



FEDERAL POWER™

## ***PRODUCT CATALOG***



# ***AERIAL CABLES***

PVC Insulated Low Voltage Aerial Cable (Almoe)  
XLPE Insulated Medium &  
High Voltage Aerial Cable

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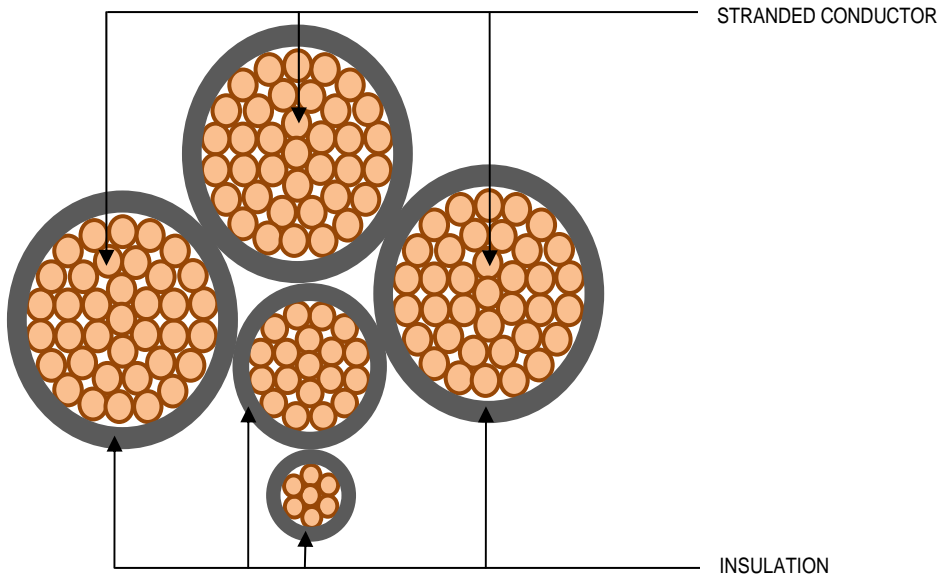
Fax (603) 5512 2730

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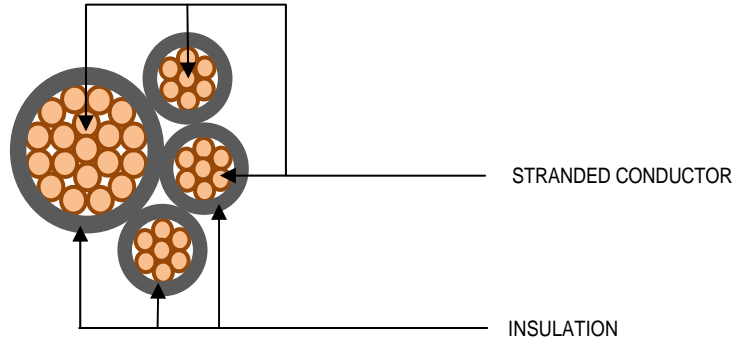
Website: <http://www.federalpower.com.my>

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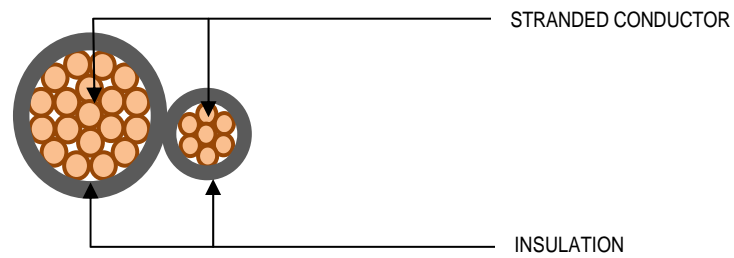
### 5 CORE ALMOE



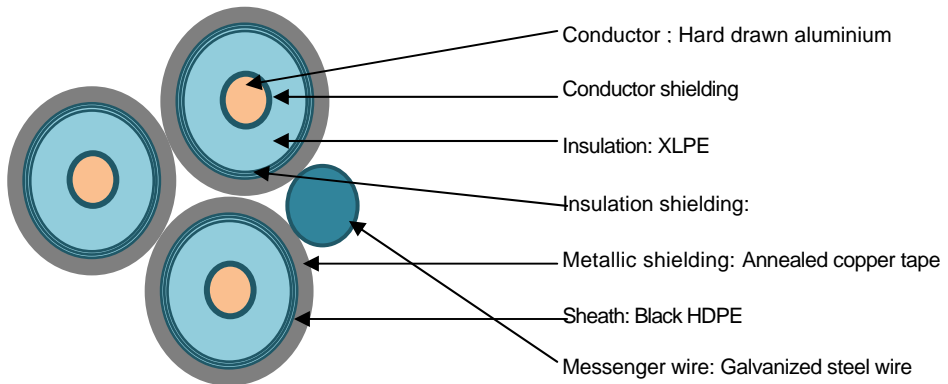
### 4 CORE ALMOE



### 2 CORE ALMOE



### Cross-section of 11kV up to 33kV Al- XLPE/PE Aerial Cable



Insulation Material is Medium Density Polyethylene (MDPE) Max.permissible conductor temperature for MDPE = 70°C			Cable size			
			1C X 16mm <sup>2</sup> +	3C X 16mm <sup>2</sup> +	3C X 95mm <sup>2</sup> +	3C X 185mm <sup>2</sup> +
			1C X 25mm <sup>2</sup>	1C X 25mm <sup>2</sup>	1C X 70mm <sup>2</sup> +	1C X 120mm <sup>2</sup> +
					1C X 16mm <sup>2</sup>	1C X 16mm <sup>2</sup>
<b>Phase Conductor (Aluminium)</b>						
Conductor	Cross-sectional area	mm <sup>2</sup>	16	16	95	185
	No. of strands	pcs	7	7	19	37
	Diameter	mm	4.9±0.5	4.9±0.5	11.6±0.5	16.2±0.5
Nominal Thickness of insulation		mm	1.0	1.0	1.6	2.0
Approx.diameter of phase cable		mm	7.0	7.0	15.1	20.2
Max.DC resistance of conductor at 20°C		Ω/km	1.91	1.91	0.32	0.164
<b>Messenger / Neutral conductor(Alloy)</b>						
Conductor	Cross-sectional area	mm <sup>2</sup>	25	25	70	120
	No. of strands	pcs	7	7	19	19
	Diameter	mm	6.0±0.5	6.0±0.5	10.0±0.5	13.0±0.5
Nominal Thickness of insulation		mm	1.2	1.2	1.4	1.6
Approx.diameter of phase cable		mm	8.40	8.40	13.2	16.4
Max.DC resistance of conductor at 20°C		Ω/km	1.312	1.312	0.469	0.273
Breaking load		kN	6.4	6.4	18	30.8
<b>Lighting Conductor (Aluminium)</b>						
Conductor	Cross-sectional area	mm <sup>2</sup>	*	*	16	16
	No. of strands	pcs	*	*	7	7
	Diameter	mm	*	*	4.9±0.5	4.9±0.5
Nominal Thickness of insulation		mm	*	*	1.0	1.0
Approx.diameter of phase cable		mm	*	*	7.0	7.0
Max.DC resistance of conductor at 20°C		Ω/km	*	*	1.91	1.91
Approx.diameter of cable		mm	12.0	19.5	40.7	54.0
Approx. Overall weight of cable		kg/km	159	290	1300	1630
Cable length per drum		m	1000	1000	500	500

Insulation Material is Crosslinked Polyethylene (XLPE) Max. permissible conductor temperature for XLPE = 90°C		Cable size					
		3C X 50mm <sup>2</sup> +	3C X 70mm <sup>2</sup> +	3C X 90mm <sup>2</sup> +	3C X 150mm <sup>2</sup> +	3C X 240mm <sup>2</sup> +	
		1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	
<b>Phase Conductor</b>							
<b>Conductor</b>	Cross-sectional area	mm <sup>2</sup>	50	70	95	150	240
	No. of strands	pcs	19	19	19	37	37
	Diameter	mm	8.5	10.1	11.4	14.1	18.3
Minimum thickness of conductor screen		mm	0.5	0.5	0.5	0.5	0.5
Nominal thickness of insulation		mm	3.4	3.4	3.4	3.4	3.4
Minimum thickness of insulation screen		mm	0.5	0.5	0.5	0.5	0.5
Nominal thickness of metallic screen		mm	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.
Nominal thickness of outer sheath		mm	2.3	2.3	2.3	2.3	2.3
Approx. diameter of phase cable		mm	24.0	26.0	27.0	30.0	33.7
Max. DC resistance of conductor at 20°C		Ω/km	0.641	0.443	0.32	0.206	0.125
<b>Messenger wire</b>							
<b>Conductor</b>	Cross-sectional area	mm <sup>2</sup>	50	50	50	50	50
	No. of strands	pcs	7	7	7	7	7
	Diameter	mm	9.6	9.6	9.6	9.6	9.6
Modulus of elasticity		kg/mm <sup>2</sup>	17500	17500	17500	17500	17500
Temperature coefficient of expansion /°C			12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>
Minimum breaking load		kN	61.4	61.4	61.4	61.4	61.4
<b>Stranded cable</b>							
Approx. overall diameter of stranded cable		mm	46	48	50	54.1	59.7
Approx. net weight		kg/km	2626	2946	3286	4026	5229
Min. insulation resistance at 20°C		MΩ.km	2200	1900	1700	1500	1200
Test voltage for 5 minutes		kV/5min.	22.2	22.2	22.2	22.2	22.2
A.C conductor resistance at 90°C, 50Hz		Ω/km	0.822	0.586	0.411	0.265	0.162
Reactance at 50Hz		Ω/km	0.111	0.105	0.102	0.094	0.088
Continuous current rating at ambient temp.of 40°C		A	165	205	245	322	442
Max. short circuit current rating for conductor	1.0 sec	kA	4.72	6.61	8.98	14.17	22.68
	3.0 sec	kA	2.73	3.82	5.18	8.18	13.09
Cable length per drum		m	500	500	500	500	500

Insulation Material is Polyethylene (XLPE) Max. permissible conductor temperature for XLPE = 90°C			Cable size					
			3C X 50mm <sup>2</sup> +	3C X 70mm <sup>2</sup> +	3C X 95mm <sup>2</sup> +	3C X 150mm <sup>2</sup> +	3C X 185mm <sup>2</sup> +	3C X 240mm <sup>2</sup> +
			1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>	1C X 50mm <sup>2</sup>
Phase conductor								
Conductor	Cross-sectional area	mm <sup>2</sup>	50	70	95	150	185	240
	No. of strands	pcs	19	19	19	37	37	37
	Diameter	mm	8.5	10.1	11.4	14.1	15.3	18.3
Minimum thickness of conductor screen		mm	0.5	0.5	0.5	0.5	0.5	0.5
Nominal thickness of insulation		mm	8.0	8.0	8.0	8.0	8.0	8.0
Minimum thickness of insulation screen		mm	0.5	0.5	0.5	0.5	0.5	0.5
Nominal thickness of metallic screen		mm	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.	0.1 X 2pcs.
Nominal thickness of outer sheath		mm	2.3	2.3	2.3	2.3	2.3	2.3
Approx. diameter of phase cable		mm	33.8	35.4	36.7	39.4	40.9	43.6
Max. DC resistance of conductor at 20°C		Ω/km	0.641	0.443	0.32	0.206	0.164	0.125
Messenger wire								
Conductor	Cross-sectional area	mm <sup>2</sup>	50	50	50	50	50	50
	No. of strands	pcs	7	7	7	7	7	7
	Diameter	mm	9.6	9.6	9.6	9.6	10.5	9.6
Modulus of elasticity		kg/mm <sup>2</sup>	17500	17500	17500	17500	17500	17500
Temperature coefficient of expansion /°C			12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>	12 X 10 <sup>-6</sup>
Minimum breaking load		kN	61.4	61.4	61.4	61.4	77.5	61.4
Stranded cable								
Approx. overall diameter of stranded cable		mm	46	48	50	54.1	71	59.7
Approx. net weight		kg/km	2626	2946	3286	4026	6498	5229
Min. insulation resistance at 20°C		MΩ.km	2200	1900	1700	1500	2700	1200
Test voltage for 5 minutes		kV/5min.	22.2	22.2	22.2	22.2	66.5	22.2
A.C conductor resistance at 90°C, 50Hz		Ω/km	0.822	0.586	0.411	0.265	0.211	0.162
Reactance at 50Hz		Ω/km	0.111	0.105	0.102	0.094	0.112	0.088
Continuous current rating at ambient temp. of 40°C		A	165	205	245	322	385	442
Max. short circuit current rating for conductor	1.0 sec	kA	4.72	6.61	8.98	14.17	17.48	22.68
	3.0 sec	kA	2.73	3.82	5.18	8.18	10.09	13.09
Cable length per drum		m	500	500	500	500	500	500