

SPEC. NO. P-SDC-2C-6-600V-11

DATE : March 9, 2011

SPECIFICATION
FOR
600 V XLPE INSULATED AND PVC JACKETED FOR SERVICE DROP CABLE

CUSTOMER : PEA

DESIGNED BY

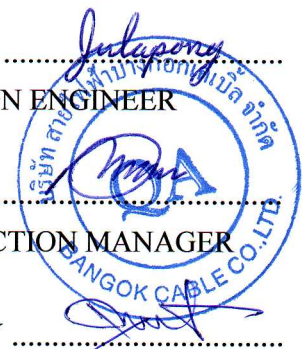
DESIGN ENGINEER

CHECKED BY

DESIGN SECTION MANAGER

APPROVED BY

QUALITY ASSURANCE MANAGER



SHEET 1 OF 6

FMQADN 18 REV : 03

Specification
for
600 V XLPE Insulated and PVC Jacketed for Service Drop Cable

1. Scope

This specification cover 600 V LV two-core cable, with copper conductor, cross-linked polyethylene (XLPE) insulation, and polyvinyl chloride (PVC) jacket, for outdoor installation as service drop cable in open-air on concrete poles.

The cables shall be manufactured and tested to comply with PEA's specification No. RCBL-032/2554 and NEMA WC70/ICEA S-95-658.

2. Conductor

The conductor shall be plain annealed uncoated copper and round concentric lay stranded in accordance with IEC 60228, class 2.

3. Insulation

The insulation of the cable shall be cross-linked polyethylene (XLPE) compound meeting the requirements of NEMA WC70/ICEA S-95-658.

The insulation of two-core conductors shall have one - grey color and one - black color.

Grey insulation shall be unfilled cross-linked polyethylene and black insulation shall be filled cross-linked polyethylene.

The average thickness of insulation shall not be less than the nominal value given in the attached table.

The minimum thickness shall not be less than 90 % of the nominal value given in the attached table.

4. Jacket

The jacket of the cable shall be extruded with black polyvinyl chloride (PVC) compound meeting the requirements of NEMA WC70/ICEA S-95-658 applied cover the insulation of each the conductor which laid adjacently but separate by PVC groove width of $1 \pm \frac{0.5}{0.0}$ mm. and thickness of 2 ± 0.5 mm. to provide for easy tearing. The PVC groove shall be strong enough withstand separation due to bending and sunlight.

The average thickness of jacket shall not be less than the nominal value given in the attached table.

The minimum thickness shall not be less than 80 % of the nominal value given in the attached table.

5. Marking

The surface of jacket shall be marked legibly and durable in Thai language, at the interval of about 50 cm., as follows :

“ การไฟฟ้าส่วนภูมิภาค สายทองแดงเข้ามิตอร์ พิกัดแรงดัน 600 โวลต์ ขนาด 2 x A ตร.มม.,
สัญญาเลขที่ B , C , D , E ”

Where :

A : The nominal cross-sectional area of conductor

B : The purchase contract number

C : Manufacturer's name and/or trade-mark

D : PEA trade-mark



E : Year of manufacture

The cable length markings shall be made on the cable jacket through whole length started from “0000” with 1 meter increment.

For core identification purpose, a white strip shall be made on the surface of jacket along the length on grey color side of cable. The white strip shall be width of 3.0 ± 0.5 mm. (See **Figure 1**)



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6. Test

Test on samples and electrical tests on completed cables shall be made in accordance with NEMA WC70/ICEA S-95-658. Tests shall consist of the following items :

- (1) Conductor tests.
- (2) Test samples and specimens for physical and ageing tests.
- (3) Tests for thermoplastic jackets.
- (4) Electrical tests on completed cables.
 - a) The insulated conductor shall withstand the alternating-current test voltage of 4.5 kV for 5 minutes, unless the direct-current test in b) is performed.
 - b) The insulated conductor shall withstand the direct-current test voltage of 13 kV for 5 minutes, unless the alternating-current test in a) is performed.
- (5) Insulation resistance test.

The insulated conductor shall have an insulation resistance value not less than that corresponding to a constant value of 10,000 at 15.6°C.

7. Packing

A length of the cable shall be packed wound onto a non-returnable wooden reel lagged with hub reels reinforcements. The cable in each reel shall be supplied in production length with variation of $\pm 10\%$. Each reel shall be clearly marked as follows :

- a. Manufacturer's name and/or trade mark.
- b. Rated voltage.
- c. Cable type.
- d. Number of core and size of conductor.
- e. Cable length.
- f. Net and gross weight.
- g. Rolling direction of reel and the position of cable end.
- h. Principal dimensions of reel in cm.
- i. Year of manufacture.
- j. Reel number.
- k. Other according to customer's specify.



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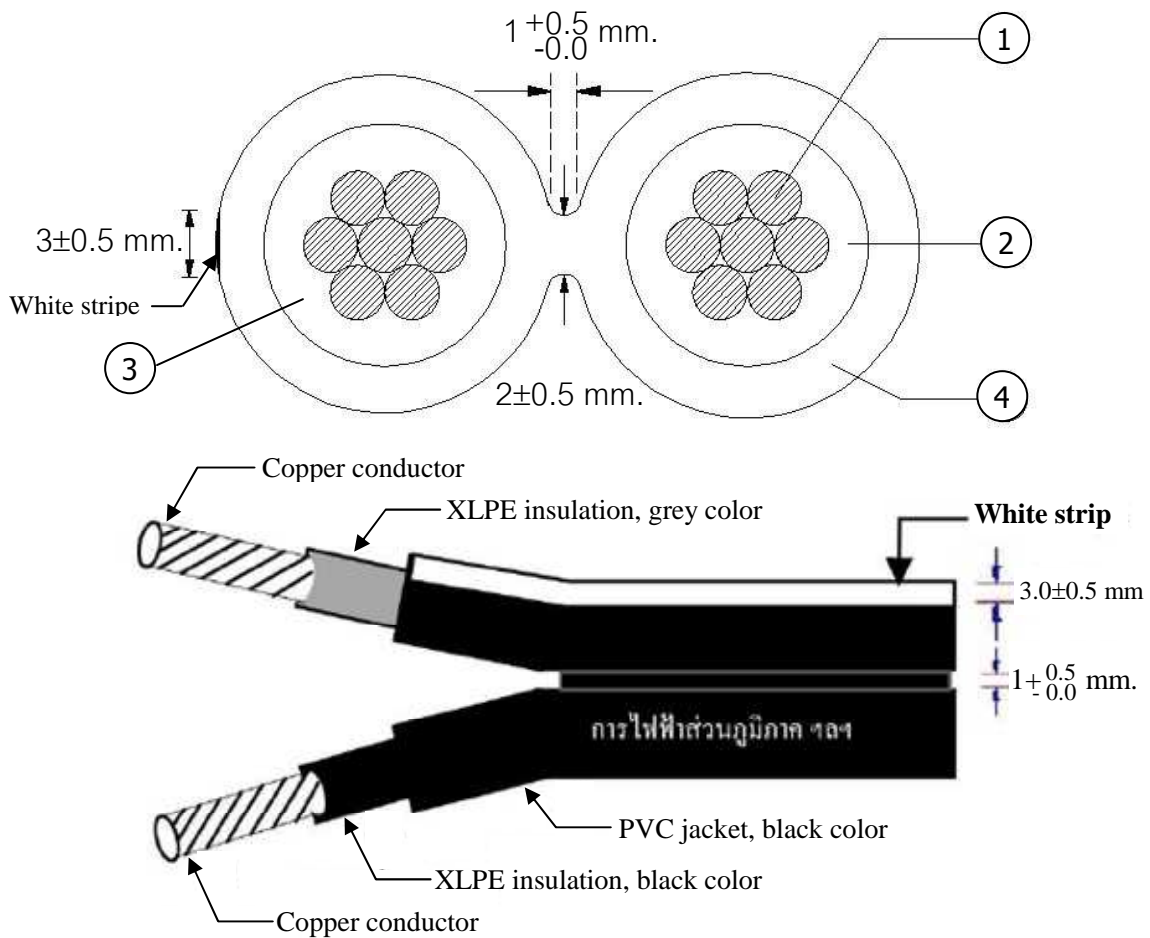
ATTACHED TABLE

Description	Unit	Data
Type of Insulation/Sheath	-	XLPE/PVC
Rated voltage of cable	kV	0.6
Letter-number code according to NEMA/ICEA :	-	S-95-658
Number of core	-	2
Nominal cross-sectional area	mm ²	6
Actual cross-sectional area	mm ²	5.95
Number of wires in conductor	-	7
Diameter of wire, ± 2 %	mm	1.04
Overall diameter of conductor	mm	3.12
Maximum DC resistance of conductor at 20°C	Ω/km	3.08
Weight of conductor	kg/km	109
Average thickness of insulation	mm	0.9
Average thickness of jacket	mm	1.4
Minimum insulation resistance at 15.6°C	MΩ-km	602.9
Outside diameter of cable (Min.)	mm	7.7 x 16.4
(Max.)	mm	9.0 x 19.5
Maximum continuous current rating in open air	A	61
Maximum operating temperature of conductor	°C	90
Weight of cable (Approx.)	kg/km	230
Length of conductor per reel	m	2,000



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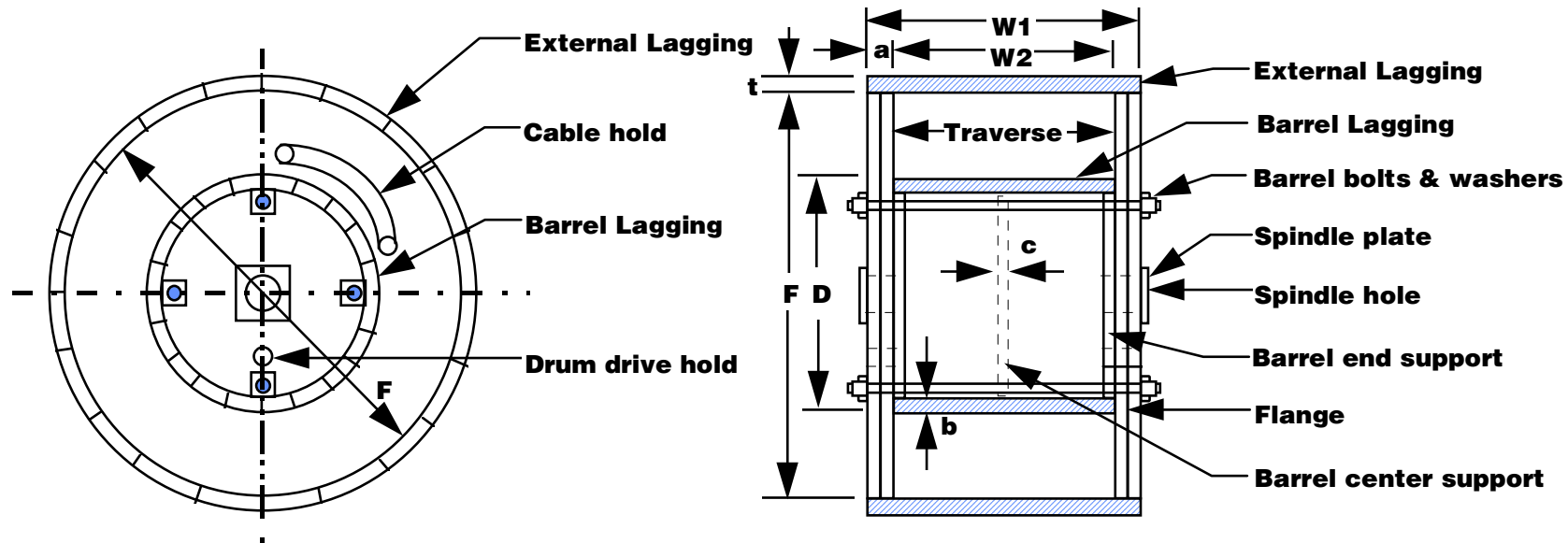
Item No.	Description	Material
1	Conductor	Annealed copper wires
2	Insulation	Black XLPE
3	Insulation	Grey XLPE
4	Jacket	Black PVC

**600 V SERVICE DROP CABLE
CROSS-SECTION (NOT SCALE)**



DRAWN BY : L. Julapong
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PEA Material No.	Products code	Type & Size	Flange diameter F mm	Barrel diameter D (min) mm	Traverse W2 mm	Flange thickness a (min) mm	Barrel lag thickness b (min) mm	External lagging thickness t (min) mm	Spindle hole ϕ (min) mm	Number of barrel bolts (min)	Net weight (Approx.) kg	Gross weight (Approx.) kg	Length per reel m
1020080500	C8B102382011	600 V SERVICE DROP CABLE 2 x 6 mm ²	1,100	500	600	64	25	38	76	6	460	630	2,000



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