

THAI-YAZAKI ELECTRIC WIRE CO., LTD.

TWO PACIFIC PLACE BUILDING

142 Sukhumvit Road, Klongtoey Subdistrict, Klongtoey District, Bangkok 10110 Thailand

Tel. 0-2653-2550 Fax : 0-2653-2613, 0-2653-2614

DATE : January 14, 2015

PRODUCT NAME : FD-0.6/1KV-CV

SPEC. NO. : TYSS 2965 S 01-G/R1

SPECIFICATION FOR

0.6/1(1.2)KV

XLPE Insulated PVC Sheathed

Flame Retardant Power Cable

BY. 

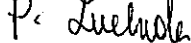
(Somchai Chanthorn)

MANAGER, Cable Design Section

APP. _____

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CUSTOMER

APP. 

(Suchada Padungpien)

MANAGER, Development Department

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1. Scope

This specification covers 1000V copper conductor cross-linked polyethylene (XLPE) insulated polyvinyl chloride (PVC) sheathed flame retardant power cable.

The cable shall be in accordance with IEC 60502-1 : 2004 and Amend.1 : 2009.

The finished cables shall meet the vertical tray flame test requirements per IEC 60332-3-24; Category C.

2. Conductor

For size $\leq 6 \text{ mm}^2$:

The conductor shall be non-compacted concentric stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 2.

The direction of lay shall be left-hand (S) lay.

For size $\geq 10 \text{ mm}^2$:

The conductor shall be compacted concentric stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 2.

The direction of lay shall be left-hand (S) lay in the outermost layer.

3. Insulation

The insulation shall be cross-linked polyethylene (XLPE) compound meet the requirements of IEC 60502-1 : 2004.

The average thickness of the insulation shall be not less than that given in Table 2.

The minimum thickness shall not fall below the value in Table 2 by more than 10 % plus 0.1 mm.

4. Cabling (For multi-cores only)

The individual insulated cores shall be cabled together with suitable filler to give the completed cable a substantially circular cross section.

The direction of lay shall be left-hand (S) lay.

A suitable binder tape shall be applied helically over the cabled core.

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5. Core Identification

The cores shall be identified by color, as follows :

Single-core : white

2-cores : blue, brown

3-cores : brown, black, grey

4-cores : blue, brown, black, grey

5-cores : blue, brown, black, grey, green/yellow

(White color is natural color of XLPE insulation)

6. Sheath

The sheath shall be sunlight resistant and flame retardant polyvinyl chloride (PVC) compound meet the requirements of IEC 60502-1 : 2004, ST2.


The average thickness of the sheath shall not be less than that given in Table 2.

The minimum thickness shall not fall below the value in Table 2 by more than 20% plus 0.2 mm.

The color of the sheath shall be black.

7. Marking on Cable

The marking items shall be marked with suitable means throughout the length of cable.

1. Manufacturer's name and trade mark "  THAI YAZAKI"

2. Year of manufacture

3. Flame retardant "FD"

4. Rated circuit voltage "0.6/1KV"

5. Type of insulation "XLPE"

6. Type of cable "POWER CABLE"

7. Number of cores and size of conductor

8. The continuous reel length marking (in figure) shall be made on the sheath at every 1 meter

(For size $\geq 25 \text{ mm}^2$)

8. Test and Properties

The cable shall be meet the requirements in Table 1 and Table 2, when tested in accordance with IEC 60502-1 : 2004 and Amend.1 : 2009, IEC 60228 : 2004 and IEC 60332-3-24; Category C.

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9. Packing

The cable shall be placed on non-returnable wooden reels.

The reels shall be covered with suitable covering to provide the cable with physical protection during transportation and during ordinary storage and handling operations.

Each reel shall be clearly marked as follows.

1. Designation "FD-0.6/1KV-CV"
2. Number of cores and size of conductor
3. Cable length
4. Gross weight
5. Manufacturer's name and trade mark "  THAI YAZAKI"
6. Rolling direction of reel
7. Other required matters

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Table 1

Routine Test

Maximum conductor resistance, Ohm/km specified in Table 2
 AC test voltage for 5 minutes, kV..... 3.5
 The number of length to be tested shall be decided by agreement between the purchasers (or its representative) and the manufacturer or shall be 10 % of the number of lengths in the contract.

Sample Test

*Construction specified in Table 2
 **Hot set test at 200 °C ± 3 °C for XLPE
 Maximum elongation under load (%)175
 Maximum permanent elongation after cooling (%).....15

*The test shall be made on one length from each manufacturing series of the same size of cable, but shall be limited to not more than 10 % of the number of lengths in the contract, as specified in IEC 60502-1 : 2004.

**The test shall be made on samples taken from cables manufactured for the contract, on the following basis, as specified in IEC 60502-1 : 2004.

Cable Length				Number of samples
Multi-core cables		Single-core cables		
Above (km)	Up to and including (km)	Above (km)	Up to and including (km)	
2	10	4	20	1
10	20	20	40	2
20	30	40	60	3
etc.		etc.		etc.

Type Test

This cable shall be tested as followed :

- Flame retardant tested according to IEC 60332-3-24; Category C.

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Table 2

No. of core	Size (mm ²)	Conductor strands minimum (wire)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Sheath thickness nominal (mm)	Overall diameter approx. (mm)	Conductor resistance at 20°C maximum (Ohm/km)	Weight of cable approx. (kg/km)	Standard packing length (m)
1	1.5	7/0.53	1.59	0.7	1.4	6.3	12.1	50	500
1	2.5	7/0.67	2.01	0.7	1.4	6.8	7.41	65	500
1	4	7/0.85	2.55	0.7	1.4	7.3	4.61	80	500
1	6	7/1.04	3.12	0.7	1.4	7.9	3.08	110	500
1	10	6	3.80	0.7	1.4	8.4	1.83	150	500
1	16	6	4.80	0.7	1.4	9.4	1.15	210	500
1	25	6	6.00	0.9	1.4	11.0	0.727	310	500
1	35	6	7.10	0.9	1.4	12.0	0.524	400	500
1	50	6	8.30	1.0	1.4	13.5	0.387	550	500
1	70	12	9.90	1.1	1.4	15.5	0.268	750	500
1	95	15	11.70	1.1	1.5	17.5	0.193	1000	500
1	120	18	13.20	1.2	1.5	19.0	0.153	1300	500
1	150	18	14.60	1.4	1.6	21	0.124	1500	500
1	185	30	16.30	1.6	1.6	23	0.0991	1900	500
1	240	34	18.70	1.7	1.7	26	0.0754	2500	500
1	300	34	20.90	1.8	1.8	29	0.0601	3100	500
1	400	53	23.50	2.0	1.9	32	0.0470	3900	500
1	500	53	26.70	2.2	2.0	36	0.0366	5000	500
1	630	53	30.30	2.4	2.2	40	0.0283	6500	500
1	800	53	34.10	2.6	2.3	45	0.0221	8000	500
1	1000	53	39.50	2.8	2.4	51	0.0176	10500	300

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Table 2 (continued)

No. of core	Size (mm ²)	Conductor strands minimum (wire)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Sheath thickness nominal (mm)	Overall diameter approx. (mm)	Conductor resistance at 20°C maximum (Ohm/km)	Weight of cable approx. (kg/km)	Standard packing length (m)
2	1.5	7/0.53	1.59	0.7	1.8	11.0	12.1	130	500
2	2.5	7/0.67	2.01	0.7	1.8	12.0	7.41	160	500
2	4	7/0.85	2.55	0.7	1.8	13.0	4.61	200	500
2	6	7/1.04	3.12	0.7	1.8	14.0	3.08	260	500
2	10	6	3.80	0.7	1.8	15.0	1.83	340	500
2	16	6	4.80	0.7	1.8	17.0	1.15	480	500
2	25	6	6.00	0.9	1.8	21	0.727	700	500
2	35	6	7.10	0.9	1.8	23	0.524	900	500
2	50	6	8.30	1.0	1.8	26	0.387	1200	500
2	70	12	9.90	1.1	1.8	29	0.268	1600	500
2	95	15	11.70	1.1	2.0	33	0.193	2200	500
2	120	18	13.20	1.2	2.1	37	0.153	2800	500
2	150	18	14.60	1.4	2.2	41	0.124	3400	500
2	185	30	16.30	1.6	2.3	45	0.0991	4200	500
2	240	34	18.70	1.7	2.5	51	0.0754	5500	500
2	300	34	20.90	1.8	2.7	56	0.0601	7000	500
2	400	53	23.50	2.0	2.9	63	0.0470	8500	500

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Table 2 (continued)

No. of core	Size (mm ²)	Conductor strands minimum (wire)	Conductor diameter approx. (mm.)	Insulation thickness nominal (mm.)	Sheath thickness nominal (mm.)	Overall diameter approx. (mm.)	Conductor resistance at 20°C maximum (Ohm/km)	Weight of cable approx. (kg/km)	Standard packing length (m.)
3	1.5	7/0.53	1.59	0.7	1.8	11.5	12.1	150	500
3	2.5	7/0.67	2.01	0.7	1.8	12.5	7.41	190	500
3	4	7/0.85	2.55	0.7	1.8	13.5	4.61	250	500
3	6	7/1.04	3.12	0.7	1.8	15.0	3.08	320	500
3	10	6	3.80	0.7	1.8	16.0	1.83	450	500
3	16	6	4.80	0.7	1.8	18.0	1.15	650	500
3	25	6	6.00	0.9	1.8	22	0.727	950	500
3	35	6	7.10	0.9	1.8	24	0.524	1300	500
3	50	6	8.30	1.0	1.8	27	0.387	1600	500
3	70	12	9.90	1.1	1.9	31	0.268	2300	500
3	95	15	11.70	1.1	2.0	36	0.193	3100	500
3	120	18	13.20	1.2	2.1	39	0.153	3900	500
3	150	18	14.60	1.4	2.3	44	0.124	4800	500
3	185	30	16.30	1.6	2.4	49	0.0991	6000	500
3	240	34	18.70	1.7	2.6	55	0.0754	8000	500
3	300	34	20.90	1.8	2.8	61	0.0601	9500	300
3	400	53	23.50	2.0	3.1	68	0.0470	12500	300

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Table 2 (continued)

No. of core	Size (mm ²)	Conductor strands minimum (wire)	Conductor diameter approx. (mm.)	Insulation thickness nominal (mm.)	Sheath thickness nominal (mm.)	Overall diameter approx. (mm.)	Conductor resistance at 20°C maximum (Ohm/km)	Weight of cable approx. (kg/km)	Standard packing length (m.)
4	1.5	7/0.53	1.59	0.7	1.8	12.0	12.1	180	500
4	2.5	7/0.67	2.01	0.7	1.8	13.5	7.41	230	500
4	4	7/0.85	2.55	0.7	1.8	14.5	4.61	300	500
4	6	7/1.04	3.12	0.7	1.8	16.0	3.08	400	500
4	10	6	3.80	0.7	1.8	17.5	1.83	550	500
4	16	6	4.80	0.7	1.8	20	1.15	800	500
4	25	6	6.00	0.9	1.8	24	0.727	1200	500
4	35	6	7.10	0.9	1.8	27	0.524	1600	500
4	50	6	8.30	1.0	1.9	30	0.387	2100	500
4	70	12	9.90	1.1	2.0	35	0.268	3000	500
4	95	15	11.70	1.1	2.1	39	0.193	4000	500
4	120	18	13.20	1.2	2.3	44	0.153	5000	500
4	150	18	14.60	1.4	2.4	49	0.124	6500	500
4	185	30	16.30	1.6	2.6	54	0.0991	8000	500
4	240	34	18.70	1.7	2.8	61	0.0754	10000	300
4	300	34	20.90	1.8	3.0	68	0.0601	12500	300
4	400	53	23.50	2.0	3.3	76	0.0470	16000	200

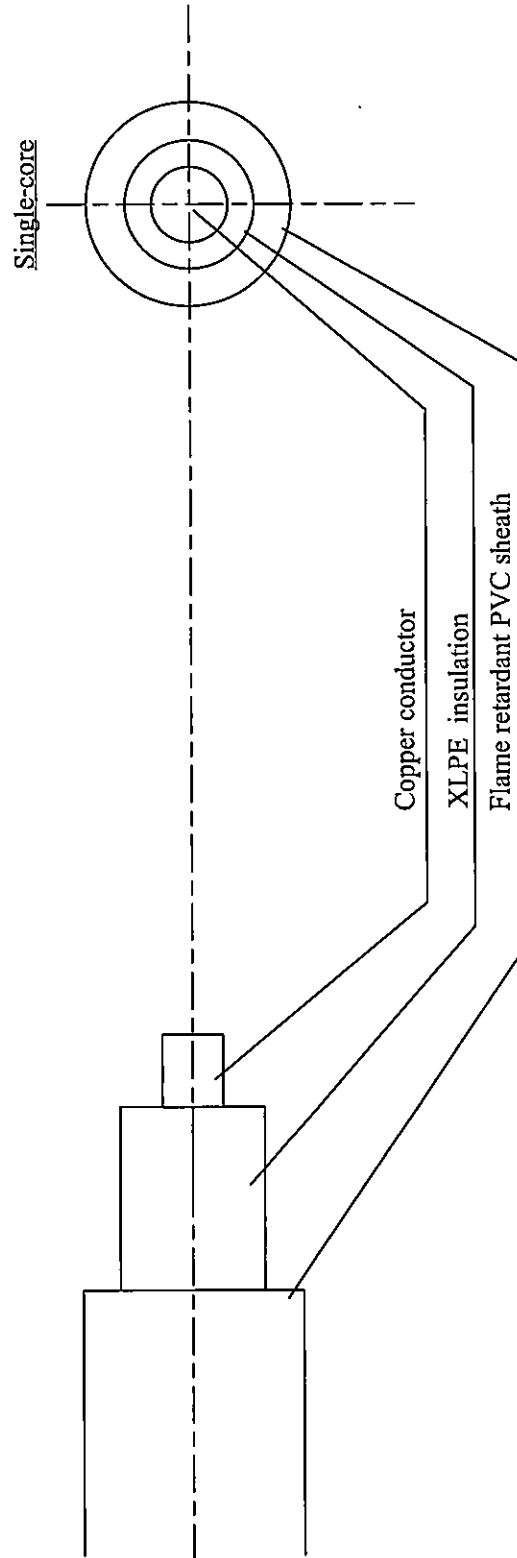
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