PFC COMMUNICATION CABLE CO.

TECHNICAL SPECIFICTION FOR DATA CABLE

CAT6 SFTP LSZH

SALE ENGINEERING DEPARTMENT

CODE:102036

CAT 6 | 250 MHz | SFTP | LSZH

VoIP

WWW.PFCCO.NET

SPECIFICATION FOR DATA CABLE

CAT6 SFTPLSZH

1- GENERAL

This specification details the construction of Category 6 network cable. The conductors are solid copper, covered with a solid plastic insulating compound. The insulated conductors (four twisted pairs) are inside cable core. The cable structure is completed with shield aluminum foil and LSZH jacket. The cable is fully color coded so that each insulated conductor in the cable is distinguishable from other insulated conductor. Cat6 cable supports frequencies up to 250 MHz

2- ASSOCIATED DOCUMENTS

This specification is in accordance with REA'ASTM (American society for testing and material), BS (British Standard Institute), IP (Institute of Petroleum), ISO (International Organization for Standardization) and TIA/EIA 568C2 has been specified.

3- TEMPERATURE AND ENVIRONMENT

The cables shall without detriment, perform suitably throughout a temperature range of –40 to +70 C.

4- CONDUCTOR

Each conductor is a solid wire of commercially pure annealed copper, smoothly drawn, circular in cross section, uniform in quality and free form defects. Conductors meet the quality requirements of ASTM B3. The maximum resistance for a cross section area of 1 mm^2 and a length of 1 km is 17.241 ohms when measured at 20±2 ºC.
The nominal conductor diameters may be 0.57 mm (23 AWG).

5- CONDUCTOR INSULATION

Each conductor is uniformly covered with solid polyethylene conforming to ASTM D-1248. Type III class A category 4 or 5 Grade E8. Insulation contains a suitable antioxidant system including a copper inhibitor. The insulation will be uniform, smooth and have non-porous surface.
The insulation colors are in accordance with the following table (1).

Table 1

Number Pairs	Color Coded
1	White – Blue / Blue
2	White – Orange / Orange
3	White – Green / Green
4	White – Brown / Brown

6– TWISTING

Two appropriately colored insulated conductors are uniformly twisted together to form a pair. The lays of all pairs are in the same direction and different for each pair in a unit.

7- RIP CORD

The rip cords will be placed over the core under the jacket and must be strong and flexible enough to be able to strip or the jackets easily.

8- ALUMINUM FOIL

An aluminum foil with copolymer coating on one side will be applied longitudinally with 3 mm overlap at least. The Aluminum thickness is 35 Micron.

9– SHIELD BRAID

Shielding braids consist of bobbin wires, located parallel, which have been braided into a tube.

10- DRAIN WIRE

A drain wire is the bare, stranded wire you find interleaved with the wrapping foil inside cables. This wire plays an important part in facilitating the cable's operation.

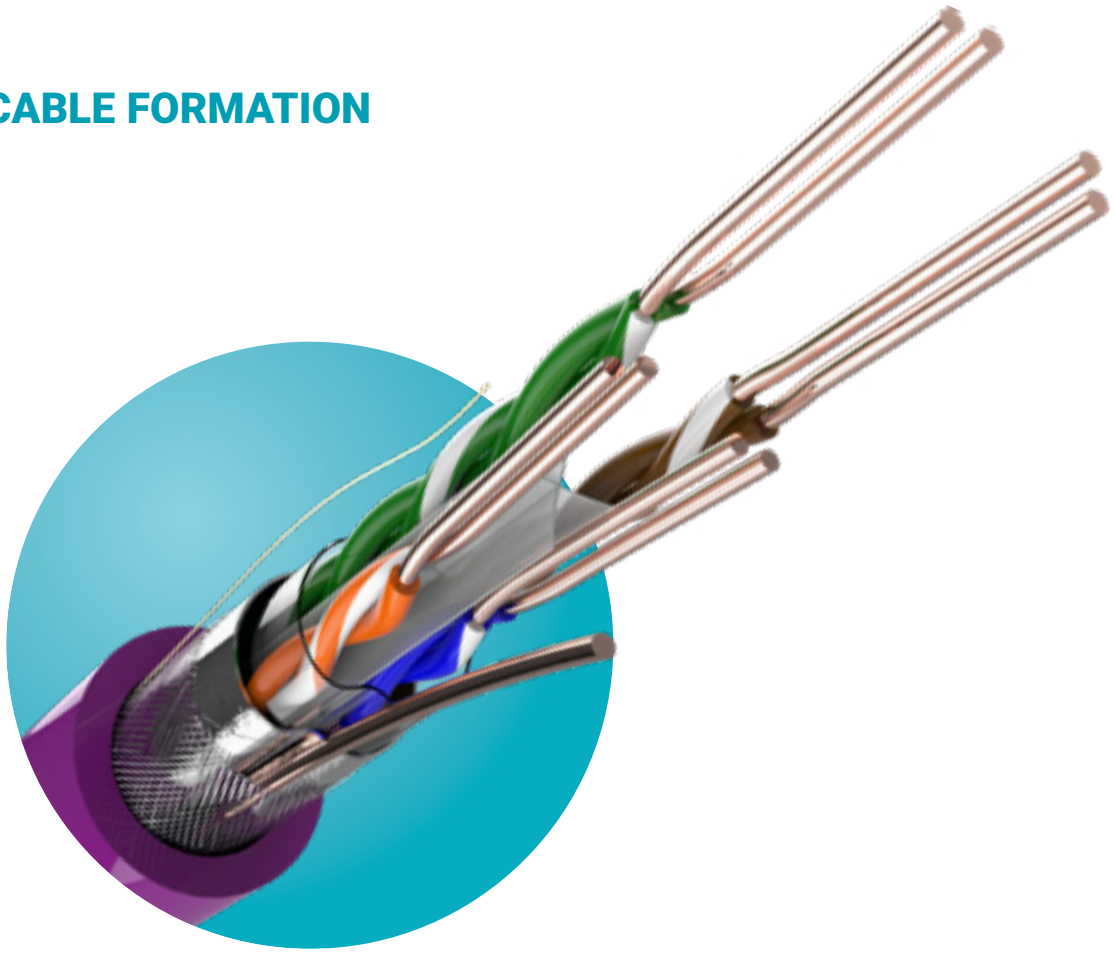
11- OUTER JACKET

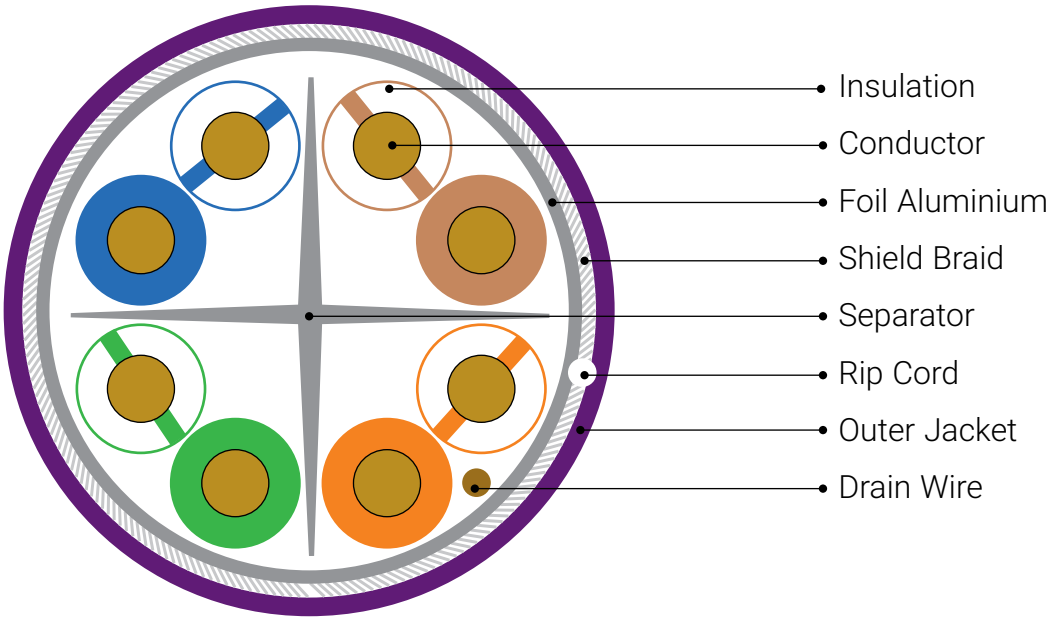
A LSZH compound will be applied on the cable core. The nominal jacket thickness will be 0.6mm.

12- IDENTIFICATION MARKING

Each length of the cable shall be permanently identified as to the manufacturer, batch number and cable type. The marking will be printed on the outer jacket.

13- CABLE FORMATION





14 – ELECTRICAL PARAMETERS

Freq.	Attenuation Max	Return Loss Min	NEXT Min	PS. NEXT Min	PS. ACR Min	PS. ELFEXT Min	ELFEXT Min
MHz	dB/100m	dB	dB	dB	dB	dB/100m	dB/100m
1	2.0	20.0	76.3	74.3	72.3	64.8	67.8
4	3.8	23.0	67.3	65.3	61.5	52.7	55.7
8	5.3	24.5	62.8	60.8	55.5	46.7	49.7
10	6.0	25.0	61.3	59.3	53.3	44.8	47.8
16	7.6	25.0	58.3	56.3	48.7	40.7	43.7
20	8.5	25.0	56.8	54.8	46.3	38.7	41.7
25	9.5	24.3	55.3	53.3	43.8	36.8	39.8
31.25	10.7	23.6	53.9	51.9	41.2	34.9	37.9
62.5	15.4	21.5	49.4	47.4	32.0	28.8	31.8
100	19.8	10.1	3.1	5.6	7.1	20.7	20.5
250	3.8	3.7	5.1	6.5	7.8	10.4	9.6

* All data in table are ideal and the real test results may deviate from the above table.

15 – TOTAL SPECIFICATION

Product Type		
Product Code	102036	
Shielding Type	Shield Foil (SF/UTP)	
Reference Standard	ISO/IEC 11801, ANSI/TIA-568-C.2	
Cable Length	305,500	
Conductor		
Conductor Type	Solid Oxygen-free Copper Pure 99.98%	
Wire Gauge (AWG)	23	
Conductor Qty.	4 Twisted Pairs	
Insulation		
Insulation Material	Polyethylene(HDPE)	
Insulation Diameter (mm)	0.92 ± 0.05	
Structure		
Aluminum Foil	YES	
Shield Braid	YES	
Sheath		
Material	LSZH (Complies RoHS)	
Thickness (mm)	0.6 ± 0.05	
Outer O.D. (mm)	7.2 ± 0.4	
Color	Violet (indoor)	
Electrical Characteristics (20°C)		
Distance	Max 90 Meter	Max 55 Meter
Data Rate Support	10/100/1000Base-T	10GB Base-T
Standard Bandwidth (MHz)	250	250 - 350
Reference Bandwidth (MHz)	550	550
1-250MHz, Characteristic Impedance (Ω)	100 ± 15	100 ± 15
Mechanical Characteristics		
Before Aging Tensile Strength (Mpa)	≥13.5	
Before Aging Elongation (%)	≥150	
After Aging Tensile Strength (Mpa)	≥12.5	
After Aging Elongation (%)	≥125	
Surface Printing		
Marker Height (mm)	3.0 ± 0.3	
Distance Marker(m)	1	
Color	Black	
Others		
Rip Cord	Yes	
Drain Wire	Yes	
Separator	Yes	
Packaging	Wooden Reel	

16- FLUKE TEST

This test is a random from 40000 meter cable production

LINKWARE™ PC
CABLE TEST MANAGEMENT SOFTWARE

Cable ID: CAT6-SFTP-PER-90M
Test Limit: TIA Cat 6 Perm. Link
Limits Version: V7.5
Date / Time: 2020/09/29 14:37:46
Operator: www.iranfluke.ir
Headroom 5.1 dB (NEXT 3,6-7,8)
Cable Type: Cat 6 F/UTP
NVP: 70.0%

Main: Versiv
S/N: 1719045
Software Version: V6.5 Build 5
Calibration Date: 2020/08/17
Adapter: DSX-8000 (DSX-PLA804)
S/N: 3883021

Test Summary: PASS
Remote: Versiv
S/N: 1719046
Software Version: V6.5 Build 5
Calibration Date: 2020/08/17
Adapter: DSX-8000R (DSX-PLA804)
S/N: 3883022

Length (m), Limit 90.0	[Pair 7,8]	90.2
Prop. Delay (ns), Limit 498	[Pair 4,5]	461
Delay Skew (ns), Limit 44	[Pair 4,5]	31
Resistance (ohms)	[Pair 1,2]	15.07
Insertion Loss Margin (dB)	[Pair 4,5]	3.8
Frequency (MHz)	[Pair 4,5]	250.0
Limit (dB)	[Pair 4,5]	31.1

	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-7,8	3,6-7,8	1,2-3,6	3,6-7,8
NEXT (dB)	6.6	5.1	6.7	5.1
Freq. (MHz)	226.5	211.5	232.0	211.5
Limit (dB)	36.0	36.5	35.9	36.5
Worst Pair	3,6	3,6	3,6	3,6
PS NEXT (dB)	6.1	5.4	6.1	5.7
Freq. (MHz)	234.5	213.0	234.5	245.0
Limit (dB)	33.2	33.9	33.2	32.9

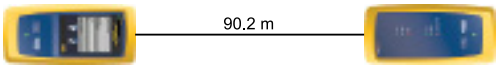
PASS	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	1,2-4,5	1,2-4,5
ACR-F (dB)	16.0	16.0	17.2	17.3
Freq. (MHz)	72.8	15.4	231.5	223.0
Limit (dB)	27.0	40.5	16.9	17.2
Worst Pair	4,5	4,5	4,5	4,5
PS ACR-F (dB)	16.7	16.2	17.8	18.7
Freq. (MHz)	4.6	4.1	227.0	227.0
Limit (dB)	47.9	48.9	14.1	14.1

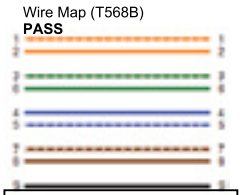
N/A	MAIN	SR	MAIN	SR
Worst Pair	3,6-4,5	3,6-4,5	1,2-3,6	1,2-3,6
ACR-N (dB)	7.9	7.7	10.9	11.8
Freq. (MHz)	7.9	23.9	232.5	250.0
Limit (dB)	54.5	43.2	6.0	4.2
Worst Pair	3,6	3,6	3,6	3,6
PS ACR-N (dB)	9.1	8.6	10.2	10.3
Freq. (MHz)	23.9	23.9	234.5	250.0
Limit (dB)	40.8	40.8	3.2	1.6

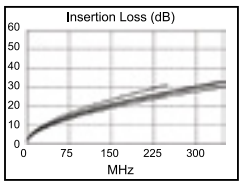
PASS	MAIN	SR	MAIN	SR
Worst Pair	1,2	4,5	7,8	7,8
RL (dB)	3.7	2.0	3.9	3.4
Freq. (MHz)	123.5	75.0	137.0	174.5
Limit (dB)	13.1	15.2	12.6	11.6

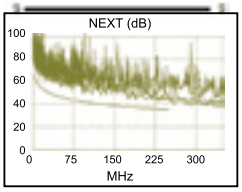
Compliant Network Standards:

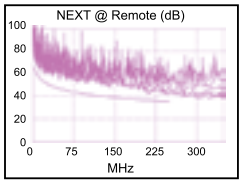
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	2.5GBASE-T	5GBASE-T
ATM-25	ATM-51	ATM-155
100VG-AnyLan	TR-4	TR-16 Active
TR-16 Passive		

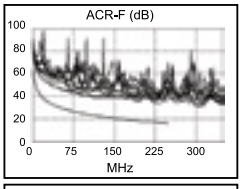


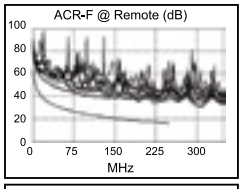


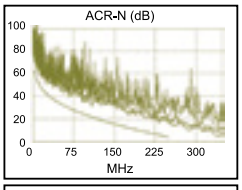


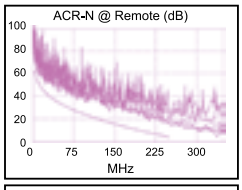


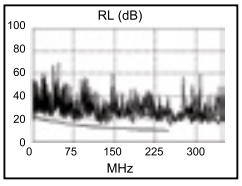


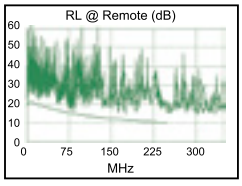












LinkWare™ PC Version 10.7

Project: PFC
PFC 990708.flw

FLUKE networks

شرکت پارسیان فیبر ارتباط
آدرس دفتر مرکزی: تهران
ضلع شمالی بزرگراه رسالت
نرسیده به خیابان استاد حسن بنا
پلاک-۱۱۴۷ کد پستی: ۱۶۷۱۶۱۷۸۱۳
شماره تماس ملی: **۱۵۲۸**
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