



Ruj. Kami : PJ12/UiTM/L/05-10

Tarikh : 19hb Mac 2010

Perunding Juruwas Sdn. Bhd.
No.22A, 1st Floor, Jalan SS 6/8
Kelana Jaya.
47301 Petaling Jaya
Selangor Darul Ehsan.

(U/P: Ir Kharussukur Husai / Ir Ahmad Zainal)

Tuan,

**PER : CADANGAN KERJA-KERJA MENAIKTARAF KABEL 11KV
SEDIAADA DAN JUGA SAMBUNGAN BEKALAN KE PUSAT
KONVENSYEN DAN KEBUDAYAAN UNTUK UNIVERSITI
TEKNOLOGI MARA (UiTM)**

- Permohonan Kelulusan Bahan Bagi '11kV -3 Core x 300sqmm
XLPE/CTS/PE/SWA/PE/Cu. Underground Cable'

Dengan segala hormat nya kami merujuk kepada perkara di atas.

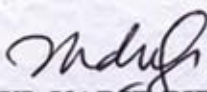
Sukacita kami memaklumkan kepada pihak tuan bahawa di sini kami sertakan maklumat dan spesifikasi kabel bagi sistem 11kV yang akan digunakan untuk kerja-kerja di atas. Di sertakan juga contoh keratan kabel tersebut.

Bagi tujuan tersebut , kami dengan ini ingin memohon jasabaik tuan untuk menimbang dan seterusnya meluluskan permohonan ini agar pihak kami dapat membuat pesanan kepada pengilang dan seterusnya menjalankan kerja-kerja di tapak dengan segera.

Kerjasama dari pihak tuan di dalam menjayakan projek ini amat lah kami hargai

Sekian, terima kasih.

Yang benar,
PTIS ENGINEERING SDN BHD.


ABDUL KADIR BIDIN
Pengarah Projek

sk

1. Timbalan Pengarah Pembangunan
Pejabat Pembangunan
Universiti Teknologi Mara,
40450 Shah Alam ,
Selangor Darul Ehsan.

(U/P : En. Junaidi Muslim)

**XLPE INSULATED POWER CABLES
MS, BS & IEC STANDARDS**



Central Cables Berhad
[7169A]

MAKLUMAT BAHAN LULUS

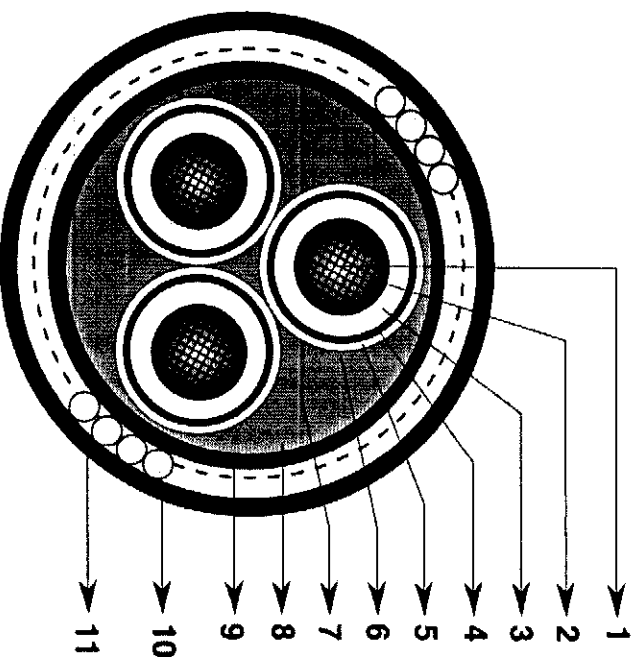
Keterangan : HT CABLE
 Barangan : EE011006
 Kod Barangan : (M26) CENTRAL CABLES BERHAD
 Pengeluar : 7862, BATU BERENDAM P.O. BOX 313
 Alamat : MELAKA
 Bandar : 06-2325821
 No. Telefon : 06-2325823
 No. Fax : (A44) CENTRAL CABLES
 Jenama : NO. SIRIM: PC006705
 Bil laporan : 15 10 2011
 Tarikh Tamat : IEC 60502-2 : 1997 WITH A-1 : 1998
 Rujukan :
 Catatan :
 Negara Pengilang : MALAYSIA

KETERANGAN					
SENARAI BAHAN					
BIL	TYPE	MODEL	RATED VOLTAGE (V)	SIZE (SQ.MM)	NO OF CORE
1	POWER CABLES WITH EXTRUDED SOLID INSULATION. (NON-ARMOURED)	XLPE-INSULATED, PE-SHEATHED, STRANDED COPPER CONDUCTOR CABLE.	6.35/11 kV	16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300, 400 & 500	1
2	POWER CABLES WITH EXTRUDED SOLID INSULATION. (NON-ARMOURED)	XLPE-INSULATED, PE-SHEATHED, STRANDED COPPER CONDUCTOR CABLE.	12.7/22 kV	16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300, 400 & 500	1
3	POWER CABLES WITH EXTRUDED SOLID INSULATION. (NON-ARMOURED)	XLPE-INSULATED, PE-SHEATHED, STRANDED COPPER CONDUCTOR CABLE.	19/33 kV	50, 70, 95, 120, 150, 185, 240, 300, 400, 500 & 630	1
4	EXTRUDED SOLID INSULATION. (ARMOURED)	XLPE-INSULATED, PE-SHEATHED, STRANDED COPPER CONDUCTOR CABLE.	6.35/11 kV	16, 25, 35, 50, 70, 95, 120, 150, 185, 240, 300, 400 & 500	1 & 3
5	EXTRUDED SOLID INSULATION. (ARMOURED)	XLPE-INSULATED, PE-SHEATHED, STRANDED COPPER CONDUCTOR CABLE.	12.7/22 kV	50, 70, 95, 120, 150, 185, 240, 300 & 400	3
6	EXTRUDED SOLID INSULATION. (ARMOURED)	XLPE-INSULATED, PVC-SHEATHED, STRANDED COPPER CONDUCTOR CABLE.	19/33 kV	50, 70, 95, 120, 150, 185, 240, 300 & 400	3

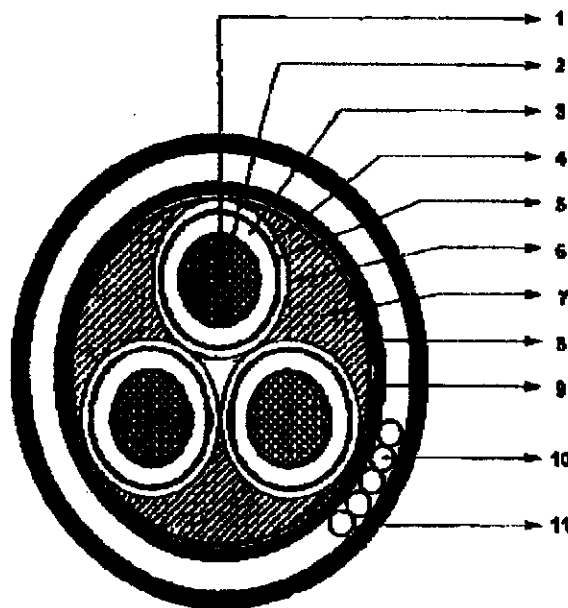
Typical Construction of 3 Core XLPE Power Cable

1	Copper or aluminium wires
2	Extruded semi-conducting compound
3	Cross-linked polyethylene (XLPE)
4	Extruded semi-conducting compound
5	PP tape
6	Plain annealed copper tape
7	Polypropylene yarn
8	Binder tape
9	PE or PVC
10	Galvanized steel wires
11	PE or PVC

USE: for direct burial, in air, in duct, etc. underground installation under the condition of Conductor temperature on Normal (90°C), Emergency (130°C), and short circuit (250°C)



Note: In the above diagram, layers 2, 3 & 4 are done by a triple-extrusion process using Nokia CDCC machine.

**CONSTRUCTION DRAWING**

No.	Description	Material
1	Conductor	Plain Annealed Cu Wires
2	Conductor Screen	Semi-Conductive Compound
3	Insulation	Cross Linked Polyethylene
4	Insulation Screen	Semi-Conductive Compound
5	ID Tape	PP Tape
6	Metallic Screen	Plain Annealed Copper Tape
7	Assembly	Polypropylene Yarn
8	Laid Up Core	Blinder Tape
9	Inner Sheath	PE (ST-7)
10	Armouring	Galvanized Steel Wires
11	Outer Sheath	PE (ST-7)

Drawing not to scale

Design No. : XLPE AR 169-03 (A.S)		Drawn By	Reviewed By	Approved By
Size : 300mm ² X 3C	Ref. Spec. : IEC 60502-2/97			
Type : CU/XLPE/CTS/PE/SWA/PE	Drawing No. : -	SABRINA / 13.11.08	GANCE / 13.11.08	GANCE / 13.11.08
Voltage : 6.35 / 11 (12)kV	Tender No. : -	Name/Signature/Date	Name/Signature/Date	Name/Signature/Date



Central Cables Berhad (Tasek)



7862, Batu Berendam, 75350 Melaka, Malaysia.
T.O. Box 313, 75700 Melaka, Malaysia.
Tel : +60 6 232 5811 Fax : +60 6 232 5823
Email : ccbsales@ccm.my

Your Ref:

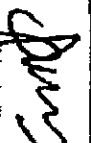
Our Ref:

Date:

MFG / R&D / MKG (B)

Customer	Size	300MM² X 3C
Design No. : XLPE/AR 169-03 (A.S)	TYPE	: CU/XLPE/CTS/PS/W/PE

NO.	DESCRIPTION	UNIT	DETAILS
12	Inner sheath a) Material b) Nominal thickness c) Minimum thickness at any point d) Diameter over inner sheath, approx. e) Colour	mm mm mm mm	PE (SI-7) 1.80 1.43 1.43 70.20 Black
13	Armouring a) Material b) No of wires (approx.) / size c) Diameter over armouring, approx.	No. / mm mm	Galvanized steel w/br 69 / 2.15 76.50
14	Outer sheath a) Material b) Nominal thickness c) Minimum thickness at any point d) Overall diameter, approx. e) Colour f) Termite repellent	mm mm mm	PE (SI-7) 3.60 2.68 83.70 Black -
15	Cable weight, approx.	kg/km	15822
16	Minimum bending radius	mm	1004
17	Electrical data a) Max DC resistance at 20 °C b) AC resistance at 90 °C c) Short resistance d) Short capacitance	D/km D/km D/km µF/km	0.0601 0.0797 0.086 0.36
18	Impulse voltage level	kV	75
19	Short circuit ratings a) Conductor b) Metallic screen c) Armour	kA / 1 sec kA / 3 sec kA / 1 sec kA / 3 sec	42.95 24.80 4.52 2.62 27.72 16.01
20	Maximum conductor temperature	°C	90
21	Current ratings a) In air 40 °C b) In ground at 25 °C c) In duct at 25 °C	A A A	595 535 440
22	Standard packing a) Cable length b) Drum type c) Drum diameter	m mm	250 Timber / Iron 2200 X 1200 X 1100
23	Embedding character on the cable outer sheath		CENTRAL CABLES BHD 300SQMM X 3C 11KV OR OTHERWISE TO BE SPECIFIED

Prepared By	Reviewed By	Approved By
		
SADRINA / 13.11.06	SADRINA / 13.11.06	SADRINA / 13.11.06
Name/Signature/Date	Name/Signature/Date	Name/Signature/Date



Central Cables Berhad (7159-A)



7262, Jalan Bersekutu, 72150 Malak, Malaysia.
P.O. Box 319, 75750 Melaka, Malaysia.
Tel : +60 6 223 5821 Fax : +60 6 223 5823
Email : info@ccberhad.com.my

Your Ref:

Our Ref:

Date:

MAFC / RAD / RS-06 (D)

TECHNICAL PARTICULARS ON MEDIUM VOLTAGE CABLES

Customer		Size		: 300MM ² X 3C	
Drawing No. : XLPE AR 169-03 (A,B)		Type		: CU/XLPE/CTS/PE/S/W/PE	
NO.	DESCRIPTION	UNIT	DETAILS		
1	Cable specification		IEC 60502-2/97		
2	Voltage, U ₀ / U	kV	11		
3	Conductor a) Material b) Number of core c) Nominal area d) No. of strands e) Conductor shape f) Nominal diameter, approx.	mm ² mm	Plain annealed Cu wire 3 300 63 Circular stranded compacted 21.09		
4	Conductive tape a) Material b) Layer & nominal thickness	No. / mm	-		
5	Conductor screen a) Material b) Nominal thickness c) Minimum thickness at any point d) Diameter over conductor screen, approx. e) Colour	mm mm mm mm	Semi-conducting compound - 0.50 22.29 Black		
6	Insulation a) Material b) Nominal thickness c) Minimum thickness at any point d) Diameter over insulation, approx. e) Colour	mm mm mm mm	Cross-linked polyethylene 3.40 2.96 29.09 Natural		
7	Insulation screen a) Material b) Type c) Nominal thickness d) Minimum thickness at any point e) Diameter over insulation screen, approx. f) Colour	mm mm mm mm	Semi-conducting compound Stripable - 0.50 30.29 Black		
8	Core Identification a) Material b) Layer & nominal thickness c) Colour arrangement	No. / mm mm	Colour Strip 1 / 0.05 Red, Yellow, Blue		
9	Metallie screen a) Material b) Layer & nominal thickness c) Diameter over metallie screen, approx. d) Overlap e) Width of each tape	No. / mm mm %	Plain annealed Cu tape 1 / 0.10 30.49 15 30		
10	Cable Lay Up a) Filler b) Material c) Layer & Nominal thickness d) Diameter of laid up core, approx.	No. / mm mm	Polypropylene yarn Binder tape 1 / 0.22 66.60		
11	Radial watertight a) Material b) Nominal thickness	mm mm	-		