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PVC INSULATED JUMPER WIRE BTS-M-030 TJV



GENERAL

This Specification covers the requirements of jumper wire used for cross connecting purposes and main distribution frame wiring by TOT Corporation Public Company Limited.

CONSTRUCTION

Conductor : Tinned annealed copper wire, 0.50 and 0.60 mm. (24, 22 AWG) in size.

Insulation : Polyvinyl chloride

Twisted Pairs : The insulated conductor are twisted into pairs, or triple with specified color combinations to provide pair identification.

Identification of conductor : The insulation of conductor shall be coloured as follows :

Total number of conductor in wire	Construction	Dia. (mm)	Colour of Insulation	Length (m)	Std Pkg.
1	Single	0.50	Green	200	1 Coil
2	Pair	0.50	Black and Yellow	200	1 Coil
2	Pair	0.65	Red and White		
3	Triple	0.50	Red and White and green		
Tolerance				±1%	

No. of Cores nominal	Conductor Diameter : 0.50 mm (24 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (mm)	Standard Length (m)
2	2	6	200
3	3	10	200
No. of Cores nominal	Conductor Diameter : 0.65 mm (22 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (mm)	Standard Length (m)
2	3	10	200

ELECTRICAL CHARACTERISTICS : TJV

- Conductor resistance when measured at or corrected to 20°C.
 0.5 mm. = 95.1 Ohm/km.
 0.65 mm. = 60.7 Ohm/km.
- Insulation resistance when measured on 10 m. of single wire.
 (Immersed in water) = 200 Megohm-km.
- Insulation resistance when measured on 10 m. of single wire.
 (Immersed in water) = 1.0 kv (AC) 3 seconds.

INSIDE-OUTSIDE STATION WIRE

BTS-M-027 TIEV-CC OR TIEV



GENERAL

This specification covers the requirements of inside-outside station wire used for direct connection from the outside protector to the subscriber's set by The Telephone Organization to Thailand (TOT)

CONSTRUCTION

Conductor : Solid annealed bare copper wire, 0.50, 0.65 and 0.90 mm. (24, 22, 19 AWG) in size

Insulation : Color coded solid high density polyethylene.

Twisted Pairs : The insulated conductors are twisted into pairs triple or quad. The four conductors of the quad shall be twisted into a "Spiral configuration with the red and green conductors diagonally four" opposite each other in the quad.

Identification of conductors:

Total number of conductor in wire	Construction	Lay up	Colour of Insulation
2	Pair	R G	Red and Green
3	Triple	R G Y	Red, Green and Yellow
4	Quad	R Y B G	Red, Green, Yellow and Black

General : This cable use for inside outside station wire used for direct connection from the outside protector to the subscriber's set

Jacket : Polyvinyl chloride coloured ivory or gray.

Identification Marker : Manufacturer's name, Type and size, year of manufacture.

No. of Cores nominal	Conductor Diameter : 0.50 mm (24 AWG)		
	Overall Dia. approx. (mm)	Cable IRT. approx. (mm)	Standard Length (m)
2	3	13	100
3	3	15	100
4	3	17	100
5	4	21	100
6	4	24	100

No. of Cores nominal	Conductor Diameter : 0.65 mm (22 AWG)		
	Overall Dia. approx. (mm)	Cable IRT. approx. (mm)	Standard Length (m)
2	3	13	100
3	3	15	100
4	3	17	100
5	4	21	100
6	4	24	100

No. of Cores nominal	Conductor Diameter : 0.90 mm (19 AWG)		
	Overall Dia. approx. (mm)	Cable IRT. approx. (mm)	Standard Length (m)
2	3	13	100
3	3	15	100
4	3	17	100
5	4	21	100
6	4	24	100

All cable dimensions and weights are subject to manufacturing tolerances.

ELECTRICAL CHARACTERISTICS : TJV

No.	Conductor Diameter mm. (AWG)	0.50 (24)	0.65 (22)	0.90 (19)
1.	Conductor resistance at temp. 20°C, Max. Ohm/km.	90.2	57.1	28.5
2.	Insulation Resistance, Megohm-km Minimum At Temp. 25°C With DC Potential of 100-500 Volts.	16,000	16,000	16,000
3.	High Voltage Test (Cond. to Cond) DC for 3 sec., Volts. (kv)	3.0	3.6	4.5

FIGURE 8 ALPETH BTS-M-005 Type : AP (8)



GENERAL

This Specification covers the requirements for telephone cable 0.4, 0.5, 0.65 and 0.9 mm. gauges copper conductor, fully color coded even count polyethylene insulated twisted unit stranded, and alpeth sheathed for aerial installation. The cable shall be used on subscriber and junction line.

CONSTRUCTION

Conductor : Annealed copper conductor, 0.40, 0.50, 0.65 and 0.90 mm. (26, 24, 22, 19 AWG) in size.

Insulation : Polyethylenel insulation.

Twisted Pairs : The insulated conductor are twisted into pairs with specified color combinations to provide pair identification.

Cable Assembly : Cables having 25 pairs and less are assembled in a single group. Cables having more than 25 pairs are assembled in units each being identification by color coded unit binders.

Identification Tape : A tape, indelibly marked with the following details, shall be laid over the cable core or under the outer lapping tape (nonhygroscopic dielectric material)

a. Manufacturer's Name

b. Year of Manufacture (Duration of two years) or the marking shall be printed on the outer lapping tape.

The marking shall appear at intervals not more than 50 cm throughout the cable length.

Core covering : Nonhygroscopic dielectric tape.

Shielding : A corrugated polyethylene coated 0.2 mm aluminum tape is applied longitudinally with overlap.

Messenger Wire : Galvanized steel wire. No. of wire x Dia. of wire = 7 x 2.03 mm.

Outer Jack : High molecular weight, low or medium density polyethylene colored black.

Length Marker : Each length of cable shall be permanently identified as, manufacturer name, Year of manufacture, type and size of cable, and sequentially numbered length. The marking shall be printed on the outer jacket. An alternate method of marking may be used if acceptable to the Client.

No. of Pairs nominal	Conductor Diameter : 0.65 mm (22 AWG)		
	Overall Dia. approx. (mm) (Awbck)	Cable Wt. approx. (kg/km)	Standard Length (m)
3	9.7 x 9.6 x 22.0	312	1,000
4	10.3 x 9.6 x 22.6	323	1,000
5	10.8 x 9.6 x 23.1	334	1,000
6	11.0 x 9.6 x 23.3	342	1,000
8	11.7 x 9.6 x 24.0	361	1,000
10	12.1 x 9.6 x 24.4	379	1,000
12	12.6 x 9.6 x 24.9	379	1,000
13	12.9 x 9.6 x 25.2	406	1,000
15	13.5 x 9.6 x 25.8	425	1,000
16	13.7 x 9.6 x 26.0	434	1,000
20	14.7 x 9.6 x 27.0	469	1,000
25	15.8 x 9.6 x 28.1	513	1,000
30	16.8 x 9.6 x 29.1	556	1,000
40	18.6 x 9.6 x 30.9	641	1,000
50	20.1 x 9.6 x 32.5	723	1,000
75	23.4 x 9.6 x 35.8	931	500
100	27.3 x 9.6 x 39.7	1,137	500
150	31.9 x 9.6 x 44.3	1,547	500
200	36.2 x 9.6 x 48.6	1,953	500
225	38.2 x 9.6 x 50.6	2,144	500
250	39.9 x 9.6 x 52.3	2,136	500
300	42.9 x 9.6 x 55.3	2,719	250
350	46.4 x 9.6 x 58.8	3,138	250
400	49.0 x 9.6 x 61.4	3,519	250

No. of Pairs nominal	Conductor Diameter (0.90 mm (19 AWG))		
	Overall Dia. approx. (mm) (Awbck)	Cable Wt. approx. (kg/km)	Standard Length (m)
2	10.5 x 9.6 x 22.8	326	1,000
3	11.5 x 9.6 x 23.8	346	1,000
4	12.4 x 9.6 x 24.7	368	1,000
5	13.3 x 9.6 x 25.6	388	1,000
6	13.7 x 9.6 x 26.0	406	1,000
8	14.5 x 9.6 x 26.8	440	1,000
10	15.3 x 9.6 x 27.6	474	1,000
12	16.0 x 9.6 x 28.3	507	1,000
13	16.4 x 9.6 x 28.7	525	1,000
15	17.3 x 9.6 x 29.6	559	1,000
16	17.7 x 9.6 x 30.0	577	1,000
20	19.1 x 9.6 x 31.5	643	1,000
25	20.7 x 9.6 x 33.1	729	1,000
30	22.2 x 9.6 x 34.6	816	500
40	24.8 x 9.6 x 37.2	979	500
50	28.8 x 9.6 x 41.2	1,170	500
75	33.6 x 9.6 x 46.0	1,563	500
100	38.4 x 9.6 x 50.8	1,972	500
150	45.6 x 9.6 x 58.0	2,774	250
200	51.3 x 9.6 x 63.7	3,538	250

All cable dimensions and weights are subject to manufacturing tolerances. Spare pairs may be included at the manufacturer's discretion.

All cable dimensions and weights are subject to manufacturing tolerances. Spare pairs may be included at the manufacturer's discretion.

OPTION AND OTHER CONSTRUCTIONS

cables of other conductor size or having other mutual mutual capacitance than shown in this catalogue are tance than shown in this catalogue are available on request.

No. of Pairs nominal	Conductor Diameter : 0.85 mm (22 AWG)			No. of Pairs nominal	Conductor Diameter : 0.90 mm (19 AWG)		
	Overall Dia. approx. (mm) (Awt/C)	Cable Wt. approx. (kg/km)	Standard Length (m)		Overall Dia. approx. (mm) (Awt/C)	Cable Wt. approx. (kg/km)	Standard Length (m)
10	9.7 x 9.6 x 21.9	319	1,000	4	9.4 x 9.6 x 21.6	307	1,000
12	10.1 x 9.6 x 22.3	328	1,000	5	9.8 x 9.6 x 22.0	313	1,000
13	10.3 x 9.6 x 22.5	332	1,000	6	10.0 x 9.6 x 22.2	320	1,000
15	10.6 x 9.6 x 22.8	341	1,000	8	10.5 x 9.6 x 22.7	334	1,000
16	10.8 x 9.6 x 23.0	345	1,000	10	10.9 x 9.6 x 23.1	345	1,000
20	11.4 x 9.6 x 23.6	361	1,000	12	11.3 x 9.6 x 23.5	357	1,000
25	12.2 x 9.6 x 24.5	381	1,000	13	11.5 x 9.6 x 23.7	363	1,000
30	12.8 x 9.6 x 25.1	401	1,000	15	12.0 x 9.6 x 24.3	376	1,000
40	13.9 x 9.6 x 26.2	439	1,000	16	12.2 x 9.6 x 24.5	382	1,000
50	15.0 x 9.6 x 27.3	475	1,000	20	13.0 x 9.6 x 25.3	406	1,000
75	17.1 x 9.6 x 29.4	563	1,000	25	13.9 x 9.6 x 26.2	436	1,000
100	18.9 x 9.6 x 31.2	648	1,000	30	14.7 x 9.6 x 27.0	466	1,000
150	21.5 x 9.6 x 33.8	816	500	40	16.2 x 9.6 x 28.5	524	1,000
200	24.0 x 9.6 x 36.3	979	500	50	17.4 x 9.6 x 29.7	576	1,000
300	29.9 x 9.6 x 42.2	1,338	500	75	20.1 x 9.6 x 32.4	711	1,000
400	33.4 x 9.6 x 45.7	1,656	500	100	22.4 x 9.6 x 34.7	845	1,000
500	37.2 x 9.6 x 49.5	1,992	500	150	26.8 x 9.6 x 39.1	1,109	500
600	40.0 x 9.6 x 52.3	2,297	500	200	30.5 x 9.6 x 42.8	1,388	500
700	42.6 x 9.6 x 54.9	2,608	250	250	33.3 x 9.6 x 45.6	1,638	500
800	45.6 x 9.6 x 57.9	2,955	250	300	36.2 x 9.6 x 48.5	1,912	500
900	47.9 x 9.6 x 60.3	3,265	250	400	40.9 x 9.6 x 53.2	2,407	500
				500	44.8 x 9.6 x 57.1	2,897	250
				600	49.0 x 9.6 x 61.4	3,422	250

All cable dimensions and weights are subject to manufacturing tolerances. Spare pairs may be included at the manufacturer's discretion.

All cable dimensions and weights are subject to manufacturing tolerances. Spare pairs may be included at the manufacturer's discretion.

ELECTRICAL CHARACTERISTICS

Conductor Diameter mm (AWG)				0.40 (26)	0.50 (24)	0.65 (22)	0.90 (19)	
Mutual Capacitance, Average, nF/km				≤ 25 Pairs	52 ± 4			
				> 25 Pairs	52 ± 2			
Mutual Capacitance Deviation, %				rms. Maximum	3			
Capacitance Unbalance pF/km	Pair to pair	6 pairs or less	Individual Maximum	181				
		More than 6 pairs	rms. Maximum	45				
	Pair to Ground	All cables	Individual Maximum	2,625				
		6 pairs and larger	Maximum Average	574				
Far End Crosstalk Loss at 150 kHz, dB/km				rms. Maximum	67.8			
				Individual Maximum	57.8			
Near End Crosstalk Loss M.S. at 772 kHz, dB		Within Unit	13 pairs or less	56				
			18 and 25 pairs	60				
		Between Units	Adjacent 13 pairs or less	65				
			Adjacent 25 pairs	66				
				Non-adjacent	81			
Attenuation Nominal dB/km at 20°C				at 150 kHz	11.35	8.31	6.20	4.40
				at 772 kHz	22.83	18.52	14.63	10.40
Insulation Resistance, MegOhm-km				Minimum	36,000			
High Voltage Test dc for 3 sec., Volts				Conductor to Conductor	2,400	3,000	3,600	4,500
				Conductor to Shield	30,000			
DC Conductor Resistance, Ohms/km, at 20°C				Maximum	144.4	90.2	57.1	28.5
Resistance Unbalance %				Maximum Average	2.0	1.5	1.5	1.5
				Individual Maximum	5.0	5.0	4.0	4.0
Parameter Variations are Allowed as Follows :								
Maximum Number of Pairs with Electrical Variation								
Nominal Pair Count		Maximum Number of Pairs with Electrical Variation						
up to - 100		1						
101 - 300		2						
301 - 400		3						
401 - 600		4						
601 and above		6						
Variation Values								
Capacitance Unbalance Pair to Ground, pF/km				Individual Maximum	3,280			
DC Conductor Resistance at 20°C, ohms/km				Maximum	2,400	3,000	3,600	4,500
Resistance Unbalance, %				Individual Maximum	7.0			
Far End Crosstalk Loss at 150 kHz, dB/km				Individual	51.8			

POLYETHYLENE INSULATION / PVC SHEATHED CABLE ANNEALED COPPER CONDUCTOR BTS-M-025, BTS-M-026 TPEV-CC, TPUEV-CC

GENERAL

This Specification covers the requirements of copper conductor, polyethylene insulated and polyvinyl chloride sheathed cable, to be used for connecting subscriber equipments inside the building.

TPEV-CC OR TPUEV-CC

CONSTRUCTION :

- Conductor : Solid annealed bare copper wire, 0.40, 0.50, 0.65 and 0.90, (26, 24, 22, 19 AWG) in size.
- Insulation : Color coded solid high density polyethylene.
- Twisted Pairs : The insulated conductors are twisted into pairs with specified color combinations to provide pairs identification.
- Cable Assembly : Cables having 25 pairs and less are assembled in a single group. Cables having more than 25 pairs are assembled in units each being identification by color coded unit binders.

Identification Tape : A tape, indelibly marked with the following details, shall be laid over the cable core or under the outer lapping tape

(nonhygroscopic dielectric material)

a. Manufacturer's Name

b. Year of Manufacture (Duration of two years)

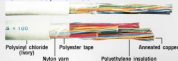
Or the marking shall be printed on the outer lapping tape. The marking shall appear at intervals not more than 50 cm throughout the cable length.

Core Covering : Nonhygroscopic dielectric tape.

Jacket : Polyvinyl chloride Colored Ivory or Grey.

Identification Marker : Manufacturer's name, year and kind & size.

Remark : TPEV(A), TPEV-CC mean cables having 25 pairs or fewer TPUEV (A), TPUEV-CC mean cables having more than 25 pairs and the pairs are assembled in units.



No. of Pairs nominal	Conductor Diameter : 0.40 mm (26 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)
2	5	26	500
3	6	32	500
4	6	36	500
5	6	41	500
6	6	44	500
8	6	52	500
10	7	59	500
12	7	66	500
15	8	77	500
16	8	81	500
20	8	95	500
21	9	99	500
25	9	112	500
26	9	116	500
28	9	124	500
30	10	132	500
40	11	165	500
50	12	197	500
60	12	241	500
75	14	290	500
100	16	374	500
150	19	543	500
200	21	699	500
300	27	1,041	500
400	31	1,373	500
500	34	1,678	500

All cable dimensions and weights are subject to manufacturing tolerances.

No. of Pairs nominal	Conductor Diameter : 0.40 mm (26 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)
2	6	42	500
3	7	53	500
4	7	62	500
5	8	72	500
6	8	81	500
8	9	98	500
10	9	114	500
12	10	131	500
15	10	154	500
16	11	165	500
20	12	198	500
21	12	207	500
25	13	235	500
26	13	240	500
28	14	276	500
30	14	292	500
40	16	373	500
50	18	491	500
60	19	551	500
75	21	669	500
100	24	891	500
150	29	1,272	500
200	34	1,681	500

All cable dimensions and weights are subject to manufacturing tolerances.

No. of Pairs nominal	Conductor Diameter : 0.50 mm (24 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)
2	5	33	500
3	6	40	500
4	6	47	500
5	7	54	500
6	7	59	500
8	7	69	500
10	8	81	500
12	8	92	500
15	9	109	500
16	9	114	500
20	10	136	500
21	10	142	500
25	11	163	500
26	11	169	500
28	11	179	500
30	12	190	500
40	13	233	500
50	15	303	500
60	16	354	500
75	17	429	500
100	20	549	500
150	23	814	500
200	28	1,288	500
300	33	1,599	500

All cable dimensions and weights are subject to manufacturing tolerances.

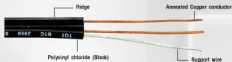
No. of Pairs nominal	Conductor Diameter : 0.50 mm (24 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)
2	7	63	500
3	8	83	500
4	9	101	500
5	9	120	500
6	11	136	500
8	11	163	500
10	12	200	500
12	13	242	500
15	15	291	500
16	15	307	500
20	16	367	500
21	17	387	500
25	18	466	500
26	19	531	500
28	20	607	500
30	21	707	500
40	24	892	500
50	28	1,303	500
60	30	1,714	500

All cable dimensions and weights are subject to manufacturing tolerances.

CONSTRUCTION : TPEV-CC OR TPUEV-CC

Conductor Diameter mm (AWG)	0.40 (26)	0.50 (24)	0.65 (22)	0.90 (19)
1. Mutual Capacitance at Frequency 1000 Hz, Average, nF/km	70			
2. Insulation Resistance, Megohm-km Minimum at Temp. 25°C With DC Potential of 100-500 Volts.	10,000			
3. High Voltage Test (Cond. to Cond.) DC, for 3 sec., Volts.	2,400	3,000	3,600	4,500
4. DC Conductor Resistance, Ohms/km, at 20°C Maximum	144.4	90.2	57.1	28.5
5. Individual Maximum % Resistance imbalance	5.0	5.0	4.0	4.0

PVC INSULATED AND SELF-SUPPORTED TELEPHONE-WIRE BTS-M-030 TJV S-S DROP WIRE



GENERAL

This specification covers the requirements of PVC Insulated copper conductor and steel wire supporting telephon dropwire.

CONSTRUCTION

	CONSTRUCTION	
	S-S DROP WIRE (TWO - CORES)	S-S DROP WIRE (TWO - PAIRS)
Conductor	Solid annealed copper wire, 0.65 mm. and 0.90 mm. (22.19 AWG) in size	Solid annealed copper wire, 0.65 mm. and 0.90 mm. (22.19 AWG) in size
Insulation	Polyvinyl chloride insulation coloured black.	Polyethylene insulation.
1st Pair Insulation	-	White / Blue
2nd Pair Insulation	-	White / Orange
Jacket	-	Polyvinyl chloride coloured black.
Support wire	Support wire shall be of round steel wire and zinc coated Diameter 1.2 ± 0.04 mm.	Support wire shall be of round steel wire and zinc coated Diameter 1.2 ± 0.04 mm.
Assembly	Dropwire shall be integrally of two parallel pvc insulated copper conductors and a pvc sheathed supporting steel wire. One of the insulated conductor shall be ridged for polarity.	

Identification

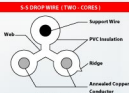


Fig. 1 Cross-Section

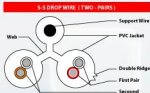


Fig. 2 Cross-Section

Identification Marker : Shall be marked with manufacturer's name or trade mark year of manufacturer size of drop wire.

Conductor Diameter and No. of Core/Pair	Overall Dia. Approx. (mm)	Cable Weight Approx. (mm)	Standard Length (m)
0.65 MM. x 2C	7	42	200
0.90 MM. x 2C	8	52	200
0.65 MM. x 2C	8	58	200
0.90 MM. x 2C	9	80	200

ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS :	
S-S DROP WIRE (TWO - CORES)	S-S DROP WIRE (TWO - PAIRS)
Conductor resistance at temp. 20°C. 0.65 mm. = 57.1 Ohm/km 0.90 mm. = 28.5 Ohm/km	Conductor resistance at temp. 20°C. 0.65 mm. = 57.1 Ohm/km 0.90 mm. = 28.5 Ohm/km
Insulation resistance at temp. 20°C. with DC. potential of 500 Volt. Min = 400 Meg. Ohm/km	Insulation resistance at temp. 20°C. with DC. potential of 500 Volt. Min = 1000 Meg. Ohm/km
Dielectric strength with DC voltage (1 minute) Immersed in water 4 Hrs. (DC) = 4.5 kv.	Dielectric strength with DC voltage (3 seconds) = 1.5 kv.

FOAM/SKIN INSULATION ALPETH SHEATHED, FILLED CABLE BTS-M-014 AP-FSF



GENERAL

This cable is designed for use as a duct cable in either exchange area service or trunk service. The cable is foam-skin Polyethylene insulated, fully color coded, and fully filled with a filling compound to prevent the penetration and migration of water.

CONSTRUCTION

Conductor : Solid annealed copper wire, 0.40, 0.50, 0.65 and 0.90 mm. (26, 24, 22, 19 AWG) in size.

Insulation : Color coded foam/skin high density polyethylene.

Twisted Pairs : The insulated conductors are twisted into pairs with specified color combinations to provide pairs identification.

Cable Assembly : Cables having 25 or fewer pairs : The pairs are assembled in a single group. Cables having more than 25 pairs : The pairs are assembled in units, each unit being identifiable by color coded unit binders.

Identification Tape : A tape, indelibly marked with the following details, shall be laid over the cable core or under the outer lapping tape (nonhygroscopic dielectric material)

a. Manufacturer's Name

b. Year of Manufacture (Duration of two years) Or the marking shall be printed on the outer lapping tape.

The marking shall appear at intervals not more than 50 cm throughout the cable length.

Filling Compound : The interstices between the pairs are filled with a filling compound.

Core covering : Nonhygroscopic dielectric tape.

Shielding : A corrugated polyethylene coated 0.2 mm aluminums tape is applied longitudinally with overlap. The tape is flooded with a flooding compound.

Jacket : High molecular weight, low or medium density polyethylene colored black.

Length Marker : Each length of cable shall be permanently identified as, manufacturer name, year of manufacture, type and size of cable, and sequentially numbered length. The marking shall be printed on the outer jacket. An alternate method of marking may be used if acceptable to the Client.

OPTION AND OTHER CONSTRUCTIONS

cables of other conductor size or having other mutual mutual capacitance than shown in this catalogue are tance than shown in this catalogue are available on request.

No. of Pairs nominal	Conductor Diameter : 0.40 mm (26 AWG)			Conductor Diameter : 0.50 mm (24 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)
10	9	100	1,000	10	87	1,000
15	10	125	1,000	11	94	1,000
25	11	171	1,000	13	131	1,000
50	14	278	1,000	17	388	1,000
100	18	472	1,000	21	680	1,000
200	24	842	1,000	29	1,263	1,000
300	29	1,275	1,000	35	1,834	1,000
400	32	1,579	1,000	39	2,365	500
600	38	2,288	500	47	3,459	500
900	46	3,352	500	56	5,043	500
1,200	53	4,400	500	65	6,679	350
1,500	59	5,411	500	72	8,233	200
1,800	64	6,470	500	78	9,779	200
2,100	69	7,474	500	83	11,317	200
2,400	73	8,473	500	-	-	-
2,700	77	9,467	500	-	-	-
3,000	81	10,460	500	-	-	-

All cable dimensions and weights are subject to manufacturing tolerances. Spare pairs may be included at the manufacturer's discretion.

No. of Pairs nominal	Conductor Diameter : 0.40 mm (26 AWG)			Conductor Diameter : 0.50 mm (24 AWG)		
	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)	Overall Dia. approx. (mm)	Cable Wt. approx. (kg/km)	Standard Length (m)
10	11	172	1,000	15	291	1,000
12	12	194	1,000	16	332	1,000
15	13	226	1,000	17	394	1,000
25	15	330	1,000	21	596	1,000
50	20	574	1,000	28	1,098	1,000
75	23	807	1,000	33	1,563	1,000
100	26	1,034	1,000	38	2,042	500
200	36	1,959	1,000	52	3,880	500
300	43	2,869	500	63	5,743	350
400	49	3,732	500	72	5,707	200
600	59	5,468	350	86	10,990	200
900	71	8,060	200	-	-	-
1,200	81	10,572	200	-	-	-

All cable dimensions and weights are subject to manufacturing tolerances. Spare pairs may be included at the manufacturer's discretion.

ELECTRICAL CHARACTERISTICS

Conductor Diameter mm (AWG)				0.40 (26)	0.50 (24)	0.65 (22)	0.90 (19)	
Mutual Capacitance, Average, nF/km				≤ 25 Pairs				
				52 ± 4				
Mutual Capacitance Deviation, %				> 25 Pairs				
				52 ± 2				
Capacitance Unbalance pF/km	Pair to pair	6 pairs or less	Individual Maximum	181				
		More than 6 pairs	rms, Maximum	45				
	Pair to Ground	All cables	Individual Maximum	2,625				
		6 pairs and larger	Maximum Average	656				
Far End Crosstalk Loss at 150 kHz, dB/km				rms, Maximum				
				67.8				
				Individual Maximum				
				57.8				
Near End Crosstalk Loss M-5 at 772 kHz, dB		Within Unit	13 pairs or less	56				
			18 and 25 pairs	60				
			Adjacent 13 pairs or less	65				
		Between Units	Adjacent 25 pairs	66				
			Non-adjacent	81				
at 150 kHz				10.90	7.52	5.72	3.98	
Attenuation Nominal dB/km at 20°C				at 772 kHz	19.50	15.40	12.40	8.58
Insulation Resistance, MegOhm-km				Minimum				
				16,000				
High Voltage Test dc for 3 sec., Volts				Conductor to Conductor				
				2,000 2,000 3,500 3,500				
				Conductor to Shield				
				5,000 5,000 10,000 10,000				
DC Conductor Resistance, Ohms/km, at 20°C				Maximum				
				144.4 90.2 57.1 28.5				
Resistance Unbalance %				Maximum Average				
				2.0 1.5 1.5 1.5				
				Individual Maximum				
				5.0 5.0 4.0 4.0				
Parameter Variations are Allowed as Follows:								
Maximum Number of Pairs with Electrical Variation								
Nominal Pair Count		Maximum Number of Pairs with Electrical Variation						
up to - 100		1						
101 - 300		2						
301 - 400		3						
401 - 600		4						
601 and above		6						
Variation Values								
Capacitance Unbalance Pair to Ground, pF/km				Individual Maximum				
				5,996				
DC Conductor Resistance at 20°C, ohms/km				Maximum				
				151.6 94.5 60.0 29.9				
Resistance Unbalance, %				Individual Maximum				
				7.0				
Far End Crosstalk Loss at 150 kHz, dB/km				Individual				
				53.8				

EFLEX

EFLEX

EFLEX in Stock in Many Sizes Ranging from 30 to 150 Ready to be Delivered upon Request

The standard dimensions of EFLEX are as shown in the table below. A pilot wire is provided inside EFLEX in the course of its production. It is connected with the cable pilot wire to pull the cable into the pipe. EFLEX is as a rule, shipped from the factory, wound in a coil. A pilot wire has an allowable tensile strength to 50 kg.

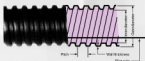


Table of Standard Dimensions

Nominal Diameter (mm)	Outside Diameter approx (mm)	Inner Diameter approx (mm)	Wall Thickness approx (mm)	Pitch approx (mm)	Weight for approx (kg/coil)	Standard Length per coil (mm)	Standard OD and height of coil (mm)
30	40	30	1.40	10	0.23	300	1.40 x 0.55
50	64	50	1.40	17	0.36	200	1.50 x 0.70
80	102	80	1.90	25	0.80	100	1.70 x 0.70
100	130	100	2.00	33	1.10	100	1.90 x 0.80
125	160	125	2.20	39	1.60	100	2.05 x 1.00
150	188	150	2.50	44	2.30	50	1.70 x 1.25

- When purchasing EFLEX, it is recommended to designate EFLEX of which the nominal diameter is more than 1.5 times as large as the outer diameter of cable accommodated in EFLEX.
- Dimensions out of standards are acceptable but requests for longer dimensions cannot always be met because of difficulty in transportation.

PFLEX-CD and Accessories



Low - cost

PFLEX-CD developed for in-concrete installation

PFLEX-CD

PFLEX-CD also is a flexible plastic pipe in conformity with Japanese Industrial Standard (JIS) C8411 and B412 (for 25°C type) and Japan's legal requirement for electrical appliances and materials. It is available in five sizes 14 mm, 16 mm, 22 mm, 28 mm and 36 mm in diameter.

Construction and dimensions

PFLEX-CD is a corrugated hard polyethylene pipe of a single wall structure. It is a flexible CD pipe with corrugations designed for in concrete installation. It has the same distinctive features of PFLEX-CD-FR in flexibility, ease of cable pulling, and corrosion resistance.



Table of Dimensions

Item No.	Nominal Dia. approx (mm)	Outside Dia. A approx (mm)	Inside Dia. B approx (mm)	Wall Thickness approx (mm)	Length per coil approx (mm)	Weight per coil (kg/coil)	Standard OD and height of coil (mm)
PFLEX-CD/CD-FR 14	14	19.00	13.70	0.85	50	4.00	570 x 180
PFLEX-CD/CD-FR 16	16	21.00	15.70	0.95	50	4.35	600 x 180
PFLEX-CD/CD-FR 22	22	27.50	21.00	0.90	50	6.40	680 x 180
PFLEX-CD/CD-FR 28	28	34.00	27.00	1.00	30	5.70	680 x 180
PFLEX-CD/CD-FR 36	36	42.00	34.00	1.00	30	6.60	660 x 255



1. Cut the pipe



2. Loosen the screw of the connector



3. Push the pipe in the direction of insertion



PE SUB-DUCT

PE SUB-DUCT

PE SUB-DUCT shall be made of high molecular weight high-density polyethylene, containing 2% of carbon black circular in cross section. The dimension of PE SUB-DUCT is shown in Table. The dimensions of PE SUB-DUCT shall be measured by the methods shown in Fig.1



Table of Standard Dimensions

Item PE-SUBDUCT size (mm)	Outer Diameter Nominal		Inner Diameter Nominal (mm)	Wall Thickness	
	Standard (mm)	Tolerance (mm)		Nominal (mm)	Tolerance (mm)
Ø 30	31.0	±0.3	26.8	2.1	±0.2
Ø 35	33.0	±0.3	28.0	2.5	±0.3
Ø 35	34.8	±0.3	29.8	2.5	±0.3

Standard Length 600 Meter/Coil

COT TUBE

COT TUBE

COT TUBE for wiring harnesses. Used in automobiles. By JIS (Japanese Industrial Standard) COT TUBE made from high quality PP (Poly Propylene) non-flammable.



Table of Dimensions

Size	With split	A		B		C	
		Inside Diameter	Outside Diameter	Inside Diameter	Outside Diameter	Thickness	
7	Yes	7.4	±0.4	10.2	±0.4	0.27	±0.1
10	Yes	10.7	±0.4	14.1	±0.4	0.27	±0.1
13	Yes	13.2	±0.4	17.5	±0.4	0.27	±0.1
15	Yes	15.2	±0.4	19.5	±0.4	0.27	±0.1
19	Yes	19.5	±0.4	23.8	±0.4	0.27	±0.1
22	Yes	22.1	±0.4	27.0	±0.4	0.36	±0.1



DWP and Accessories

DWP (Double Wall Pipe)

DWP: The corrugated high density polyethylene pipe which provides semi-rigid high strength pipe ideal use for underground telecommunication or electrical installation. DWP is produced in standard of 6 meters length and comes completely with a connector for easy joining.

The two side structure of corrugated outer layer and smooth inner layer get more stiffness for conduit structure. DWP can be used where high crush loads may occur during installations.

A corrugated outer layer and a smooth inner wall



Table of standard Dimensions

Nominal Size (mm)	Outer Diameter approx (mm)	Inner Diameter approx (mm)	Pitch Length approx (mm)	Weight approx (kg/meter)	Standard Length (meter)
125 (ID 100 mm)	125.6	100	14.15	1.08	6
140 (ID 125 mm)	142	125	16.51	1.7	6

Accessories





CONNECTOR	ITEM NO.	APPLICABLE PIPE	DIMENSION (mm)			
	DCN-14	PRLEH-CD/CD-U/CD-FR-14	31	38	11.5	39.5
	DCN-16	PRLEH-CD/CD-U/CD-FR-16	33	38	11.5	41.5
	DCN-22	PRLEH-CD/CD-U/CD-FR-22	41	35	14.5	52.0
	DCN-26	PRLEH-CD/CD-U/CD-FR-26	51	44	15.8	63.0
	DCNB-14	PRLEH-CD/CD-U/CD-FR-14	30	38	11.5	48.5
	DCNB-16	PRLEH-CD/CD-U/CD-FR-16	33	38	11.5	53.5
	DCNB-22	PRLEH-CD/CD-U/CD-FR-22	39	34	14.5	61.0
	DCNB-26	PRLEH-CD/CD-U/CD-FR-26	50	44	15.8	71.5
	DCNB-36	PRLEH-CD/CD-U/CD-FR-36	60	55	15.8	83.0

CONNECTOR	ITEM NO.	APPLICABLE PIPE	DIMENSION (mm)			
	DCN-14	PRLEH-CD/CD-U/CD-FR-14	31	31	22.8	51
	DCN-16	PRLEH-CD/CD-U/CD-FR-16	33	33	25.2	55
	DCN-22	PRLEH-CD/CD-U/CD-FR-22	41	41	35.8	72
	DCN-26	PRLEH-CD/CD-U/CD-FR-26	51	51	40.8	89
	DCNB-14	PRLEH-CD/CD-U/CD-FR-14	30	30	25.2	70
	DCNB-16	PRLEH-CD/CD-U/CD-FR-16	33	33	28.7	80
	DCNB-22	PRLEH-CD/CD-U/CD-FR-22	39	39	38.8	90
	DCNB-26	PRLEH-CD/CD-U/CD-FR-26	50	50	41.3	102
	DCNB-36	PRLEH-CD/CD-U/CD-FR-36	60	60	52.8	136



CONNECTOR	ITEM NO.	APPLICABLE PIPE	DIMENSION (mm)							
	DCN-14	PRLEH-CD/CD-U/CD-FR-14	31	79	96	186	170	43	46	
	DCN-16	PRLEH-CD/CD-U/CD-FR-16	33	79	96	188	170	44	46	
	DCN-22	PRLEH-CD/CD-U/CD-FR-22	41	79	96	187	170	51	46	
	DCN-26	PRLEH-CD/CD-U/CD-FR-26	51	90	76	243	288	64	57	
	DCNB-14	PRLEH-CD/CD-U/CD-FR-14	30	79	96	184	170	45	46	
	DCNB-16	PRLEH-CD/CD-U/CD-FR-16	33	79	96	189	170	48	46	
	DCNB-22	PRLEH-CD/CD-U/CD-FR-22	39	79	96	205	170	53	46	
	DCNB-26	PRLEH-CD/CD-U/CD-FR-26	48	90	76	252	288	67	57	
	DCNB-36	PRLEH-CD/CD-U/CD-FR-36	60	90	76	264	288	81	57	



SHOULDER	ITEM NO.	APPLICABLE PIPE	TAPERED END (mm)				
			A	B	C	D	E
	DCN-16	PRLEH-CD/CD-U/CD-FR-16	13	20.0	18	22.0	4.8
	DCN-22	PRLEH-CD/CD-U/CD-FR-22	14	21.0	20	23.5	4.8
	DCN-26	PRLEH-CD/CD-U/CD-FR-26	14	24.5	20	31.3	4.8
	DCN-36	PRLEH-CD/CD-U/CD-FR-36	16	28.0	22	37.5	4.8

JOINT NUT	ITEM NO.	APPLICABLE PIPE	DIMENSION (mm)		
	DCN-16	PRLEH-CD/CD-U/CD-FR-16	26	26	24
	DCN-22	PRLEH-CD/CD-U/CD-FR-22	31	31	29
	DCN-26	PRLEH-CD/CD-U/CD-FR-26	41	41	30
	DCN-36	PRLEH-CD/CD-U/CD-FR-36	50	50	38



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