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SPECIFICATION FOR DATA CABLE

CATO FTPDJ.CST

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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 aluminum foil and double jacket that inner jacket is PVC and outer jacket is HDPE. 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 mm² and a length of 1 km is 17.241 ohms when measured at 20±2 °C.

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

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.

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- INNER JACKET

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

11- MIDDLE LAYER

The Corrugated Steel Tape Armored cable is designed for external underground installations in ducts or by direct burial.

Corrugated steel tape provides rodent protection and polyamide provides anti-termite protection.

The armored structure also provides additional compressive strength for the cable

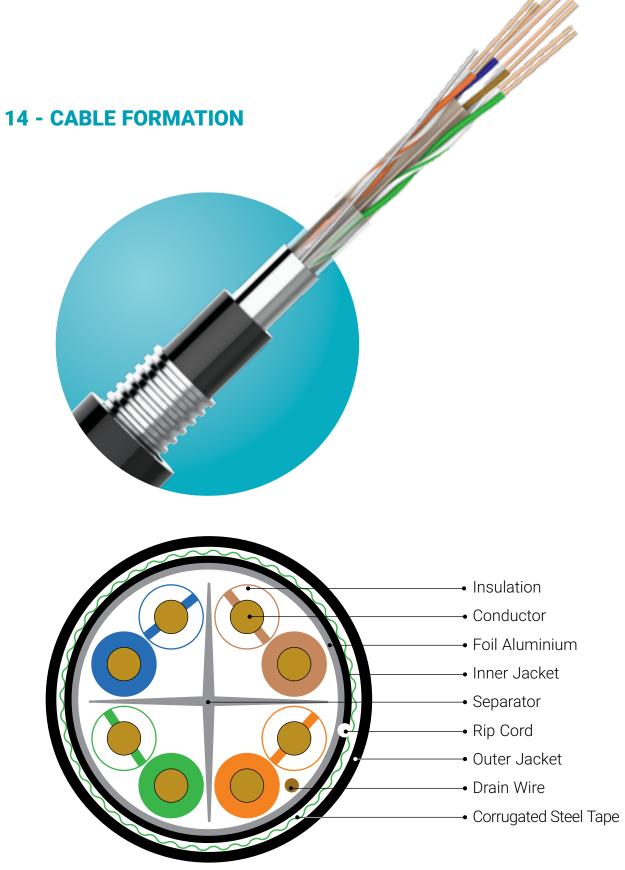
12- OUTER JACKET

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

13- 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.







15 - 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	3.3	4.7	5.7	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.





16 - TOTAL SPECIFICATION

Product Type							
Product Code	102046						
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)	23						
Conductor Qty.	Conductor Qty. 4 Twisted Pairs						
Insul	ation						
Insulation Material	Polyethyle	ene(HDPE)					
Insulation Diameter (mm)	0.92 ± 0.05						
Stru	cture						
Aluminum Foil	Yes						
Middle Layer	Corrugated	l steel tape					
Shield Braid	N	0					
Sheath							
Material	HDPE (Complies RoHS)						
Thickness1 (mm)	0.5± 0.05						
Thickness2 (mm)	ckness2 (mm) 0.6± 0.05						
Outer O.D. (mm)	15.1 ± 0.4						
Color	Black (Outdo	or-Industrial)					
Electrical Chara	cteristics (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 C	haracteristics						
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	White						
Others							
Rip Cord	Yes						
Drain Wire	Yes						
Separator	Yes						
Packaging	Packaging Wooden Reel						



17- FLUKE TEST

This test is a random from 30000 meter cable production

