PERSIAN FIBER COMMUNICATION CO.

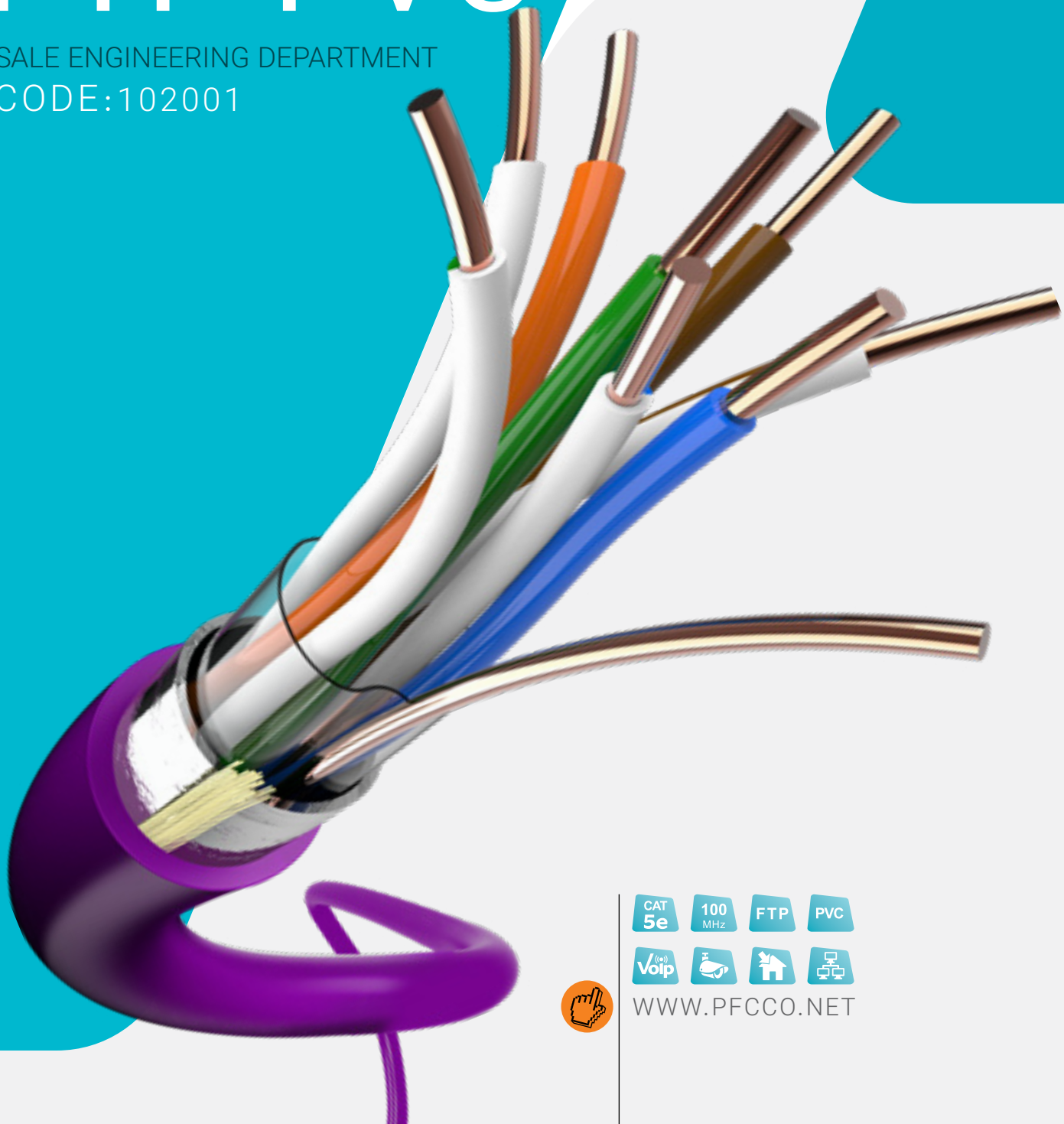
TECHNICAL SPECIFICTION FOR DATA CABLE

CAT5e

FTP PVC

SALE ENGINEERING DEPARTMENT

CODE:102001



CAT 5e | 100 MHz | FTP | PVC

Voip

WWW.PFCCO.NET

PFC

SPECIFICATION FOR DATA CABLE

CAT5e FTP PVC

1- GENERAL

This specification details the construction of Category 5e 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 aluminum foil and PVC jacket. The cable is fully color coded so that each insulated conductor in the cable is distinguishable from other insulated conductor. Cat-5e cable supports frequencies up to 100 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 0.51 mm.

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- 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.

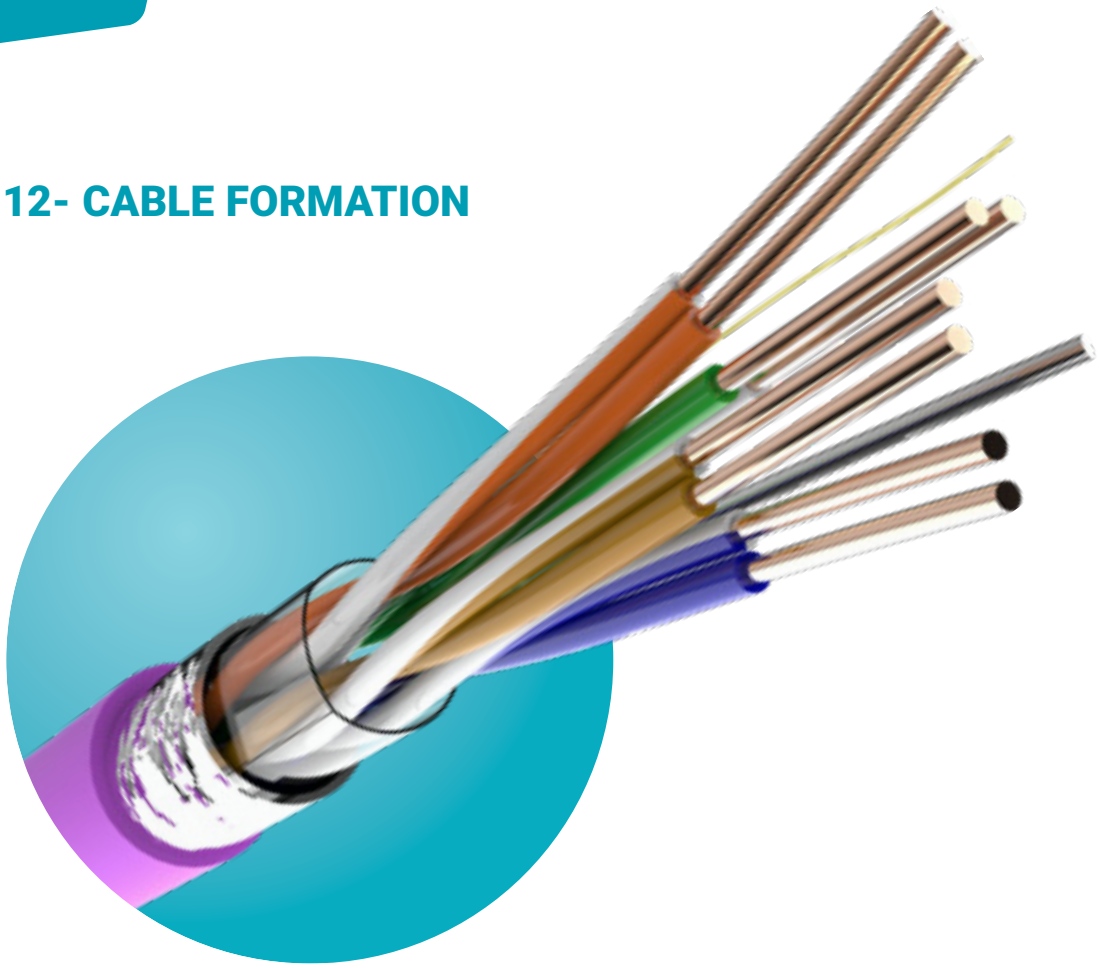
10- OUTER JACKET

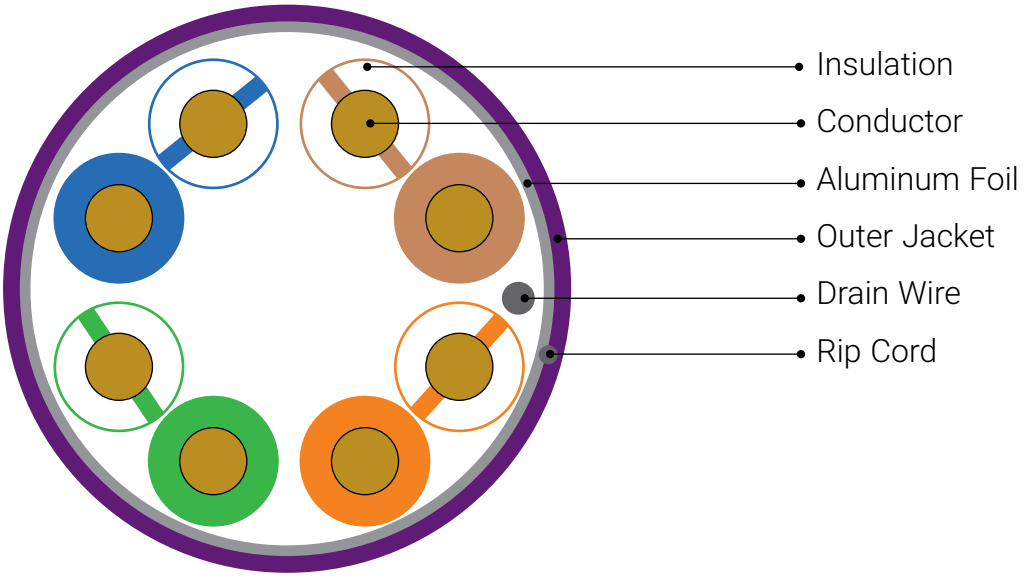
A PVC compound will be applied on the cable core. The nominal jacket thickness will be 0.5mm.

11- 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.

12- CABLE FORMATION





13 – 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	3.9	10.1	3.1	5.6	7.1	20.7	20.5

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

14 – TOTAL SPECIFICATION

Product Type		
Product Code	102001	
Shielding Type	Foil (F/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)	24	
Conductor Qty.	4 Twisted Pairs	
Insulation		
Insulation Material	Polyethylene(HDPE)	
Insulation Diameter (mm)	0.87 ± 0.05	
Structure		
Aluminum Foil	Yes	
Shield Braid	No	
Sheath		
Material	PVC (Complies RoHS), CM	
Thickness (mm)	0.5 ± 0.05	
Outer O.D. (mm)	5.5 ± 0.4	
Color	Violet(indoor)	
Electrical Characteristics (20°C)		
Distance	Max 90 Meter	Max 55 Meter
Data Rate Support	1000Base-T	10/100/1000Base-T
Standard Bandwidth (MHz)	0-100	100 - 350
Reference Bandwidth (MHz)	350	350
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	No	
Packaging	Wooden Reel	

15- FLUKE TEST

This test is a random from 40000 meter cable process production

LINKWARE™PC
CABLE TEST MANAGEMENT SOFTWARE

Cable ID: CAT5E-FTP-CHA-90M
Date / Time: 06/30/2020 02:48:54 PM
Headroom 3.1 dB (NEXT 12-78)
Test Limit: TIA Cat 5e Channel
Cable Type: Cat 5e F/UTP
NVP: 69.0%

Operator: IRANFLUKE
Software Version: 2.7800
Limits Version: 1.9500

Test Summary: PASS
Model: DTX-1800
Main S/N: 9206015
Remote S/N: 9206016
Main Adapter: DTX-CHA001
Remote Adapter: DTX-CHA001

Length (m), Limit 100.0	[Pair 78]	91.8
Prop. Delay (ns), Limit 555	[Pair 45]	462
Delay Skew (ns), Limit 50	[Pair 45]	18
Resistance (ohms)	[Pair 12]	20.4
Insertion Loss Margin (dB)	[Pair 45]	3.9
Frequency (MHz)	[Pair 45]	100.0
Limit (dB)	[Pair 45]	24.0

	Worst Case Margin		Worst Case Value	
PASS	MAIN	SR	MAIN	SR
Worst Pair	12-78	36-45	12-78	12-78
NEXT (dB)	3.1	4.9	6.5	5.6
Freq. (MHz)	18.9	38.0	70.8	90.0
Limit (dB)	42.4	37.3	32.7	30.9
Worst Pair	12	36	78	12
PS NEXT (dB)	5.6	7.3	8.0	7.9
Freq. (MHz)	18.9	38.3	70.5	90.3
Limit (dB)	39.4	34.2	29.7	27.8

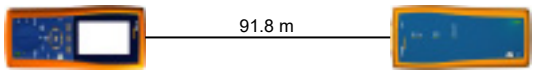
PASS	MAIN	SR	MAIN	SR
Worst Pair	12-78	78-12	12-45	12-45
ACR-F (dB)	20.5	20.7	21.7	22.0
Freq. (MHz)	72.8	72.8	100.0	100.0
Limit (dB)	20.2	20.2	17.4	17.4
Worst Pair	12	45	12	12
PS ACR-F (dB)	20.7	20.6	22.3	21.9
Freq. (MHz)	2.8	1.0	100.0	100.0
Limit (dB)	45.6	54.4	14.4	14.4

N/A	MAIN	SR	MAIN	SR
Worst Pair	12-78	12-78	12-78	12-78
ACR-N (dB)	4.6	6.6	14.2	9.9
Freq. (MHz)	18.9	19.0	99.0	90.3
Limit (dB)	32.5	32.4	6.3	8.1
Worst Pair	12	12	78	12
PS ACR-N (dB)	7.1	9.0	16.2	12.2
Freq. (MHz)	18.9	19.0	99.0	90.3
Limit (dB)	29.5	29.4	3.3	5.1

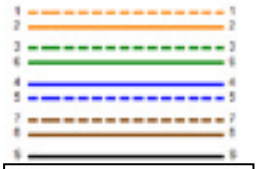
PASS	MAIN	SR	MAIN	SR
Worst Pair	45	78	78	12
RL (dB)	10.1	9.6	15.0	11.9
Freq. (MHz)	20.4	40.8	100.0	95.0
Limit (dB)	16.9	13.9	10.0	10.2

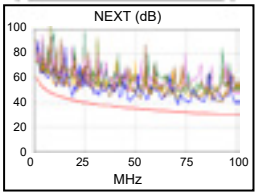
Compliant Network Standards:

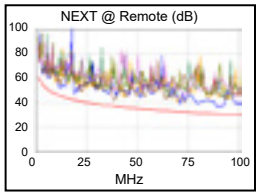
10BASE-T	100BASE-TX	100BASE-T4
1000BASE-T	ATM-25	ATM-51
ATM-155	100VG-AnyLan	TR-4
TR-16 Active	TR-16 Passive	

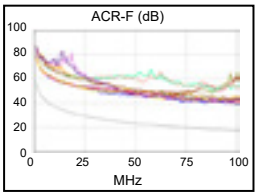


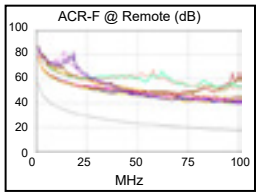
Wire Map (T568B)
PASS

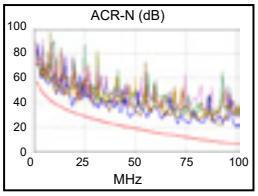


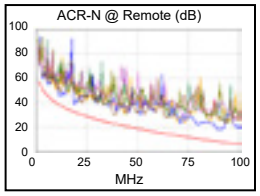


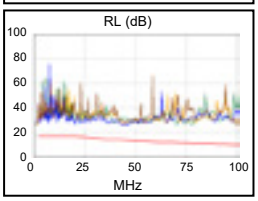


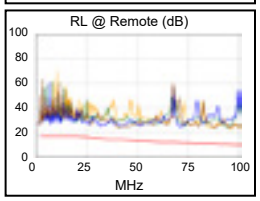












LinkWare™ PC Version 9.7

Project: PFC/CABLE
PFC.flw

Site: TEST

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**
تلفن فروش: ۰۲۱-۷۲۹۷۸۰۰۰