cross connect applications in the central office, equipment room. The main construction of these cables consists of flexible tight-buffered material, extended over the fibers surrounded with aramid yarns for additional protection and strength.

APPLICATIONS
- Pigtail and Patch cords - Factory Automation, Inter office - Aircraft and marine systems.

FEATURES AND BENEFITS
• Used for Pigtails/Patch Cords in central offices, data centers etc.
• Cab be directly terminated to any type of connectors.
• Easier to strip and allows longer lengths of buffer to be removed in single press.
• Both raiser and plenum grades are available.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Tight Buffer Per Cord	No. of Cords	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
BSXR6001	BSXR5001	BSXR1001	BSXR4001	1	1	1	3.0	45	60	9.6



Notes:
1. Other fiber counts are available as per customer requiremants.
2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

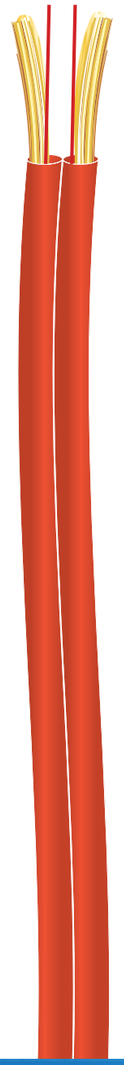
INDOOR ZIP CORD F.O. CABLE

CABLE CONSTRUCTION
900 um Tight Buffer - Peripheral Strength Members - Riser / Plenum Orange Color Jacket.

DESCRIPTION
MEFC zip cord indoor type cables are designed for two way communication, provides excellent transmission performance, flexibility and connectivity for optical network systems in a variety of installation environments. The tight buffers are color coded for easy Identification during termination.

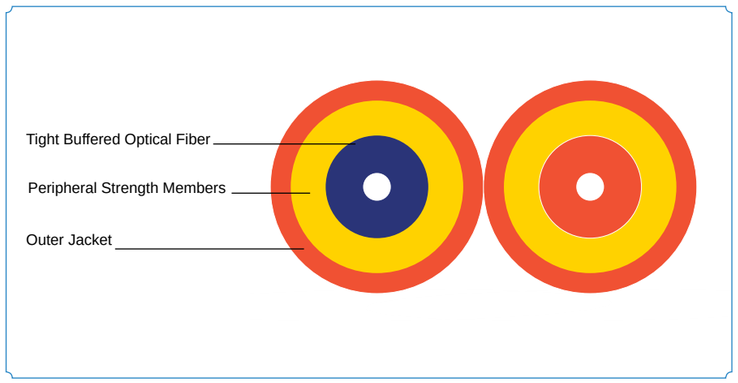
APPLICATIONS
- Pigtail and Patch cords - Factory Automation, Inter office - Aircraft and marine systems.

FEATURES AND BENEFITS
• Eases installation and space constrained area
• Ensures lower total installation costs
• Used in LAN, SAN equipment rooms
• Small size lightweight and versatile installation capability.



Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40°c to + 70°C.
	Operating temperature : 40°c to +70°C
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40°C to 70°C
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Tight Buffer Per Cord	No. of Cords	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
BZCR6002	BZCR5002	BZCR1002	BZCR4002	2	1	2	6.0 x 3.0	61	92	21
BZCR6002	BZCR5002	BZCR1002	BZCR4002	2	1	2	4.0 x 2.0	61	92	10



Notes:
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2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

FLAT DROP CABLE

CABLE CONSTRUCTION
Optical Fiber ARP strength member are placed at two sides.

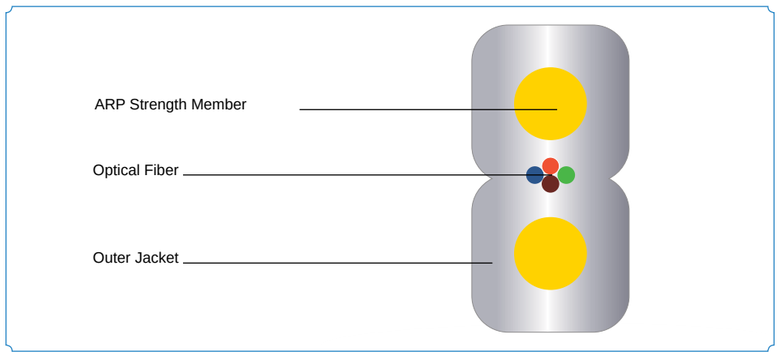
DESCRIPTION MEFC
MEFC flat drop cable for FTTH applications are flexible enough to handle easily in any interconnection or cross connect applications in the central office, equipment room.

APPLICATIONS
- Internal FTTH applications horizontal and riser clipping to surfaces including skirting boards.

FEATURES AND BENEFITS
• To bend sensitivity fiber provides high bandwidth and good communication.
• Easier to strip and splice, simplify the installation and maintenance.
• Small size lightweight and versatile installation capability.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40°c to + 70°C.
	Operating temperature : 40°c to +70°C
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40°C to 70°C
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Tight Buffer Per Cord	No. of Cords	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G657 A)	SMNZDS (G655 /(G656)					No Load	Under Load	
BFDR6002	BFDR5002	BFDR1002	BFDR3002	2	---	---	2 x 3	20	30	7.30
BFDR6004	BFDR5004	BFDR1004	BFDR3004	4	---	---	2 x 3	20	30	7.30



Notes:
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3. Jacket metered can be customized on customer requirements.

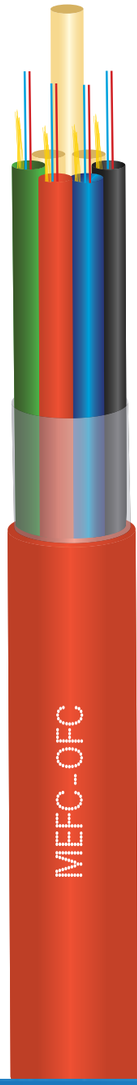
INDOOR BREAKOUT F.O. CABLE

CABLE CONSTRUCTION
Sub Units with Tight Buffers and Peripheral Strength Members - Stranded around Central Strength Member - Core Wrap —Orange Color Jacket.

DESCRIPTION
MEFC Indoor Breakout Cable provides excellent transmission performance, flexibility and connectivity for optical network systems in a variety of installation environments.

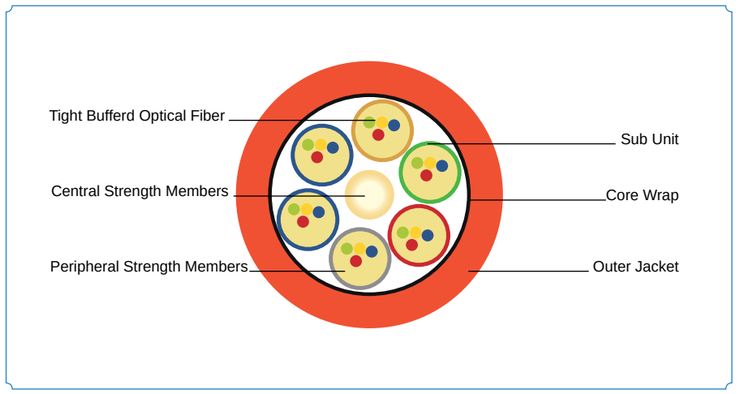
APPLICATIONS
- LAN, CCTV -Direct Termination of Fibers -Plenum and Riser.

FEATURES AND BENEFITS
• Small size lightweight and versatile installation capability.
• Eases installation and space constrained areas.
• Lower Installation costs.
• LSZH — Low smoke zero halogen out jacket protects fibers from flame.
• Reduce smoke emissions and flame spreading.
• Available in both riser and plenum grades.



Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40°c to + 70°C.
	Operating temperature : 40°c to +70°C
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40°C to 70°C
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Tight Buffer Per Cord	No. of Cords	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
BBOR6024	BBOR5024	BBOR1024	BBOR4024	24	6	4	15.1	151	302	191
BBOR6036	BBOR5036	BBOR1036	BBOR4036	36	12	3	18.1	181	362	282
BBOR6048	BBOR5048	BBOR1048	BBOR4048	48	12	4	19.1	191	382	325
BBOR6072	BBOR5072	BBOR1072	BBOR4072	72	12	6	22.0	220	440	400



Notes:
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3. Jacket metered can be customized on customer requirements.

INDOOR BACKBONE F.O. CABLE

CABLE CONSTRUCTION
Tight Buffers surrounded by Peripheral Strength Members - Orange Color Jacket.

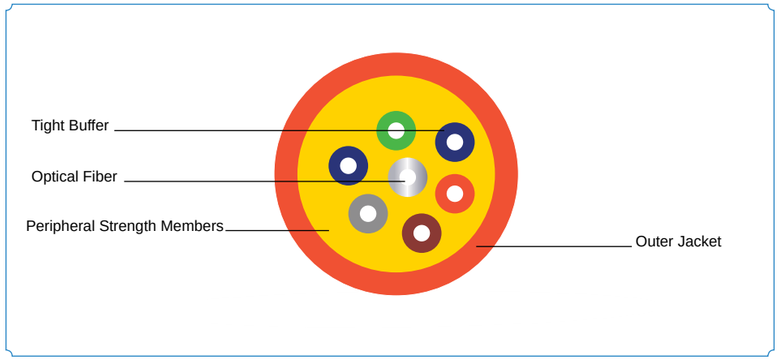
DESCRIPTION
MEFC Indoor distribution cables dry core, which is available both plenum and rise grade, The peripheral strength members mostly aramid yarns provide excellent tensile load for cable.

APPLICATIONS
• LAN, CCTV — Direct termination of fibers - Plenum and Riser

FEATURES AND BENEFITS
• Flexible light weight.
• Eases installation and space constrained areas.
• Ensures lower total installation costs.
• Used in LAN, SAN equipment rooms.
• Offers all grades of multi mode and single mode fibers.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40°c to + 70°C.
	Operating temperature : 40°c to +70°C
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40°C to 70°C
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Tight Buffer Per Cord	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)				No Load	Under Load	
BDBN6002	BDBN5002	BDBN1002	BDBN4002	2	2	3.1	47	62	8.3
BDBN6004	BDBN5004	BDBN1004	BDBN4004	4	4	6.1	91	122	35
BDBN6008	BDBN5008	BDBN1008	BDBN4008	8	8	7.0	105	140	44
BDBN6010	BDBN5010	BDBN1010	BDBN4010	10	10	9.0	135	180	57
BDBN6012	BDBN5012	BDBN1012	BDBN4012	12	12	9.0	135	180	62



Notes:
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3. Jacket metered can be customized on customer requirements.

INDOOR OUTDOOR DRY OF CABLE (Tight Buffer Type)

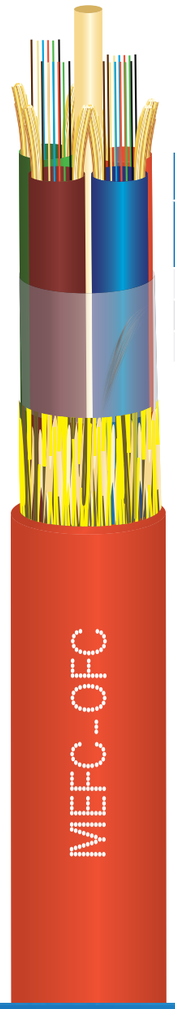
CABLE CONSTRUCTION
Sub Units with Tight Buffers and Water Blocking Binder Stranded around Central Strength Member- Core Wrap—Peripheral Strength Members UV Resistant LSZH Outer Jacket.

DESCRIPTION
MEFC Indoor Breakout Cable provides excellent transmission performance, flexibility and connectivity for optical network systems in a variety of installation environments.

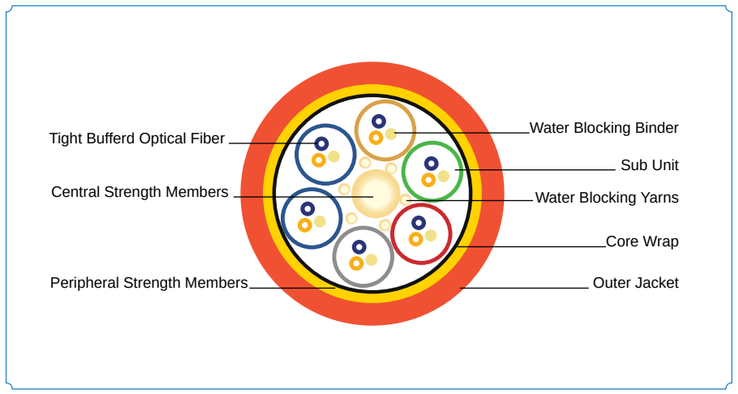
APPLICATIONS
• LAN, CCTV -Direct Termination of Fibers -Plenum and Riser.

FEATURES AND BENEFITS
• Small size lightweight and versatile installation capability.
• Eases installation and space constrained areas.
• Lower Installation costs.
• LSZH — Low smoke zero halogen out jacket protects fibers from flame.
• Reduce smoke emissions and flame spreading.
• Available in both riser and plenum grades.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	



Cable code				Fiber Count	Tight Buffer Per Cord	No. of Cords	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
IDUN6004	IDUN5004	IDUN1004	IDUN4004	4	2	2	14.8	222	296	177
IDUN6008	IDUN5008	IDUN1008	IDUN4008	8	2	4	14.8	222	296	178
IDUN6012	IDUN5012	IDUN1012	IDUN4012	12	2	6	14.8	222	296	179



Notes:
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3. Jacket metered can be customized on customer requirements.

INDOOR OUTDOOR OF CABLE

CABLE CONSTRUCTION
Tight Buffered Simplex Cords Sub Unit - Stranded around Central Strength Member - Core Wrap —Flame Retardant Inner Sheath —Corrugated Steel Tape — Flame Retardant Outer Jacket.

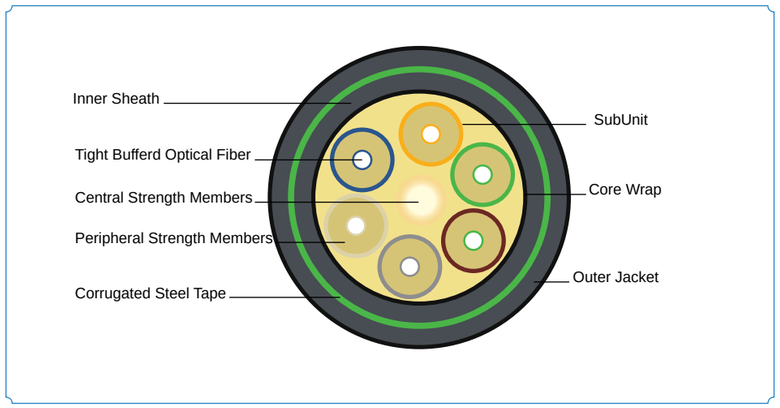
DESCRIPTION
MEFC Indoor /Outdoor armored cable offers excellent tensile strength for both Indoor and Outdoor applications. Suitable for building-to-building short distance inter connected applications. MEFC Indoor /Outdoor armored cable offers excellent resistance for rodent attacks.

APPLICATIONS
- Rodent Resistant — Indoor and Outdoor Installation — Direct Buried Installation

FEATURES AND BENEFITS
• Avoids splicing and connecting between Indoor and Outdoor Multi applications.
• Light weight and flexible.
• Both raiser and plenum grades are available.
• Supports all grades of multi mode and single mode fibers.
• Rodent resistant.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40ºc to + 70ºC.
	Operating temperature : 40ºc to +70ºC
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40ºC to 70ºC
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Tight Buffer Per Sub Unit	No. of Active Sub Units	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
IAMM6004	IAMM5004	IAMM1004	IAMM4004	4	1	1	17.4	261	348	274
IAMM6008	IAMM5008	IAMM1008	IAMM4008	8	2	4	17.4	261	348	275
IAMM6012	IAMM5012	IAMM1012	IAMM4012	12	2	6	17.4	261	348	277



Notes:
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3. Jacket metered can be customized on customer requirements.

MICRODUCT (Air Blown Cables)

CABLE CONSTRUCTION

Loose Tubes filled with Gel - Stranded around Central Strength Member - Interstices filled with Gel / water blocking yours -Polyethylene Outer Jacket

DESCRIPTION

The construction of the non-metallic cables begins with our proven loose tube design. The loose tube provides protection against environmental and mechanical forces. This smaller diameter cable is light weight and suitable enough for microwave duct and conduit use.

APPLICATIONS

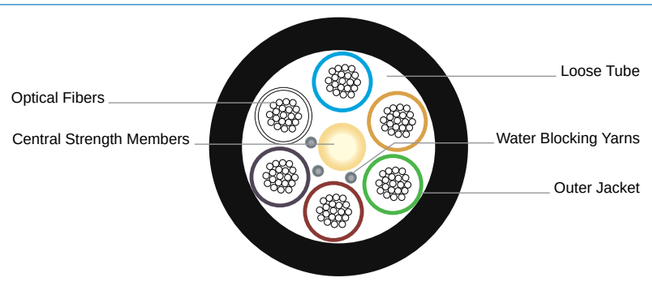
Inter Office Trunking, Data, Video Transmission, Control /Alarm System - Light Weight and Flexible - Blowing in Micro Ducts and Concrete

FEATURES AND BENEFITS

- Suitable for conduits and pipelines for long haul applications.
- Supports all grades of single mode and multimode fibers.
- It can be laid in vicinity of power cables.
- No additional grounding is required, at vicinity of power lines and lighting risks.
- Telemetry and SCADA links for oil & gas, electricity.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40°c to + 70°C.
	Operating temperature : 40°c to +70°C
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40°C to 70°C
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
ADFN6004	ADFN5004	ADFN1004	ADFN4004	4	4	1	4.8	48	72	19
ADFN6008	ADFN5008	ADFN1008	ADFN4008	8	4	2	6.0	60	90	27
ADFN6012	ADFN5012	ADFN1012	ADFN4012	12	12	1	6.0	60	90	27
ADFN6024	ADFN5024	ADFN1024	ADFN4024	24	12	2	6.0	60	90	28
ADFN6036	ADFN5036	ADFN1036	ADFN4036	36	12	3	6.0	60	90	30
ADFN6048	ADFN5048	ADFN1048	ADFN4048	48	12	4	6.0	60	90	31
ADFN6060	ADFN5060	ADFN1060	ADFN4060	60	12	5	6.0	60	90	33
ADFN6072	ADFN5072	ADFN1072	ADFN4072	72	12	6	6.0	60	90	34
ADFN6096	ADFN5096	ADFN1096	ADFN4096	96	12	8	6.0	60	105	55
ADFN6144	ADFN5144	ADFN1144	ADFN4144	144	12	12	9.0	90	135	82



Notes:

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2. Customized cables can be manufactured as per customer requirements in cable constructions and performance and optical charachteristics.
3. Jacket metered can be customized on customer requirements.

DRY LOOSE TUBE CABLE

CABLE CONSTRUCTION

Dry Loose Tubes - Stranded around Central Strength Member - Water blocking yarns - Water swellable tape - Anti Rodent Glass Yarns, Peripheral Strength Members- Flame retardant jacket

DESCRIPTION

The construction of the non-metallic cables begins with our proven dry loose tube & dry core design . Suitable enough for duct and indoor/ outdoor application.

APPLICATIONS

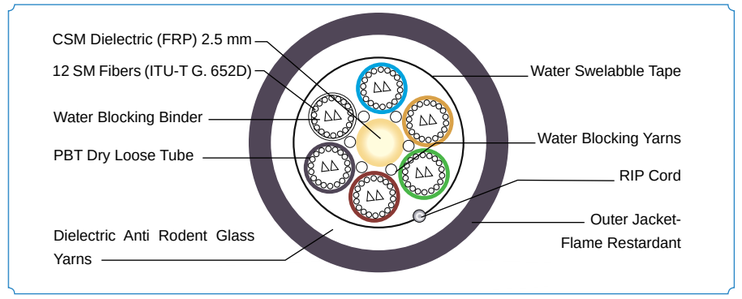
Inter Office Trunking, Data, Video Transmission, Control /Alarm System - Light Weight and Flexible - Blowing in Micro Ducts and Concrete

FEATURES AND BENEFITS

- Suitable for ducts / indoor / outdoor.
- Supports all grades of single mode and multimode fibers.
- It can be laid in vicinity of power cables.
- No additional grounding is required, at vicinity of power lines and lighting risks.
- Telemetry and SCADA links for oil & gas, electricity.

Standards	Performance Characteristics
Reference standards: Industry standard.	Storage temperature : 40°c to + 70°C.
	Operating temperature : 40°c to +70°C
FIBER /Tube Colours : as per IEC 60304	Installation temperature : 40°C to 70°C
Testing Procedures : IEC-607941- (or) EIA/TIA-455	

Cable code				Fiber Count	Fiber Per Tube	No. of Active Loose Tubes	Outer Dia(mm)	Min. bending Radius (mm)		Net Weight (kg/km)
MM 50/125um (G651)	MM 62.5/ 125um (G651)	SM DISP. Unshifted (G652)	SMNZDS (G655 /(G656)					No Load	Under Load	
IDUN6004	IDUN5004	IDUN1004	IDUN4004	4	4	1	12.4	186	248	136
IDUN6008	IDUN5008	IDUN1008	IDUN4008	8	4	2	12.4	186	248	135
IDUN6012	IDUN5012	IDUN1012	IDUN4012	12	12	1	12.4	186	248	137
IDUN6024	IDUN5024	IDUN1024	IDUN4024	24	12	2	12.4	186	248	138
IDUN6036	IDUN5036	IDUN1036	IDUN4036	36	12	3	12.4	186	248	137
IDUN6048	IDUN5048	IDUN1048	IDUN4048	48	12	4	12.4	186	248	138
IDUN6060	IDUN5060	IDUN1060	IDUN4060	60	12	5	12.4	186	248	139
IDUN6072	IDUN6072	IDUN1072	IDUN4072	72	12	6	12.4	186	248	141
IDUN6096	IDUN6096	IDUN1096	IDUN4096	96	12	8	13.9	209	278	165
IDUN6144	IDUN6144	IDUN1144	IDUN4144	144	12	12	17.0	255	340	245



Notes:

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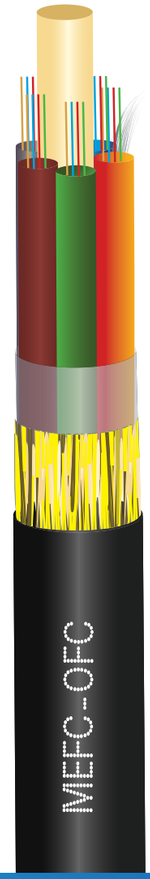

MEFC CONNECTORS

ST

SC

FC

LC

- Multi-mode Fiber (Beige)
- Single-mode Fiber (Blue)
- Angled Fiber Connectors (Green)

APPLICATIONS

- FTTX, Gpon, Epon Technologe
- Telecommunication Networks
- CATV Networks
- Active Device Termination
- Local Area Networks
- Fiber to the home

FEATURES

- Low insertion loss
- Low back reflection loss
- Easy installation
- Environmentally stable

CERTIFICATION AND APPROVALS

Smg
Sustainable Management Group

Certificate of Registration

The Management System of:

Middle East Fiber Cable Manufacturing Co. (MEFC)

Central Region, Second Industrial City, Phase III - 4658 - Unit 1, Riyadh, 14336-7524, Kingdom of Saudi Arabia

Operates an

Environmental Management System

Which complies with the requirements of

ISO 14001:2015

For the following scope of certification

Manufacture and sales of fiber optic cables and accessories.
Originally certified against ISO 14001 on 04 October 2019

EA Code: 19
Certificate of Registration No: SA-10004-EMS

Initial Certification Date:	04 October 2019
Current Certification Date:	16 August 2022
Certificate Issue Date:	16 August 2022
Certificate Expiry Date:	02 October 2025

SIGNATURE

Yevgeniya Mikheyeva
Operations Manager

Registered by:
Sustainable Management Group SMG, 78 George Street, Ottawa Ontario, K1N5W1 Canada
This certificate is subject to the SMG Terms and Conditions for Certification, and remains the property of SMG and must be returned to SMG upon its request.
To verify that this certificate is current, please refer to SMG online certification register at: https://smg-ew.com/inquire-about-your-certificate/

Smg
Sustainable Management Group

Certificate of Registration

The Management System of:

Middle East Fiber Cable Manufacturing Co. (MEFC)

Central Region, Second Industrial City, Phase III - 4658 - Unit 1, Riyadh, 14336-7524, Kingdom of Saudi Arabia

Operates an

Occupational Health & Safety Management System

Which complies with the requirements of

ISO 45001:2018

For the following scope of certification

Manufacture and sales of fiber optic cables and accessories.
Originally certified against ISO 45001 on 04 October 2019

EA Code: 19
Certificate of Registration No: SA-10004-OHSMS

Initial Certification Date:	04 October 2019
Current Certification Date:	16 August 2022
Certificate Issue Date:	16 August 2022
Certificate Expiry Date:	02 October 2025

SIGNATURE

Yevgeniya Mikheyeva
Operations Manager

Registered by:
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Smg
Sustainable Management Group

Certificate of Registration

The Management System of:

Middle East Fiber Cable Manufacturing Co. (MEFC)

Central Region, Second Industrial City, Phase III - 4658 - Unit 1, Riyadh, 14336-7524, Kingdom of Saudi Arabia

Operates a

Quality Management System

Which complies with the requirements of

ISO 9001:2015

For the following scope of certification

Manufacture and sales of fiber optic cables and accessories.
Originally certified against ISO 9001 on 04 October 2019

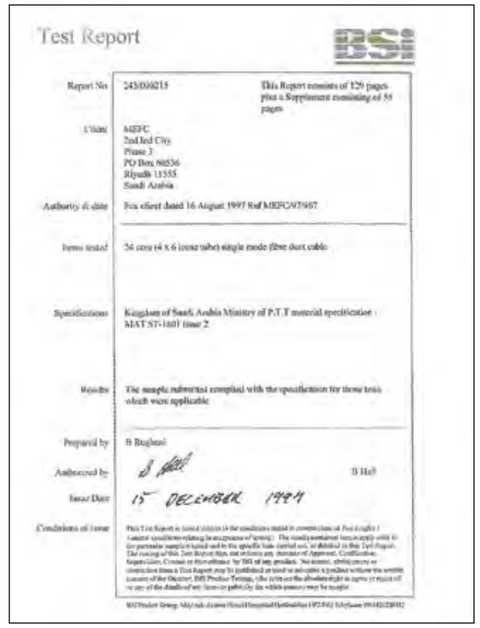
EA Code: 19
Certificate of Registration No: SA-10026-QMS

Initial Certification Date:	04 October 2019
Current Certification Date:	16 August 2022
Certificate Issue Date:	16 August 2022
Certificate Expiry Date:	02 October 2025

SIGNATURE

Yevgeniya Mikheyeva
Operations Manager

Registered by:
Sustainable Management Group SMG, 78 George Street, Ottawa Ontario, K1N5W1 Canada
This certificate is subject to the SMG Terms and Conditions for Certification, and remains the property of SMG and must be returned to SMG upon its request.
To verify that this certificate is current, please refer to SMG online certification register at: https://smg-ew.com/inquire-about-your-certificate/



Test Report

BSI

Report No: 243/000215 — This Report consists of 129 pages plus a Supplement consisting of 55 pages

Client: MEFC
2nd Ind City
Phase 3
PO Box 86536
Riyadh 11555
Saudi Arabia

Authority & date: Fax client dated 16 August 1997 Ref MEFC/97/057

Items tested: 24 core 14 x 6 loose tube) single mode fibre duct cable

Specifications: Kingdom of Saudi Arabia Ministry of P.T.T material specification : MAT ST-1601 issue 2

Results: The sample submitted complied with the specification for those tests which were applicable

Prepared by: S Bagnall

Authorized by: S Hall

Issue Date: 15 DECEMBER 1997

Conditions of Issue:

CERTIFICATIONS AND APPROVALS

ICA

CERTIFICATE OF COMPLIANCE

CE

This Declaration of Compliance is hereby issued to the below named company.

Name: Middle East Fiber Cable Manufacturing Co. (MEFC)

Address: Central Region, Second Industrial City, Phase 3 - 4658 Unit No. 1, Riyadh 14336-7524, K.S.A.

Product Description: As per Appendix 1 & 2

Applicable Directive (s): 2014/30/EU, 2005/618/EC

Applicable Standard (s): IEC 60793-3, IEC 60794-1-2, IEC 60794-2, IEC 60794-3, IEC 60304

Certificate No.: CE2609

Date of initial registration 27-Dec-2021

Recertification due / Certificate expiry 26-Dec-2024

This certificate is issued under following conditions:

The products are declared by the applicant as complying with the applicable directives. ICA has performed a review of the technical information of the product. The applicant is required to inform ICA of any changes to its product design and technical documentation. The applicant can use the CE mark for the list of products mentioned in the Appendix.

The product liability rests with the manufacturer in accordance with their committed specifications and contractual obligations, including applicable standards. Intercontinental Assessments does not accept any liability arising out of this certificate.

Director

"This certificate is the property of Inter Contental Assessment and shall be returned immediately when demanded"

For Verification & Updated Information Concerning the Present certificate visit to

Website: www.icassessments.com
email: contact@icassessments.com

INTER CONTINENTAL ASSESSMENTS
1 Northumberland St, Charing Cross, Westminster, London WC2N 5HR, United Kingdom.

Saudi Arabian Oil Company
Supplier Relationship Management
B-102 North Park 2
Dhahran 31311
Saudi Arabia

Tel.: (966 13) 874-0958
Fax: (966 13) 874-1495

أرامكو السعودية
saudi aramco

August 16, 2021

SQU-038-21

SULEIMAN A. AL HEDAITHI, Managing Director
Middle East Fiber Cable Manufacturing Co
P.O. BOX 733
RIYADH 11383
Fax : 011 265 0203

Mr. Al Hedaithi,

We are pleased to inform you that your company is included in the Saudi Aramco Supplier Information System under Vendor Code No. **10028837**, Plant No. **30003404** for the following products provided your company continues to meet relevant Saudi Arabian and Saudi Aramco standards.

9COM	Description
6000001216	CABLE; COMMUNICATIONS; FIBER OPTIC;

This approval, however, should not be construed as a commitment by Saudi Aramco to purchase from you. Being approved as a supplier only grant your company the opportunity, along with other approved sources, to respond to requests for submitting proposals in accordance with Saudi Aramco's established policies and procedures. All purchase agreements and orders will be issued based on the name and address stated in your commercial registration (CR), as stated above.

Saudi Aramco wishes to remind you that being recognized as a potential supplier is a privilege which carries with it serious obligations and responsibilities to act in a legal and ethical manner. We wish to remind you of the Saudi Aramco Supplier Code of Conduct (SCOC) which you acknowledged. Failure to abide by the principles set forth in the SCOC can result in adverse actions being taken by Saudi Aramco against you including suspension of you as a supplier. Saudi Aramco also expects each of its suppliers to satisfy each of the requirements of any purchase agreements or orders which might be placed and to act responsibly and reliably as a supply chain supplier.

Saudi Aramco: Company General Use

Kingdom of Saudi Arabia
Saudi Consolidated Electric Co.
Central Region
Saudi Joint Stock Co.
Capital S.R. 8,000 Million
C.R. 1010022330

المملكة العربية السعودية
الشركة السعودية الموحدة للكهرباء
بالمنطقة الوسطى
شركة مساهمة سعودية

Our Ref. الرقم ٥٤٦٨
Date التاريخ ١٢ شوال ١٤٢٠

السادة / شركة الشـرق الأوسط لصناعة كابلات الألياف البصرية المحدودة المحترمين
ص.ب ٦٠٥٣٦ الرياض ١١٥٥٥
فاكس ٤٧٨٧٩٧٣

السلام عليكم ورحمة الله وبركاته ......

بالإشارة إلى خطابكم رقم ٩٨/١/مك/١٩٠ بتاريخ ١٩٩٨/٩/٨م والخاص بطلب تـأهيلكم لدى كهرباء الوسطى .

يسرني إفادتكم بأنه تم اعتماد (شركة الشرق الأوسط لصناعة كابلات الألياف البصرية المحدودة) لدى كهرباء الوسطى ضمن قائمة المؤهلين في مجـال تصنيـع كـابلات الأليـاف البصرية (Single mode non metallic under ground optical fibre cable) . آملين أن يكون هذا بداية التعاون المثمر فيما بيننا وتزويدنا بأي معلومات تستجد حول الشركة .

وتقبلوا خالص تحياتي ......

مدير إدارة المواد

المهندس / عبدالله سليمان الريس

صورة : لرئيس لجنة التأهيل
صورة / لأعضاء لجنة التأهيل
صورة : لمدير دائرة المشتريات
الوارد

Head Office : 124 Al-Malek Saud Street, Al-Fouta, P. O. Box 57 - Riyadh 11411

SAUDI CONSOLIDATED ELECTRIC COMPANY
IN THE EASTERN PROVINCE
Saudi Joint Stock Co.

الشركة السعودية الموحدة للكهرباء
في المنطقة الشرقية
شركة مساهمة سعودية

إدارة المـــواد
قسم الشراء والحركة
Material Management Dept
Purchasing & Traffic Division

Date : 06/10/1999

Gentlemen : Middle East Optic Fiber & Cable (MEFC)
P.O.BOX 60536 RIYADH 11555, K.S.A.

We are pleased to inform you that your commercial documents have been evaluated and your Company is now registered under Vendor Code No. M-2095.

We would suggest that you maintain a continuous contact with Vendor Liaison Unit of Purchasing & Traffic Division on Phone No. 858-6456.

We thank you for your interest to supply materials to SCECO-East.

Regards,

Very truly yours,

SALEM H. AL-REMAIHI
Purchasing Manager

Intertek ETL SEMKO

3933 US Route 11, Cortland, NY 13045
Telephone 607-753-6711 Fax 607-756-9891 Home Page www.etlcable.com

REPORT OF TESTING

Independent Cabling Products Testing

Reference Intertek ETL SEMKO Report Number 3054154-002, Dated February 16, 2004

Rendered To:

Middle East Fiber Cable Manufacturing Co.
Second Industrial City – Phase 3, P.O. Box 585
Riyadh, 11383 Saudi Arabia

Sample Description:

4FMM, 4FSM Steel Tape Armoured Optical Fiber Cable: White and Green Loose Tubes filled with Gel and wrapped with Mica Tape-Stranded around Steel Strength member-Water Blocking Material-Core Wrapped with Water Blocking Material and Mica Tape-Low Smoke Zero Halogen Inner Sheath-Steel Tape Armoured-Mica Tape-Low Smoke Zero Halogen Outer Jacket

Conclusions:

The Fiber Optical Telecommunications Cable, as previously described and supplied by the client, was tested in accordance with the procedures of IEC 60331-25. The cable is defined as "fire resisting" if, no interruption of the optical transmittance occurred after a 90 minute burn or during the cool down period. All fibers were still transmitting light after the 15 minute cool down period.

February 16, 2004

Jim Arastasi
Technical Manager
Communications Products

Intertek ETL SEMKO

3933 US Route 11, Cortland, NY 13045
Telephone 607-753-6711 Fax 607-756-9891 Home Page www.etlcable.com

REPORT OF TESTING

Independent Cabling Products Testing

Reference Intertek ETL SEMKO Report Number 3054154-001, Dated February 16, 2004

Rendered To:

Middle East Fiber Cable Manufacturing Co.
Second Industrial City – Phase 3, P.O. Box 585
Riyadh, 11383 Saudi Arabia

Sample Description:

4FMM, 4FSM Steel Wire Braided Optical Fiber Cable: White and Green Loose Tubes filled with Gel and wrapped with Mica Tape-Stranded around Steel Strength member-Water Blocking Material-Copper Wrapped with Water Blocking Material and Mica Tape-Low Smoke Zero Halogen Inner Sheath-Steel Wire Braided-Mica Tape-Low Smoke Zero Halogen Outer Jacket

Conclusions:

The Fiber Optical Telecommunications Cable, as previously described and supplied by the client, was tested in accordance with the procedures of IEC 60331-25. This cable is defined as "fire resisting" if, no interruption of the optical transmittance occurred after a 90 minute burn or during the cool down period. All fibers were still transmitting light after the 15 minute cool down period.

February 16, 2004

Jim Arastasi
Technical Manager
Communications Products

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Intertek
731 Enterprise Drive
Lexington, KY 40510
Tel 859 226 1000
Fax 859 226 1040
www.intertek.com

May 15, 2020

Intertek Project Number: G103844651
Letter Report Number: 103844651LEX-004A

Middle East Fiber Cable Mfg. Co.
Second Industrial City Phase 3 - 4658.
Unit No. 1 Riyadh, 14336-7524 KSA

Subject: Testing Conformity Letter for ADBN SM & MM NON-METALIC DIRECT BURIED O.F. CABLE.

Dear Client:

This letter report was written to inform you of the test results to date for the evaluation per IEC 60794-1-2:2013 Ed. 3 on the ADBN SM & MM NON-METALIC DIRECT BURIED O.F. CABLE.

Table 1: Test Results Summary

IEC 60794-1-2:2013 Ed.3 Task Description	Start Date	Complete Date	Test Status
Group 1: Method E1A & E1B - Tensile Performance	4/16/19	4/17/19	Compliant
Group 1: Method E2 - Abrasion	4/16/19	4/16/19	Compliant
Group 2: Method E3 - Crush Test	3/28/19	3/29/19	Compliant
Group 2: Method E4 - Impact Test	3/28/19	3/29/19	Compliant
Group 2: Method E6 - Repeated Bending	3/28/19	3/29/19	Compliant
Group 2: Method E7 - Torsion Test	3/28/19	3/29/19	Compliant
Group 2: Method E15 - Bleeding and Evaporation	3/27/19	3/28/19	Compliant
Group 2: Method E17 - Stiffness	5/9/19	5/9/19	Complete*
Group 3: Method E18 - Bending under Tension (Sheave Test)	5/9/19	5/10/19	Compliant
Group 4: Method F1 - Temperature Cycling Test	3/20/19	3/25/19	Compliant
Group 5: Method E11 - Cable Bend Test	3/25/19	3/26/19	Compliant
Group 5: Method F5 - Water Penetration Test	3/28/19	3/29/19	Compliant
Group 5: Method E5 - Stripping Force Stability	3/14/19	4/23/19	Compliant
Group 5: Method E10 - Kinks	4/3/19	4/4/19	Compliant
Group 5: Method E14 - Compound Flow	4/2/19	4/3/19	Compliant
Group 6: Method G1 - Bend Test for Cable Elements	4/8/19	4/25/19	Compliant
Group 6: Method G7 - Tube Kinking	4/2/19	4/3/19	Compliant
Report	5/29/19	5/15/20	Complete

*There were no pass/fail criteria. Values will be provided for comparative analysis.

A full description of the test methods, test configurations, and detailed test results was included in the final report. If you have any questions, please feel free to call us at 1-800-788-3061.

Prepared By: Paul Alt, Senior Project Engineer Date: 5/15/2020

Approved By: Richard Proctor, Engineering Manager Date: 5/15/2020

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Intertek
731 Enterprise Drive
Lexington, KY 40510
Tel 859 226 1000
Fax 859 226 1040
www.intertek.com

May 18, 2020

Intertek Project Number: G103865089
Letter Report Number: 103865089LEX-004A

Middle East Fiber Cable Mfg. Co.
Second Industrial City Phase 3 - 4658.
Unit No. 1 Riyadh, 14336-7524 KSA

Subject: Testing Conformity Letter for ADUN/AFRN SM & MM FIBER NON-METALIC DUCT O.F. CABLE.

Dear Client:

This letter report was written to inform you of the test results to date for the evaluation per IEC 60794-1-2:2013 Ed. 3 on the ADUN/AFRN SM & MM FIBER NON-METALIC DUCT O.F. CABLE High and Low Count Cable.

Table 1: Test Results Summary

IEC 60794-1-2:2013 Ed.3 Task Description	Actual Start Date	Actual Complete Date	Test Status
Group 1: Method E1A & E1B - Tensile Performance	6/24/19	6/25/19	Compliant
Group 1: Method E2 - Abrasion	6/26/19	6/26/19	Compliant
Group 2: Method E3 - Crush Test	8/1/19	8/2/19	Compliant
Group 2: Method E4 - Impact Test	8/1/19	8/2/19	Compliant
Group 2: Method E6 - Repeated Bending	7/15/19	7/19/19	Compliant
Group 2: Method E7 - Torsion Test	7/15/19	7/19/19	Compliant
Group 2: Method E15 - Bleeding and Evaporation	4/30/19	4/30/19	Compliant
Group 2: Method E17 - Stiffness	7/30/19	7/31/19	Complete*
Group 3: Method E18 - Bending under Tension (Sheave Test)	7/8/19	7/10/19	Compliant
Group 4: Method F1 - Temperature Cycling Test	6/14/19	6/19/19	Compliant
Group 5: Method E11 - Cable Bend Test	8/1/19	8/2/19	Compliant
Group 5: Method F5 - Water Penetration Test	7/30/19	7/31/19	Compliant
Group 5: Method E5 - Stripping Force Stability	4/30/19	4/30/19	Compliant
Group 5: Method E10 - Kinks	7/25/19	7/26/19	Compliant
Group 5: Method E14 - Compound Flow	7/30/19	7/31/19	Compliant
Group 6: Method G1 - Bend Test for Cable Elements	7/1/19	7/3/19	Compliant
Group 6: Method G7 - Tube Kinking	7/25/19	7/26/19	Compliant
Report	8/5/19	5/18/20	Complete

*There were no pass/fail criteria. Values will be provided for comparative analysis.

A full description of the test methods, test configurations, and detailed test results was included in the final report. If you have any questions, please feel free to call us at 1-800-788-3061.

Prepared By: Paul Alt, Senior Project Engineer Date: 5/18/2020

Approved By: Richard Proctor, Engineering Manager Date: 5/18/2020

CERTIFICATIONS AND APPROVALS

CERTIFICATIONS AND APPROVALS

Kingdom of Saudi Arabia
Royal Commission for Jubail and Yanbu
Royal Commission at Yanbu

المملكة العربية السعودية
الهيئة الملكية للجبيل وينبع
الهيئة الملكية بينبع
الرمز (٨/٤٤٦)

شركة الشرق الاوسط لصناعة كابلات الالياف البصرية
ص.ب 4658 الرياض 14336-7524
هاتف : 0505672013
فاكس : 2650203

عناية : المدير

بعد التحية ...

نفيدكم بأن منشأتكم مسجلة ضمن قائمة الموردين المسجلين لدى الهيئة الملكية بينبع الصناعية .

ونحيطكم علما بأن الهيئة الملكية بينبع تطلب من كافة الشركات والمؤسسات المسجلين لديها تحديث ملفاتهم سنويا .

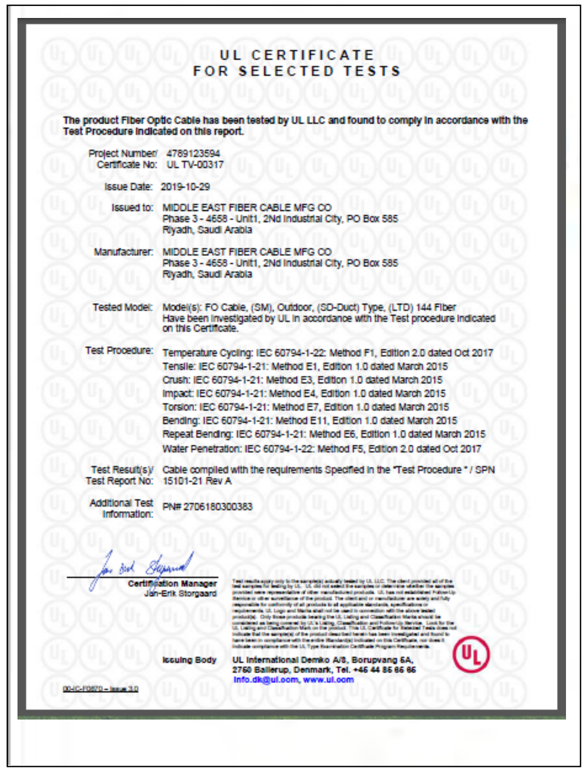
ولكم تحياتي ...

مدير إدارة المشتريات والمستودعات

صلاح الدين بن حسن طوله

DATE: REF.:

REPLY TO : P.O BOX 30031 YANBU AL-SINAIYAH
TEL.: (04) 321 - 6000
TELEX: 662301 PARY SJ
NYAS 05-1 25 Sep 18



UL CERTIFICATE
FOR SELECTED TESTS

The product Fiber Optic Cable has been tested by UL LLC and found to comply in accordance with the Test Procedure indicated on this report.

Project Number/ Certificate No: 4789123594 UL TV-00317

Issue Date: 2019-10-29

Issued to: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Manufacturer: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Tested Model: Model(s): FO Cable, (SM), Outdoor, (SD-Duct) Type, (LTD) 144 Fiber
Have been investigated by UL in accordance with the Test procedure indicated on this Certificate.

Test Procedure: Temperature Cycling: IEC 60794-1-22: Method F1, Edition 2.0 dated Oct 2017
Tensile: IEC 60794-1-21: Method E1, Edition 1.0 dated March 2015
Crush: IEC 60794-1-21: Method E3, Edition 1.0 dated March 2015
Impact: IEC 60794-1-21: Method E4, Edition 1.0 dated March 2015
Torsion: IEC 60794-1-21: Method E7, Edition 1.0 dated March 2015
Bending: IEC 60794-1-21: Method E11, Edition 1.0 dated March 2015
Repeat Bending: IEC 60794-1-21: Method E6, Edition 1.0 dated March 2015
Water Penetration: IEC 60794-1-22: Method F5, Edition 2.0 dated Oct 2017

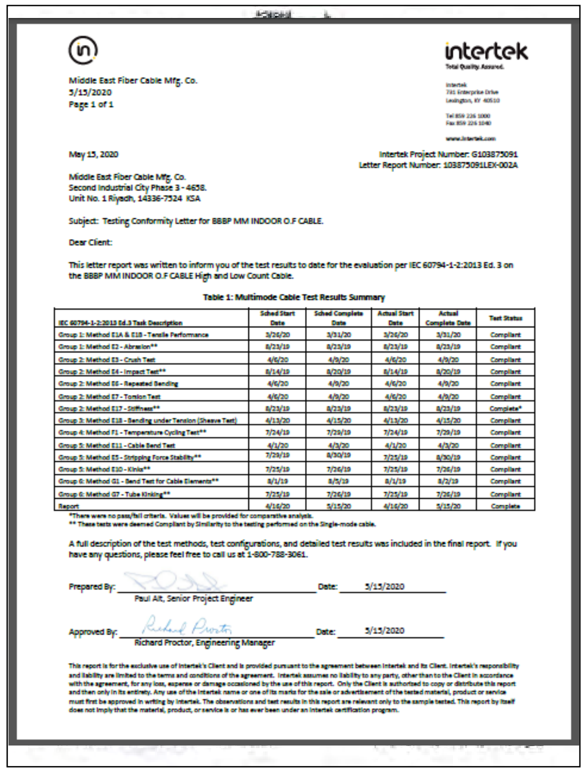
Test Result(s)/ Test Report No: Cable complied with the requirements Specified in the "Test Procedure " / SPN 15101-21 Rev A

Additional Test Information: PN# 2706180300383

Certification Manager
Jan-Erik Storgaard

Issuing Body: UL International Demko A/S, Borupvang 6A, 2750 Ballerup, Denmark, Tel. +45 44 85 65 65
info.dk@ul.com, www.ul.com

00-IC-F0670 – Issue 3.0



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Middle East Fiber Cable Mfg. Co.
5/15/2020
Page 1 of 1

Intertek
731 Enterprise Drive
Lexington, KY 40510
Tel 859 226 1000
Fax 859 226 1040
www.intertek.com

May 15, 2020

Intertek Project Number: G103875091
Letter Report Number: 103875091LEX-002A

Middle East Fiber Cable Mfg. Co.
Second Industrial City Phase 3 - 4658.
Unit No. 1 Riyadh, 14336-7524 KSA

Subject: Testing Conformity Letter for 8BBP MM INDOOR O.F CABLE.

Dear Client:

This letter report was written to inform you of the test results to date for the evaluation per IEC 60794-1-2:2013 Ed. 3 on the 8BBP MM INDOOR O.F CABLE High and Low Count Cable.

Table 1: Multimode Cable Test Results Summary

IEC 60794-1-2:2013 Ed.3 Task Description	Sched Start Date	Sched Complete Date	Actual Start Date	Actual Complete Date	Test Status
Group 1: Method E1A & E1B - Tensile Performance	3/26/20	3/31/20	3/26/20	3/31/20	Compliant
Group 1: Method E2 - Abrasion**	8/23/19	8/23/19	8/23/19	8/23/19	Compliant
Group 2: Method E3 - Crush Test	4/6/20	4/9/20	4/6/20	4/9/20	Compliant
Group 2: Method E4 - Impact Test**	8/14/19	8/20/19	8/14/19	8/20/19	Compliant
Group 2: Method E6 - Repeated Bending	4/6/20	4/9/20	4/6/20	4/9/20	Compliant
Group 2: Method E7 - Torsion Test	4/6/20	4/9/20	4/6/20	4/9/20	Compliant
Group 2: Method E17 - Stiffness**	8/23/19	8/23/19	8/23/19	8/23/19	Complete*
Group 3: Method E18 - Bending under Tension (Sheave Test)	4/13/20	4/15/20	4/13/20	4/15/20	Compliant
Group 4: Method F1 - Temperature Cycling Test**	7/24/19	7/29/19	7/24/19	7/29/19	Compliant
Group 5: Method E11 - Cable Bend Test	4/1/20	4/3/20	4/1/20	4/3/20	Compliant
Group 5: Method E5 - Stripping Force Stability**	7/29/19	8/30/19	7/25/19	8/30/19	Compliant
Group 5: Method E10 - Kinks**	7/25/19	7/26/19	7/25/19	7/26/19	Compliant
Group 6: Method G1 - Bend Test for Cable Elements**	8/1/19	8/5/19	8/1/19	8/2/19	Compliant
Group 6: Method G7 - Tube Kinking**	7/25/19	7/26/19	7/25/19	7/26/19	Compliant
Report	4/16/20	5/15/20	4/16/20	5/15/20	Complete

*There were no pass/fail criteria. Values will be provided for comparative analysis.
** These tests were deemed Compliant by Similarity to the testing performed on the Single-mode cable.

A full description of the test methods, test configurations, and detailed test results was included in the final report. If you have any questions, please feel free to call us at 1-800-788-3061.

Prepared By: Date: 5/15/2020
Paul Alt, Senior Project Engineer

Approved By: Date: 5/15/2020
Richard Proctor, Engineering Manager

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

Fibre to the Home Council Middle East & North Africa

Enhancing Life

Amman, 14th May 2015

Middle East Fiber Cable Manufacturing Co.
Second Industrial City - Phase III- 4658 - Unit No. 1
Riyadh 14336 - 7524

Kingdom of Saudi Arabia

This is to state that the company Middle East Fiber Cable Manufacturing Co. is an official platinum member of FTTH Council MENA.

The company is a platinum active member since 2011 and occupying a seat within its board of directors in addition to its involvement in the Council yearly activities.

We would like to thank you for your continuous collaboration.

Best Regards,

Christine Beylouni
Director General

FTTH Council Middle East & North Africa
Wadi Saqra Street – Building no.46 – Amman – Jordan
Tel: +962 6 5548800 - Fax: +962 6 5521850 – Web: www.ftthcouncilmena.org – E: info@ftthcouncilmena.org

CERTIFICATIONS AND APPROVALS

WIMPEY LABORATORIES L.L.C. مختبرات ويمبي ش.ذ.م.م.

Date: 08/02/2022

Compliance Statement

Company:
Middle East Fiber Cable Manufacturing Co.
Riyadh 14336 - 7524 Saudi Arabia

Product description:
Fiber optical cable

Product identification:
Fiber Optic Cables - 288F SM NON METALLIC MICRO TYPE LT DUCT OUTDOOR O.F. CABLE

Manufacturer:
Middle East Fiber Cable Manufacturing Co.

Optic Fiber Cable standards:
IEC 60794-1-21:2015 Optical fibre cables - Part 1-21: Generic specification - Basic optical cable test procedures - Mechanical tests methods
IEC 60794-1-22:2017 Optical fibre cables - Part 1-22: Generic specification - Basic optical cable test procedures - Environmental test methods

Report No.	Sample No.	Model/Type Ref
WLR21-ECL-374-02 Dt: 20/12/2021	WS21-ECL-374-02	G657A2 SM 288F

This is to certify that the product **Optic Cable,** with above mentioned model number manufactured by Middle East Fiber Cable Manufacturing Co., received for testing on 16th October 2021, and Satisfactory complied with the requirements of IEC 60794-1-21:2015 & IEC 60794-1-22:2017.

Signed for and on behalf of Wimpey Laboratories

A. Umar Farook
Technical Manager

TEL: +971 4 3273123 • FAX: +971 4 2365308 • P.O BOX: 123279 • DUBAI • UNITED ARAB EMIRATES
E-mail: info.dxb@wimpeylab.com Website: www.wimpeylab.com

WIMPEY LABORATORIES L.L.C. مختبرات ويمبي ش.ذ.م.م.

Date: 08/02/2022

Compliance Statement

Company:
Middle East Fiber Cable Manufacturing Co.
Riyadh 14336 - 7524 Saudi Arabia

Product description:
Fiber optical cable

Product identification:
Fiber Optic Cables - 48F SM NON METALLIC MICRO TYPE LT DUCT OUTDOOR O.F. CABLE

Manufacturer:
Middle East Fiber Cable Manufacturing Co.

Optic Fiber Cable standards:
IEC 60794-1-21:2015 Optical fibre cables - Part 1-21: Generic specification - Basic optical cable test procedures - Mechanical tests methods
IEC 60794-1-22:2017 Optical fibre cables - Part 1-22: Generic specification - Basic optical cable test procedures - Environmental test methods

Report No.	Sample No.	Model/Type Ref
WLR21-ECL-374-01 Dt: 20/12/2021	WS21-ECL-374-01	G657A2 SM 48F

This is to certify that the product **Optic Cable,** with above mentioned model number manufactured by Middle East Fiber Cable Manufacturing Co., received for testing on 16th October 2021, and Satisfactory complied with the requirements of IEC 60794-1-21:2015 & IEC 60794-1-22:2017.

Signed for and on behalf of Wimpey Laboratories

A. Umar Farook
Technical Manager

TEL: +971 4 3273123 • FAX: +971 4 2365308 • P.O BOX: 123279 • DUBAI • UNITED ARAB EMIRATES
E-mail: info.dxb@wimpeylab.com Website: www.wimpeylab.com

Intertek

Certificate of Conformity

Manufacturer: Middle East Fiber Cable Mfg. Co.
Manufacturing Location: P.O. Box: 733
Riyadh; Kingdom of Saudi Arabia; 11383
Product Tested: Outdoor D/B Non Metallic SM 12F G.652D+G.655 DSGN
Part Number: ADBN7024.02
Testing Dates: 8/09/2010 through 8/27/2010
Report Number: 100162381LEX-001

A sample of the newly manufactured product as configured in the referenced test report was tested at Intertek's Lexington, KY facility and was found to comply with the requirements of the following standard and/or specific subsections of the standard noted below:

Saudi Aramco Material System Specification 18-SAMSS-625, October 31, 2006:

- Section 5.14.3 Tensile Strength Test
- Section 6.5.1 Compound Flow Test
- Section 6.5.2 Cable Bend Test
- Section 6.5.3 Cable Impact Test
- Section 6.5.4 Cable Compression Test
- Section 6.5.5 Cable Twist Test
- Section 6.5.9 Water Penetration Testing
  (**NOTE:** *There is no pass/fail criteria for Water Penetration in 18-SAMSS-625: the product was subjected to the test sequence outlined in 18-SAMSS-625 and the results were recorded in the accompanying report*)
- Section 6.5.12 Temperature Cycling Test

Prepared By: Date: 10/26/2010
Paul Alt, Senior Project Engineer

Approved By: Date: 10/26/2010
Richard Proctor, Operations Manager

Intertek

Certificate of Conformity

Manufacturer: Middle East Fiber Cable Mfg. Co.
Manufacturing Location: P.O. Box: 733
Riyadh; Kingdom of Saudi Arabia; 11383
Product Tested: Indoor Backbone Plenum SM [D] 24 Fiber DSGN 08
Part Number: BBBP1024.08
Testing Dates: 8/09/2010 through 8/27/2010
Report Number: 100162381LEX-002

sample of the newly manufactured product as configured in the referenced test report was tested at Intertek's Lexington, KY facility and was found to comply with the requirements of the following standard and/or specific subsections of the standard noted below:

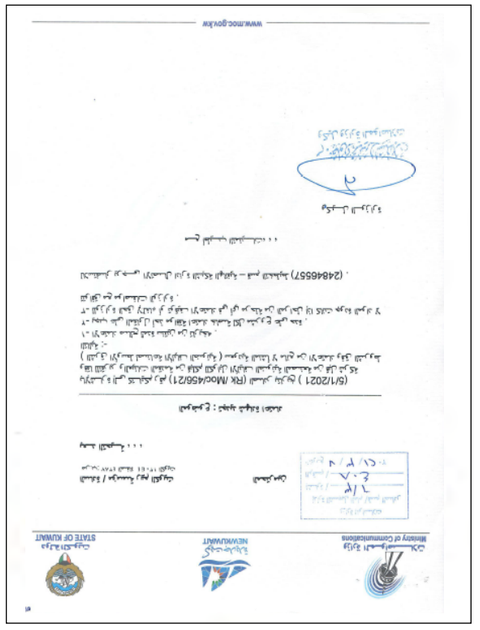
Saudi Aramco Material System Specification 18-SAMSS-625, October 31, 2006:

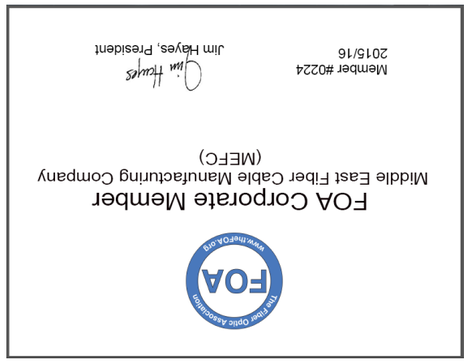
- Section 5.14.3 Tensile Strength Test
- Section 6.5.1 Compound Flow Test
- Section 6.5.2 Cable Bend Test
- Section 6.5.3 Cable Impact Test
- Section 6.5.4 Cable Compression Test
- Section 6.5.5 Cable Twist Test
- Section 6.5.9 Water Penetration Testing
  (**NOTE:** *There is no pass/fail criteria for Water Penetration in 18-SAMSS-625: the product was subjected to the test sequence outlined in 18-SAMSS-625 and the results were recorded in the accompanying report*)
- Section 6.5.12 Temperature Cycling Test

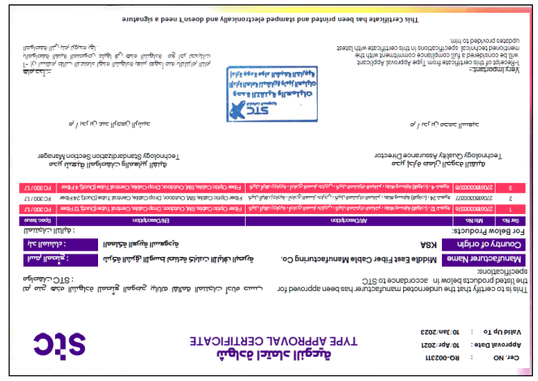
Prepared By: Date: 10/26/2010
Paul Alt, Senior Project Engineer

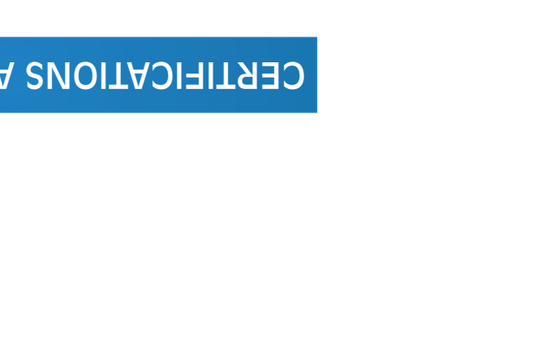
Approved By: Date: 10/26/2010
Richard Proctor, Operations Manager

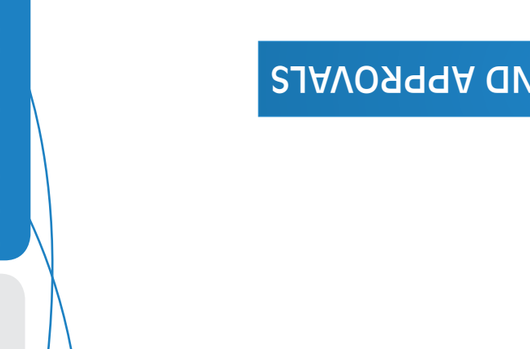
CERTIFICATIONS AND APPROVALS




FOA Corporate Member
Middle East Fiber Cable Manufacturing Company
(MEFC)
Member #0224
2015/16
Jim Hayes, President







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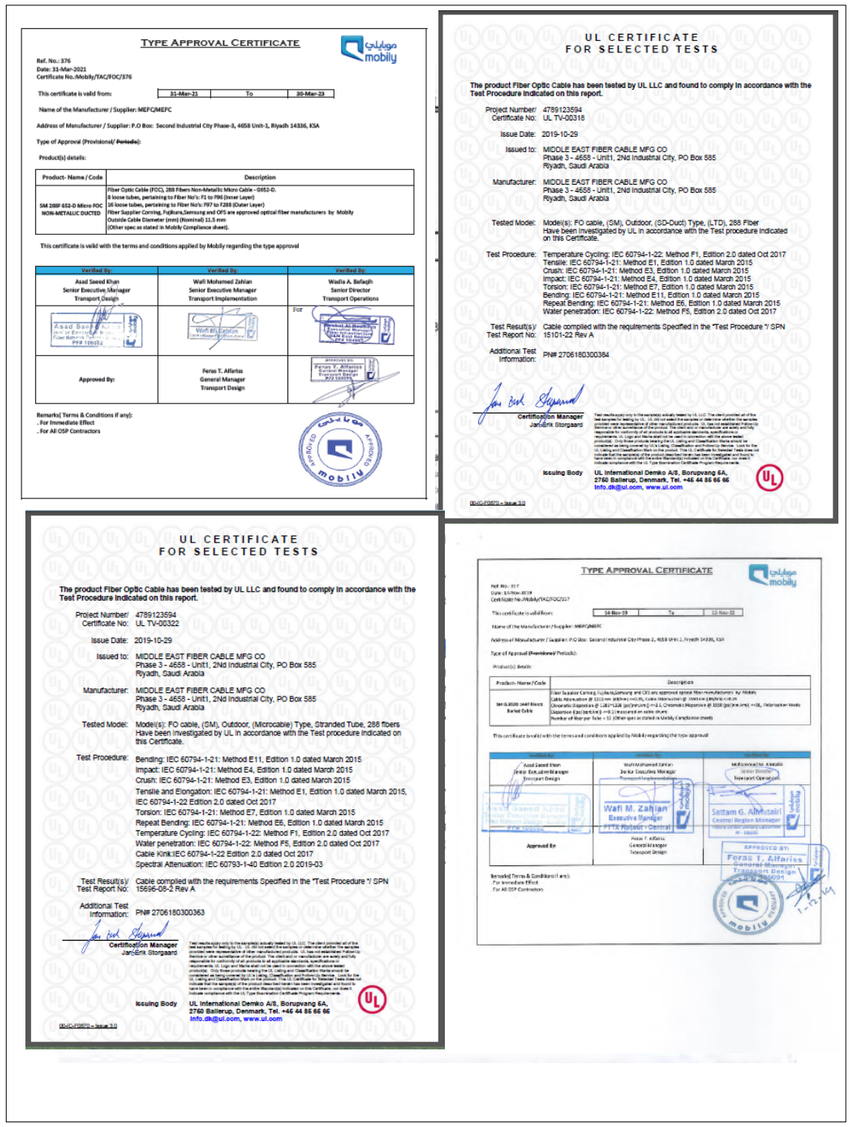
CERTIFICATIONS AND APPROVALS



TYPE APPROVAL CERTIFICATE

Ref. No.: 376
Date: 31-Mar-2021
Certificate No.:Mobily/TAC/FOC/376

This certificate is valid from: 31-Mar-21 To 30-Mar-23

Name of the Manufacturer / Supplier: MEFC/MEFC

Address of Manufacturer / Supplier: P.O Box: Second Industrial City Phase-3, 4658 Unit-1, Riyadh 14336, KSA

Type of Approval (Provisional/ ~~Periodic~~):

Product(s) details:

Product- Name / Code	Description
SM 288F 652-D Micro FOC NON-METALLIC DUCTED	Fiber Optic Cable (FOC), 288 Fibers Non-Metallic Micro Cable - G652-D. 8 loose tubes, pertaining to Fiber No's: F1 to F96 (Inner Layer) 16 loose tubes, pertaining to Fiber No's: F97 to F288 (Outer Layer) Fiber Supplier Corning, Fujikura,Samsung and OFS are approved optical fiber manufacturers by Mobily Outside Cable Diameter (mm) (Nominal): 11.5 mm (Other spec as stated in Mobily Compliance sheet).

This certificate is valid with the terms and conditions applied by Mobily regarding the type approval

Verified By:	Verified By:	Verified By:
Asad Saeed Khan Senior Executive Manager Transport Design	Wafi Mohamed Zahlan Senior Executive Manager Transport Implementation	Wadia A. Bafaqih Senior Director Transport Operations
		For
Approved By:	Feras T. Alfariss General Manager Transport Design	

Remarks(Terms & Conditions if any):
. For Immediate Effect
. For All OSP Contractors

UL CERTIFICATE
FOR SELECTED TESTS

The product Fiber Optic Cable has been tested by UL LLC and found to comply in accordance with the Test Procedure indicated on this report.

Project Number: 4789123594
Certificate No: UL TV-00316

Issue Date: 2019-10-29

Issued to: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Manufacturer: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Tested Model: Model(s): FO cable, (SM), Outdoor, (GD-Duct) Type, (LTD), 288 Fiber
Have been investigated by UL in accordance with the Test procedure indicated on this Certificate.

Test Procedure: Temperature Cycling: IEC 60794-1-22: Method F1, Edition 2.0 dated Oct 2017
Tensile: IEC 60794-1-21: Method E1, Edition 1.0 dated March 2015
Crush: IEC 60794-1-21: Method E3, Edition 1.0 dated March 2015
Impact: IEC 60794-1-21: Method E4, Edition 1.0 dated March 2015
Torsion: IEC 60794-1-21: Method E7, Edition 1.0 dated March 2015
Bending: IEC 60794-1-21: Method E11, Edition 1.0 dated March 2015
Repeat Bending: IEC 60794-1-21: Method E6, Edition 1.0 dated March 2015
Water penetration: IEC 60794-1-22: Method F5, Edition 2.0 dated Oct 2017

Test Result(s)/ Test Report No: Cable complied with the requirements Specified in the "Test Procedure "/ SPN 15101-22 Rev A

Additional Test Information: PN# 2706180300384

Certification Manager
Jan-Erik Storgaard

Issuing Body: UL International Demko A/S, Borupvang 6A, 2750 Ballerup, Denmark. Tel. +46 44 85 66 66
Info.dk@ul.com, www.ul.com

UL CERTIFICATE
FOR SELECTED TESTS

The product Fiber OpSc Cable has been tested by UL LLC and found to comply in accordance with the Test Procedure indicated on this report.

Project Number: 4789123594
Certificate No: UL TV-00322

Issue Date: 2019-10-29

Issued to: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Manufacturer: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Tested Model: Model(s): FO cable, (SM), Outdoor, (Microcable Type, Stranded Tube, 288 fibers
Have been investigated by UL in accordance with the Test procedure indicated on this Certificate.

Test Procedure: Bending: IEC 60794-1-21: Method E11, Edition 1.0 dated March 2015
Impact: IEC 60794-1-21: Method E4, Edition 1.0 dated March 2015
Crush: IEC 60794-1-21: Method E3, Edition 1.0 dated March 2015
Tensile and Elongation: IEC 60794-1-21: Method E1, Edition 1.0 dated March 2015, IEC 60794-1-22 Edition 2.0 dated Oct 2017
Torsion: IEC 60794-1-21: Method E7, Edition 1.0 dated March 2015
Repeat Bending: IEC 60794-1-21: Method E6, Edition 1.0 dated March 2015
Temperature Cycling: IEC 60794-1-22: Method F1, Edition 2.0 dated Oct 2017
Water penetration: IEC 60794-1-22: Method F5, Edition 2.0 dated Oct 2017
Cable Kink:IEC 60794-1-22 Edition 2.0 dated Oct 2017
Spectral Attenuation: IEC 60793-1-40 Edition 2.0 2019-03

Test Result(s)/ Test Report No: Cable complied with the requirements Specified in the "Test Procedure "/ SPN 15696-08-2 Rev A

Additional Test Information: PN# 2706180300363

Certification Manager
Jan-Erik Storgaard

Issuing Body: UL International Demko A/S, Borupvang 6A, 2750 Ballerup, Denmark. Tel. +46 44 85 66 66
Info.dk@ul.com, www.ul.com

TYPE APPROVAL CERTIFICATE

Ref. No.: 377
Date: 31-Mar-2021
Certificate No.:Mobily/TAC/FOC/377

This certificate is valid from: 31-Mar-21 To 30-Mar-23

Name of the Manufacturer / Supplier: MEFC/MEFC

Address of Manufacturer / Supplier: P.O Box: Second Industrial City Phase-3, 4658 Unit-1, Riyadh 14336, KSA

Type of Approval (Provisional/ ~~Periodic~~):

Product(s) details:

Product- Name / Code	Description
SM 144F 652-D Micro FOC NON-METALLIC DUCTED	Fiber Optic Cable (FOC), 144 Fibers Non-Metallic Micro Cable - G652-D. 12 Tubes - 12 Fibers per Tube Fiber Supplier Corning, Fujikura,Samsung and OFS are approved optical fiber manufacturers by Mobily Outside Cable Diameter (mm) (Nominal) 09.2 mm (Other spec as stated in Mobily Compliance sheet).

This certificate is valid with the terms and conditions applied by Mobily regarding the type approval

Verified By:	Verified By:	Verified By:
Asad Saeed Khan Senior Executive Manager Transport Design	Wafi Mohamed Zahlan Senior Executive Manager Transport Implementation	Wadia A. Bafaqih Senior Director Transport Operations
		For
Approved By:	Feras T. Alfariss General Manager Transport Design	

Remarks(Terms & Conditions if any):
. For Immediate Effect
. For All OSP Contractors

TYPE APPROVAL CERTIFICATE

Supplier: MEFC COMPANY
Reference #: SSD/ODN-36/2021
Approval Date: 01- DEC- 2021
Valid To: 30- NOV- 2023

This is to certify that the Company "MEFC" located in "RIYADH" is granted type approval for the list of products and materials below in accordance to Dawiyat Technical Specifications DTS001, Version 01.

Dawiyat Item Code	Manufacturer Item Code	Description
DTS00101	ADFN03012.010	12 FOC, SM, Outdoor, standard duct, uni-tube
DTS00102	ADEN03144.004	144 FOC, SM, Outdoor, Standard duct, loose-tube
DTS00103	ADEN03288.002	288 FOC, SM, Outdoor, Standard duct, loose-tube
DTS00104	ADFN03144.006	144 FOC, SM, Outdoor, Micro duct, loose-tube
DTS00105	ADEN03288.003	288 FOC, SM, Outdoor, Micro duct, loose-tube

The certificate is released in reference to the manufacturer submittal dated 16/06/2021. Hence, the manufacture assured that the above-mentioned items codes in association with Dawiyat Item codes are in compliance to the submittal, and can be used in DAWIYAT network.

Sincerely,

Wael Ali Al Ghamdi

VP-Technology

Certificate of Partnership and Accomplishment

Etisalcompany is pleased
To honor the success partner
Misse East Fiber Cable
Manufacturing Co.
in its participation of accomplishing
Princess Noura Bint Abdul Rahman
University Project (PNUW), by
providing an end to end solution for
this data network, security and
surveillance, control system and
telecommunication
This certificate as appreciation of the
longstanding partnership and
effective mutual contributions to
achieve the common goals
February – 14th, 2012

Yours faithfully,
Mazen Mahrous
Project Director

شهادة شراكة وانجاز

يسر شركة اتصالكم
تكريم شريك النجاح
شركة الشرق الأوسط لصناعة كابلات الألياف
البصرية
على مساهمتها في انجاز مشروع جامعة الأميرة
نورة بنت عبد الرحمن
على تنفيذ مشروع الاتصالات وتقنية المعلومات
المتكامل لشامل على الربط المعلوماتي
والمراقبة الأمنية والتحكم والاتصالات

ويأتي هذه الشهادة تقديراً وعرفاناً بالشراكة
طويلة الأمد والمساهمات الفعالة الشاملة لتحقيل
الأهداف المشتركة

14 فبراير ،2012

BANKERS

CERTIFICATIONS AND APPROVALS

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CERTIFICATIONS AND APPROVALS

Saudi Basic Industries Corporation
SABIC Engineering & Project
Management
Shared Services
Al-Jubail

سابك
sabic

الشركة السعودية للصناعات الأساسية
سابك للهندسة والمشاريع
الخدمات المشتركة
الجبيل

Approval Letter:

X	URGENT		ORDINARY		CONFIDENTIAL

Date: 23 Feb. '10
Ref : 230210_6

No of Pages: 01

To	:	Mr. Owais Ahmad Sales Manager Middle East Fiber Cable Manufacturing Co. PO Box 733, Riyadh 11383, Saudi Arabia
Subject	:	SABIC Approved Vendor Product

Dear Sir,

We would like to inform you that your company has been included in SABIC Engineering & Project Management Approved Vendors List.

	Product	Manufacturer
1	Single Mode (SM) & Multi Mode (MM) fiber optic cables for indoor and outdoor	Middle East Fiber Cable Manufacturing Company - KSA

In order to update our vendor data base, please fill in the attached form (Annexure II) and send it back to the undersigned. This is for the confirmation of your address and contact details.

Best Regards,

Mr. Saad. Al- Abede
Vendor Committee Leader

CC: AAL/AVL

P. O. Box –11425 Al-Jubail Industrial City - 31961 - Saudi Arabia
Tel. 966 (3) 340 1680 Fax. 966 (3) 341 2816

CERTIFICATIONS AND APPROVALS

CERTIFICATIONS AND APPROVALS

09/01/2020 14:29 00965-23987257 TL SUPL RELAT MGMT PAGE 01/01

1747
030120

NEWKUWAIT

TO: M/s. Middle East Fiber Cable Manufacturing Co.
Saudi Arabia;
Fax: 00966 11 2650203

FROM: Ag. Team Leader Supplier Relationship Management
Commercial Support Group
P.O. Box – 9758, 61008 Ahmadi, Kuwait
Fax No.: (965) 23980429

Date : 8th January 2020
Msg. No.: RQAN/2356/9322/2020
Vendor Code: 30621
Total No. of Pages: 1

SUBJECT: **RE-QUALIFICATION OF VENDOR APPROVAL NOTIFICATION**

OUR REF.: **VEC-9082/FOC/OO/ROF/9322/2020**

Dear Sirs,

We are pleased to inform you that your application to retain you in KOC approved list of manufacturers has been approved for the product category and manufacturing facility mentioned here below:

PRODUCT CATEGORY : **FIBRE OPTIC CABLES**
FACILITY ADDRESS : **M/s. MIDDLE EAST FIBER CABLE MANUFACTURING CO.**
SECOND INDUSTRIAL CITY PHASE III,
4658, UNIT NO. 1, RIYADH 14336-7524
SAUDI ARABIA.

Validity : **From 8th January 2020 to 7th January 2025 (5 years)**
Earlier Approvals : **1. VEC/FOC/OO/007/2004 dated 3rd March 2004**
2. VEC-9082/FOC/OO/RQF/8009/2009 dated 9th June 2009
3. VEC-9082/FOC/OO/RQF/8576/2014 dated 10th September 2014

This notification of approval is issued subject to the following, failing which liable for cancellation at any time at the discretion of KOC:-

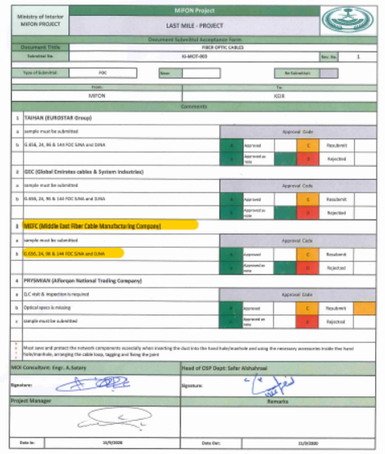
- To update regularly with the latest product catalogue / information.
- To furnish Budgetary Quotations as & when requested.
- To furnish Audited financial details for every two years.
- To update with latest contact details / Change in Local Agent.
- To update with Name Change / Merging / Factory Shifting.
- To submit request for Re-Qualification (if required) 3 months prior to the date of expiry.
- To hold all valid mandatory certifications at all times.

Sincerely,
For Kuwait Oil Company

Mansour Johar Abdullah

cc: M/s. Reem Al-Kuwait Est., Kuwait; Fax: 2240 1787
File

P&C_CS-F-(7.4_SRM-011-04_SRM-RVA-04



UL CERTIFICATE FOR SELECTED TESTS

The product Fiber Optic Cable has been tested by UL LLC and found to comply in accordance with the Test Procedure indicated on this report.

Project Number/ Certificate No: 4789123594 UL TV-00320

Issue Date: 2019-10-29

Issued to: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Manufacturer: MIDDLE EAST FIBER CABLE MFG CO
Phase 3 - 4658 - Unit1, 2Nd Industrial City, PO Box 585
Riyadh, Saudi Arabia

Tested Model: Model(s): FO Cable, 24-Fiber, SM, Glass Yarn
Have been investigated by UL in accordance with the Test procedure indicated on this Certificate.

Test Procedure: Water penetration: IEC 60794-1-22: Method F5, Edition 2.0 dated Oct 2017
Temperature Cycling: IEC 60794-1-22: Method F1, Edition 2.0 dated Oct 2017
Tensile: IEC 60794-1-21: Method E1, Edition 1.0 dated March 2015
Crush: IEC 60794-1-21: Method E3, Edition 1.0 dated March 2015
Impact: IEC 60794-1-21: Method E4, Edition 1.0 dated March 2015
Repeat Bending: IEC 60794-1-21: Method E6, Edition 1.0 dated March 2015
Torsion: IEC 60794-1-21: Method E7, Edition 1.0 dated March 2015
Bending: IEC 60794-1-21: Method E11, Edition 1.0 dated March 2015

Test Result(s)/ Test Report No: Cable complied with the requirements Specified in the "Test Procedure * / SPN 15580-2 Rev A

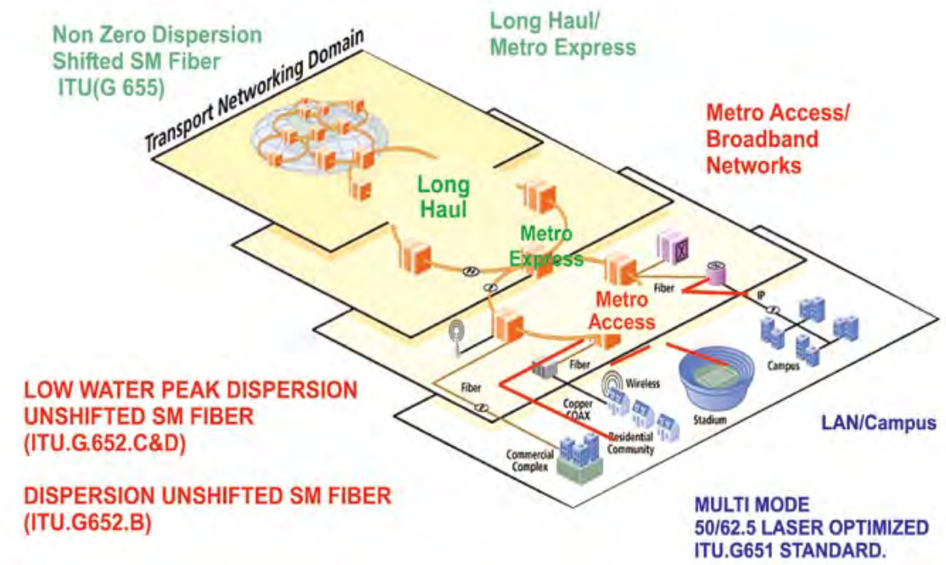
Additional Test Information: PN# 270618030377

Certification Manager
Jay Erik Storgaard

Issuing Body: UL International Demko A/S, Borupvang 6A, 2750 Ballerup, Denmark, Tel. +45 44 85 65 65
info.dk@ul.com, www.ul.com

www.mefc.com

MEFC Offers Right Fiber Selection for your network



MEFC FIBER OPTIC SERVICES

- Customized, Fiber to home, Office, Desk, (FTTX)
- FOC Network Consultant, Technical Assistance Network Design and Site Survey
- Fiber Optic Training & Certification
- Troubleshooting, Fault Location and Restoration
- OSP Project Engineering Services, Cable Installation, Splicing Termination and Testing

FIBER OPTIC GLOSSARY

Absorption	That portion of optical attenuation in optical fiber resulting from the conversion of optical power to heat. Caused by impurities in the fiber such as hydroxyl ions.
Acceptance Angle	The half-angle of the cone within which incident light is totally internally reflected by the fiber core. It is equal to sin-1(NA).
APC	Abbreviation for angle polished connector. A5°-15° angle on the connector tip for the minimum possible back reflection.
Armor	A protective layer, usually metal, wrapped around a cable.
Asynchronous Transfer Mode (ATM)	A transmission standard widely used by the telecom industry. A digital transmission-switching format with cells containing 5 bytes of header information followed by 48 data bytes. Part of the B-ISDN standard.
Attenuation	Loss of signal power between points. In optical cables, attenuation is a ratio of input power vs. output power, measured in decibels per unit length, usually dB/km.
Attenuation Coefficient	A factor expressing optical power loss per unit of length, expressed in dB/Km.
Avalanche Photodiode (APD)	A photodiode that exhibits internal amplification of photocurrent through avalanche multiplication of carriers in the junction region.
Average Power	The average level of power in a signal that varies with time.
Backreflection (BR)	In cases where light is launched into an optical fiber, back reflection refers to the light that is returned to the launch point.
Backscattering	The return of a portion of scattered light to the input end of a fiber; the scattering of light in the direction opposite to its original propagation.
Backbone	A high-speed transmission system used to connect relatively distant points. Backbone networks can be used to join autonomous networks within buildings or between different buildings.
Bel (B)	The logarithm to the base 10 of a power ratio, expressed as B =logio(Pi/P2), where Pi and P2 are distinct powers. The decibel, equal to one-tenth bel, is a more commonly used unit.
Bending Loss	Attenuation caused by high-order modes radiating from the outside of a fiber optic wave-guide, which occur when the fiber is bent around a small radius. See also macro bending, micro bending.
Bandwidth	The information carrying capacity of a fiber. The bandwidth for a given wavelength is the lowest frequency at which optical power has decreased by 3 dB and is expressed in MHz.km.
Bend Radius	The radius of curvature that an optical fiber cable can bend without causing harmful effects on the optical or mechanical performance of the cable.
BER (Bit Error Rate)	The fraction of bits transmitted that are received incorrectly.
Bidirectional	Operating in both directions. Bidirectional couplers operate the same way regardless of the direction light passes through them. Bidirectional transmission sends signals in both directions, sometimes through the same fiber.
Birefringent	Having a refractive index that differs for light of different polarizations.
Broadband	A method of communication where the signal is transmitted by being impressed on a high-frequency carrier.
Buffer	In optical fiber, a protective coating applied directly to the fiber. 2) A routine or storage used to compensate for a difference in rate of flow of data, or time of occurrence of events, when transferring data from one device to another.
Cable	One or more optical fibers enclosed, with strength members, in a protectivecovering.

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Cable assembly	A cable that is connector terminated and ready for installation. The wavelength range between 1530 nm and 1562 nm used in some CWDM and DWDM applications.
C-Band	Maximum number of channels that a cable system can carry simultaneously.
Channel Capacity	Different wavelengths travel along an optical medium at different speeds. Wavelengths reach the end of the medium at different times, causing the light pulse to spread. This chromatic dispersion is expressed in picoseconds (of dispersion) per kilometer (of length) per nanometer (of source band width). It is the sum of material and waveguide dispersion.
Chromatic Dispersion	The layer of material, usually glass, that immediately surrounds the fiber core. The cladding is usually coated with another material to provide protection when handling.
Cladding	A mode confined to the cladding; a light ray that propagates in the.
Cladding Mode	The process of cutting an optical fiber by a controlled fracture of the glass, for the purpose of obtaining a fiber end, which is flat, smooth, and perpendicular to the fiber axis. Coating A material applied to the cladding for protective purposes.
Cleave	CWDM allows eight or fewer channels to be stacked in the 1550 nm region.
Coarse Wavelength-division	In a wire or cable, the measurement of the location of the center of the conductor with respect to the geometric center of the circular insulation.
Multiplexing (CWDM)	A mechanical or optical device that provides a demountable connection between two fibers or a fiber and a source or detector.
Concentricity	The fixed or stationary half of a connection that is mounted on a panel/bulkhead. Receptacles mate with plugs.
Connector	The central part of the glass construction through which light is.
Connector Receptacle	The wavelength at which a singlemode fiber transmits a single mode of light.
Core	The standard unit used to express gain or loss of optical power. A standard logarithmic unit for the ratio of two powers, voltages or currents. In fiber optics, the ratio is power. dB = 10i $\log_{10}(P_1/P_2)$.
Cut-off Wavelength	This refers to the transmission of a multiplicity of closely spaced wavelengths in the 1550 nm region. Wavelength spacings are usually 100GHz or 200 GHz, which corresponds to 0.8 nm or 1.6 nm. DWDM bandsinclude the C-Band, the S-Band, and the L-Band.
Decibel (dB)	Nonmetallic. All-dielectric designs are inherently nonconductive; all-dielectric cables contain no metal and are lightning resistant.
Dense Wavelength-division Multiplexing (DWDM) **Dielectric**	The cause of bandwidth limitations in a fiber. Dispersion causes a broadening of input pulses along the length of the fiber. Two major types are mode dispersion caused by differential optical path lengths in a multimode fiber and material dispersion caused by a differential delay of various wavelengths of light in a waveguide material.
Dispersion Dispersion-compensating Fiber (DCF)	A fiber that has the opposite dispersion of the fiber being used in a transmission system. It is used to nullify the dispersion caused by that.
Dispersion-compensating Module (DCM)	This module has the opposite dispersion of the fiber being used in a transmission system. It is used to nullify the dispersion caused by that fiber.It can be either a spool of a special fiber or a grating based module.
Dispersion-shifted Fiber (DSF)	A type of single-mode fiber designed to have zero dispersion near 1550 nm.This fiber type works very poorly for DWDM applications because of highfiber non-linearity at the zero dispersion point.

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Double-window Fiber	This term is used two ways. For multimode fibers, the term means that the fiber is optimized for 850 nm and 1310nm operation. For single-mode fibers the term means that the fiber is optimized for 1310 nm and 1550 nm operation.
Duplex Cable	Atwo-fiber cable suitable for duplex transmission.
Effective Area	The area of a single-mode fiber that carries the light.
EIA	Abbreviation for Electronic Industries Association. An organization that sets video and audio standards.
Erbium-doped Fiber Amplifier (EDFA)	Optical fibers doped with the rare earth element, erbium, which can amplify light in the 1550 nm region when pumped by an external light source.
Extrinsic Loss	In a fiber interconnection, that portion of loss not intrinsic to the fiber but related to imperfect joining of a connector or splice.
Eye Pattern	Also called eye diagram. The proper function of a digital system can be quantitatively described by its BER, or qualitatively by its eye pattern. The «openness» of the eye relates to the BER that can be achieved.
Ferrule	A rigid tube that confines or holds a fiber as part of a connector assembly.
Fiber Distributed Data Interface (FDDI)	An ANSI standard to ensure compatibility of components from different manufacturers.
Fiber Optic Attenuator	A component installed in a fiber optic transmission system that reduces the power in the optical signal. It is often used to limit the optical power received by the photodetector to within the limits of the optical receiver.
Fiber Optic Cable	A cable containing one or more optical fibers.
Fiber Optic Link	A transmitter, receiver, and cable assembly that can transmit information between two points.
Fiber-in-the-Loop (FTTL)	Fiber optic service to a node that is located in a neighborhood.
Fiber-to-the-Curb (FTTC)	Fiber optic service to a node connected by wires to several nearby homes, typically on a block.
Fiber-to-the-Home (FTTH)	Fiber optic service to a node located inside an individual home.
FOTP (Fiber Optic Test Procedure)	Standards developed and published by the Electronic Industries Association (EIA) under the EIA-RS-455 series of standards.
Four Wave Mixing (FWM)	Nonlinearity common in DWDM systems where multiple wavelengths mix together to form new wavelengths. Most prevalent near the zero-dispersion wavelength and at close wavelength spacings.
Frequency-division Multiplexing (FDM)	A method of deriving two or more simultaneous, continuous channels from a transmission medium by assigning separate portions of the available frequency spectrum to each of the individual channels.
Fresnel Reflection Loss	Reflection losses at the ends of fibers caused by differences in the refractive index between glass and air. The maximum reflection caused by a perpendicular air-glass interface is about 4% or about -14 dB.
FUT	Abbreviation for fiber under test. Refers to the fiber being measured by some type of test equipment.
Graded Index	A core refractive index profile that varies with the radius of the core.
Hard-clad Silica Fiber	An optical fiber having a silica core and a hard polymeric plastic cladding intimately bounded to the core.
Index-matching Fluid	Afluid or gel whose index of refraction nearly equals that of the fiber's core. Used to reduce Fresnel reflection loss at fiber ends. Also called index matching gel.

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Index of Refraction	Also refractive index. The ratio of the velocity of light in free space to the velocity of light in a fiber material. Always greater than or equal to one.
Insertion Loss	The loss of power that results from inserting a component, such AS connector or.
Halogens	Chemicals from the halogen family (chlorine, fluorine, bromine) are typically compounded into plastic materials to improve the flame retardance. When the materials are exposed to a high heat source, halogen gases are released, limiting the spread of flames but potentially causing a health hazard.
Insertion Loss	Total optical power loss caused by insertion of an optical component such as a connector, splice, or coupler into a previously continuous path.
Intrinsic Losses	Splice losses arising from differences in the fibers being spliced.
ISDN (Integrated Services Digital (Network)	ISDN is an international standard for transmitting digital information (text, sound, voice, data, video, etc.)
Jacket	The outer, protective covering of the cable.
Jitter	Small and rapid variations in the timing of a waveform due to noise, changes in component characteristics, supply voltages, imperfect synchronizing circuits, etc.
Jumper	A short fiber optic cable with connectors on both ends.
Large Core Fiber	Usually, a fiber with a core of 200 pm or more.
Large Effective Area Fiber (LEAF)	An optical fiber, developed by Corning, designed to have a large area in the core, which carries the light.
Launch Fiber	An optical fiber used to couple and condition light from an optical source into an optical fiber. Often the launch fiber is used to create an equilibrium mode distribution in multimode fiber. Also called launching fiber.
L-Band	The wavelength range between 1570 nm and 1610 nm used in some CWDM and DWDM applications.
Light	In a strict sense, the region of the electromagnetic spectrum that can be perceived by human vision, designated the visible spectrum and nominally covering the wavelength range of 0.4 um to 0.7 um. In the laser and optical communication fields, custom and practice have extended usage of the termto include the much broader portion of the electromagnetic spectrum that can be handled by the basic optical techniques used for the visible spectrum. This region has not been clearly defined, but, as employed bymost workers in the field, may be considered to extend from the nearultraviolet region of approximately 0.3um, through the visible region, and into the mid-infrared region to 30um.
Lightguide	Synonym for optical fiber.
Loose Tube Buffering	A cable construction in which the optical fiber is placed in a plastic tube having an inner diameter much larger than the fiber itself. The loose tube isolates the fiber from the exterior mechanical forces acting on the cushion. The space between the tube and the fiber is often filled with a gel to cushion the fiber.
Loss	The amount of a signal's power, expressed in dB, that is lost in connectors, splices, or fiber defects.
Loss Budget	The total acceptable loss for a given system from transmitter to receiver. Includes cables, splices and connectors.
Low Smoke, Zero Halogen (LSZH)	Thermoplastic or thermoset jacketing compounds that emit limited smoke and no halogens when exposed to high sources of heat.
Material Dispersion	Pulse dispersion due to the variations in a material's refractive index as a function of wavelength.

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Macrobending	In an optical fiber, all macroscopic deviations of the fiber's axis from a straight line; distinguished from microbending.
MAN (Metropolitan Area Network)	A network covering an area larger than a local area network. A wide area network that covers a metropolitan area. Usually, an interconnection of two or more local area networks.
Material Dispersion	Dispersion resulting from different velocities of each wavelength in material.
Mechanical Splice	An optical fiber splice accomplished by fixtures or materials, rather than by thermal fusion.
Microbending	Minute but severe bends in fiber that result in light displacement and increased loss. Most microbending can be avoided by the correct selection of materials and proper cabling, handling, and installation techniques.
Mode	A single electromagnetic wave traveling in a fiber.
Mode Field Diameter (MFD)	In singlemode fiber, the region in which the light transmitted is larger than the glass core diameter. This mode field diameter is a measured value and often listed as a requirement with core diameter in fiber specifications.
Mode Filter	A device that removes higher-order modes to simulate equilibrium mode distribution.
Multimode Dispersion	Dispersion resulting from the different transit lengths of different propagating modes in a multimode optical fiber. Also called modal dispersion.
Multimode (MM) Fiber	An optical fiber that has a core large enough to propagate more than one mode of light The typical diameter is 62.5 micrometers.
Numerical aperture (NA)	A measure of the light acceptance angle of the fiber.
Optical amplifier	A device that amplifies light without converting it to an electrical signal. Optical fiber An optical waveguide comprised of a light carrying core and cladding, which traps light in the core.
Optical time domain reflectometer (OTDR)	An instrument that used backscattered light to find faults in optical fiber and infer loss.
Overfilled launch	A condition for launching light into the fiber where the incoming light has a spot size and NA larger than accepted by the fiber, filling all modes in the fiber.
Pigtail	A fiber optic cable that has a connector on only one end.
Plastic optical fiber (POF)	An optical fiber made of plastic.
Plastic-clad silica (PCS) fiber	A fiber made with a glass core and plastic cladding.
Preform	The large diameter glass rod from which fiber is drawn.
Plenum Cable	A cable whose flammability and smoke characteristics allow it to be routed in a plenum area without being enclosed in a conduit.
Refraction	The bending of a beam of light at an interface between two dissimilar media or in a medium whose refractive index is a continuous function of position (graded-index medium).
Riser Cable	Indoor cables made especially for between floor applications.
Repeater, regenerator	A device that receives a fiber optic signal and regenerates it for retransmission used in very long fiber optic links.
Scattering	The change of direction of light after striking small particles that causes loss in optical fibers.
Single mode fiber	A fiber with a small core, only a few times the wavelength of light transmitted, that only allows one mode of light to propagate. Commonly used with laser sources for high speed, long distance links.

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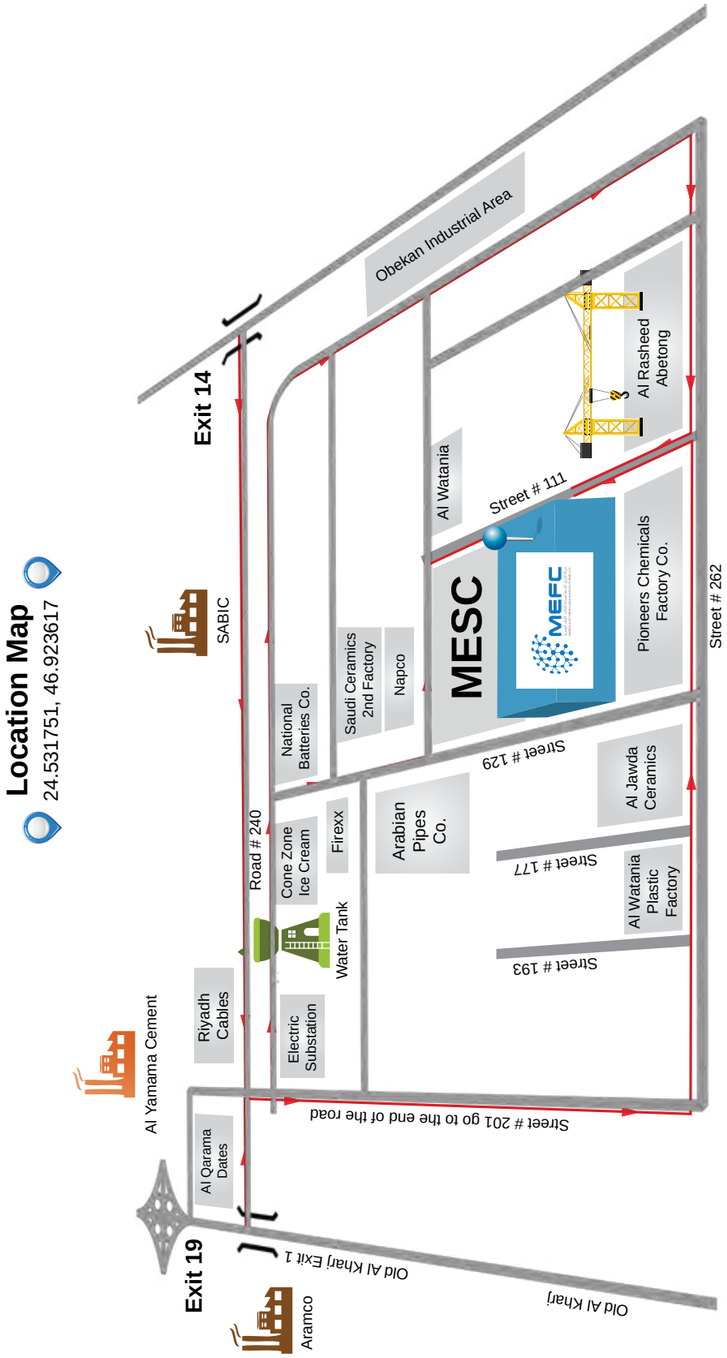
Step Index	A refractive index profile characterized by a uniform refractive index within the core and a sharp decrease at the core-cladding interface.
Strength Member	That part of a fiber optic cable composed of aramid yarn, steel strands, or fiberglass filaments that increase the tensile strength of the cable.
Splice (fusion or mechanical)	A device that provides for a connection between two fibers, typically intended to be permanent.
Tight Buffer	In tight buffer constructions the thermoplastic is extruded directly over the coated fiber, increasing the outside diameter to 900 micron (0.9 mm), an industry standard.
VCSEL	Vertical cavity surface emitting laser, a type of laser that emits light vertically out of the chip, not out the edge.
Visual fault locator	A device that couples visible light into the fiber to allow visual tracing and testing of continuity. Some are bright enough to allow finding breaks in fiber through the cable jacket.
Wave guide Dispersion	Dispersion caused by the fact that light travels at different speeds in the core and cladding of single mode fibers.
Wavelength division multiplexing (WDM)	A technique of sending signals of several different wavelengths of light into the fiber simultaneously.
Working margin	The difference (in dB) between the power budget and the loss budget (i.e. the excess power margin).
Wavelength Zero Dispersion	In singlemode fibers, the wavelength at which the effects of chromatic dispersion and waveguide dispersion are lowest; thus providing the greatest information carrying capacity.



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