

Symbols and Descriptions for Fibre Optic Cables

Symbol	Description
SLT	Single Loose Tube
MLT	Multi Loose Tube
TB	Tight Buffer
SA	Steel Armoured
NMA	Non-Metallic Armoured
SJ	Single Jacket Polyethylene
SHFJ	Single Jacket Low Smoke Zero Halogen
DJ	Double Jacket
DHFJ	Double Jacket Low Smoke Zero Halogen
GYxx	Glass Yarn
AYxx	Aramid Yarn
ADSS	All Dielectric Self Supported
C	Composite Cable with Power
Dry	Dry Core

Symbols and Descriptions according to DIN VDE 0888 Standard

Symbol	Description
A-	Outdoor cable
J-	Indoor cable
U-	Universal Cable
AT-	Breakout Cable
B	Armouring
(BN)	Glass Yarn
D	Multi Loose Buffer Gel-Filled
E	Singlemode fibre
F	Gel Filled Stranding Gaps
G	Multimode fibre
Y	PVC (Polyvinyl Chloride) jacket or protective cover
2Y	Polyethylene jacket or protective cover
(L)	Laminated Aluminium layer
(ZN)	Non-Metallic anti-buckling and strength members
Q	Swellable Tape
(SR)	Corrugated Steel Tape Armoured
H	Halogen Free Material
V	Tight buffered

Average Attenuation and distance for cabled fibre

Type	Standard	Maximum Attenuation (dB/km)			Distance (m)	
		850 nm	1300 nm	1310 nm	1550 nm	1625 nm
62,5	OM1	3,0	0,9	300	33	
50	OM2	2,8	0,8	550	90	
50	OM3	2,8	0,8	800	300	
50	OM4	2,6	0,8	1100	550	
9	G652.D - OS2	0,36	0,22	-	-	-
9	G655.D (NZDF)	-	0,22	0,24	-	-

Reference Standards

IEC	International Electrotechnical Commission
IEC 11801 2^oEd	Information technology - Generic cabling for customer premises
IEC 60331	Test for electrical and optical cables under fire conditions. Circuit integrity. Part 25 - Optical fibre cables
IEC 60754-1	Method for determination of amount of halogen acid gas evolved during combustion of polymeric materials taken from cables
IEC 60754-2	Determination of degree of acidity (corrosivity) of gases by measuring pH and conductivity
IEC 60793	Optical fibres
IEC 60794	Optical fibre cables
ITU-T	International Telecommunication Union
G.651.1	Characteristics of a 50/125 μ m multimode graded index optical fibre cable for the optical access network
G.652	Characteristics of a single-mode optical fibre and cable
G.655	Characteristics of a non-zero dispersion-shifted Singlemode optical fibre and cable
G.656	Characteristics of a fibre and cable with non-zero dispersion for wideband optical transport
G.657	Characteristics of a bending loss insensitive single mode optical fibre and cable for the access network
EN	European Norm
EN 50173-1	Information technology - Generic cabling systems
EN 50200	Methods of test for resistance to fire of unprotected small cables for use in emergency circuit
EN 50266	Test for vertical flame spread of vertically-mounted bunched wires and cables
EN 50267/2-1	Method of determination of amount of halogen acid gas evolved during combustion of polymeric materials taken from cables
EN 50267/2-2	Determination of degree of acidity (corrosivity) of gases by measuring pH and conductivity
EN 61034	Measurement of smoke density of cables burning under defined conditions



**TECHNICAL DATA SHEET
SECTION 1
CABLE CONSTRUCTION**

MLT-SWA09-DJö-(7.0kN) (A-DF(ZN)2Y(SR)2Y)

**MULTI LOOSE TUBE, DOUBLE PE JACKET, GALVANISED STEEL WIRE ARMORED
DIRECT BURIAL / DUCT TYPE**

- Heavy duty cable for direct burial / duct usage
- Suitable to be installed and used in harsh environments under heavy weather conditions
- Galvanized Steel Wire armoring provides excellent tensile strength extra protection against rodents, as well as good flexibility
- Suitable to be used for all type of underground applications
- Water blocking jelly within the tubes and tape over the tubes give water and moisture resistance
- To be used as backbone cable for WAN, MAN, LAN applications and for GSM, CATV, SMATV networks

Characteristics	
Fibre Optic Type	SM: G652-B; G652-D; G655; G656; G657 MM: 62,5/125 OM1; 50/125 OM2-OM3-OM4-OM5
Central Strength member - Material	- Fiber Reinforced Plastic (FRP) - 2,2 mm nominal
Loose tubes - Material - Outer Diameter - Type of filling compound	- Polybutene Terephthalate (PBT) - 2,05 mm nominal - Thixotropic Gel
Tube assembly - Tube layout - Stranding type	- Tubes will be stranded around Cent. Strength Member symmetrically - Tubes will be stranded with SZ stranding method
Flooding compound - Water Blocking Material	- Water Blocking Swellable Tape - Gel filling compound
Core Binder Core Wrapping	- Polyester Yarn - Polyester Tape
Tensile Strength Member	Glass or Aramid Yarn
Rip cords	2 Polyester Ripcords
Inner Sheath - Material - Thickness	- Medium Density MDPE - 1,1 mm nominal
Armoring Rip cords	Galvanized steel wires 0,9 mm diameter 2 Polyester Ripcords
Outer Sheath - Material - Color - Thickness	- High Density Polyethylene HDPE - Black - 1,6 mm nominal
Identification	ETK KABLO, Year of Manufacture, code of cable, meter marking
Drum Length	Standard: 2000 meters ± 5 % Optional: 4000 meters ± 5 % although not advisable
Packaging	Wooden staved drum

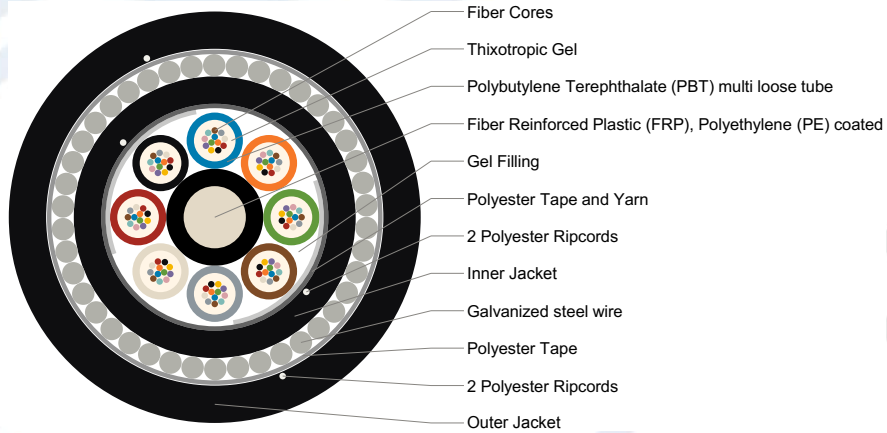
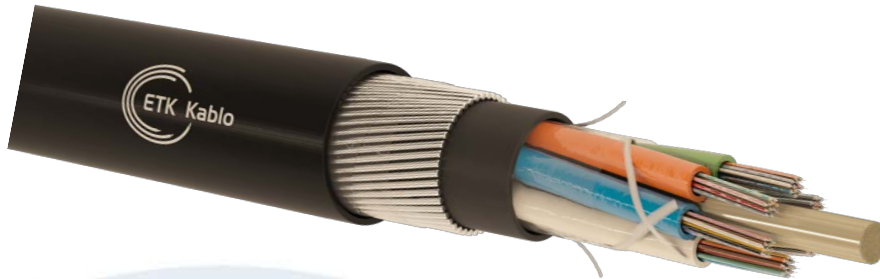
Mechanical Characteristics			
Test	Reference Standard	Specified Value	Acceptance Criteria
Tensile Strength	IEC 60794-1-21-E1	> 7000 N	$\Delta\alpha \leq 0.05$ dB/km Fiber Strain $\leq 0.33\%$
Crush Strength	IEC 60794-1-21-E3	4000 N / 100 mm, max 15 min	$\Delta\alpha \leq 0.05$ dB no damage
Impact	IEC 60794-1-21-E4	10 Nm, 3 impacts R= 300 mm	$\Delta\alpha \leq 0.05$ dB no damage
Torsion	IEC 60794-1-21-E7	100N, +/- 180° 10 cycles	$\Delta\alpha \leq 0.05$ dB no damage
Repeated Bending	IEC 60794-1-21-E11	20xD, 10 N, 35 cycle	$\Delta\alpha \leq 0.05$ dB, no damage
Bending Radius	IEC 60794-1-21-E6	R=20D, 4 turns, 3 cycles	$\Delta\alpha \leq 0.05$ dB, no damage
Temperature Cycling	IEC 60794-1-22-F1	-40°C to +70°C	Max.0.05 dB/km
Water Penetration	IEC 60794-1-22-F5B	3m sample Water column=1m, 24 hours	No water leakage in 24h

Fibre colours												
No.	1	2	3	4	5	6	7	8	9	10	11	12
Colour	Red	Yellow	Green	Blue	Violet	Brown	Black	Orange	Slate	Pink	Aqua	Natural

*Different colour code available

Fiber Count	Buffer Count	Filler Count	Cable Diameter Nominal (mm)	Cable Weight (Kg/Km)
4	2	4	13,4	330
6	3	3	13,4	330
8	4	2	13,4	330
12	1 (3,2)	5 (3,4)	13,4	330
24	2 (6,4)	4 (0,2)	13,4	330
36	3 (6)	3 (0)	13,4	330
48	4 (2)	2 (0)	13,4	330
50	5	1	13,4	330
60	5	1	13,4	330
72	6	0	13,4	330
96	8	0	15,7	436
144	12	0	19,1	555
192	16	2	22,3	657

**TECHNICAL DATA SHEET
SECTION 2
TECHNICAL DRAWING OF CABLE CONSTRUCTION**



**TECHNICAL DATA SHEET
SECTION 3
OPTICAL FIBER CORE SPECIFICATIONS
See Attached Fibre Core specifications**

Aug-23

