

**Conductors-Overhead**

**Cable Description: AAC ANT OVERHEAD CONDUCTOR : WAPDA P-63:2007 : : STRANDING**

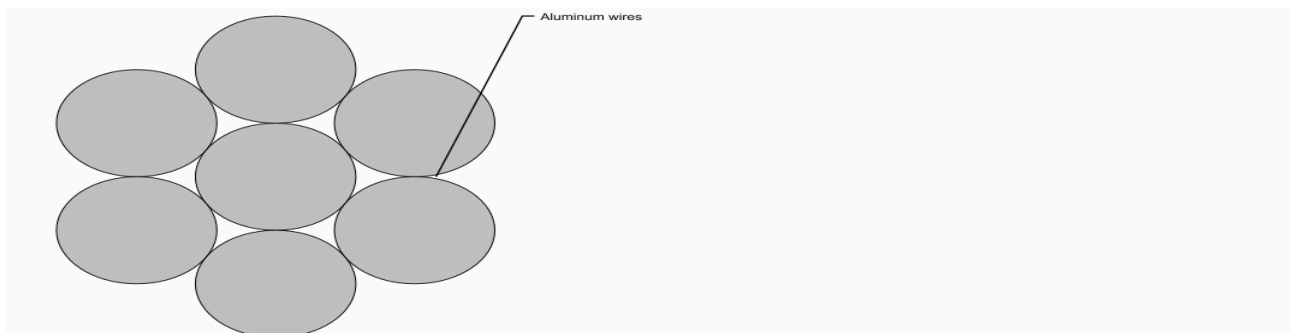
**Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-63:2007
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		AAC ANT
Area of complete conductor	mm <sup>2</sup>	52.83
Conductor Material & Shape		Aluminum & Stranded Class 2
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	7
Diameter of Aluminum wires	mm	3.10
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	16.00
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	52.83
Aluminum weight	Kg/Km	144.4
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	9.30
Ultimate Tensile Strength of Complete Conductor	Kg	847
Total conductor weight	Kg/Km	144.4
Nominal Drum Length	MTR	4300
Nominal copper equivalent	mm <sup>2</sup>	32.23

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.5419
Current carrying Capacity @ 50 °C	Amp	176
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-63:2007

**Cable Drawing**



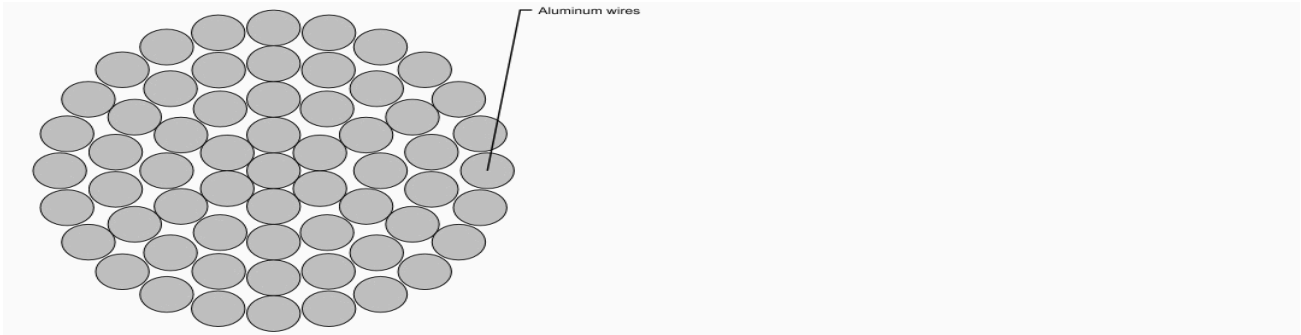
AAC ANT OVERHEAD CONDUCTOR : WAPDA P-63:2007 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Aluminum Size 1/3.10mm	mm	3.10
Layer 2: No. of Wires / Aluminum Size 6/3.10mm	mm	9.30

**Conductors-Overhead****Cable Description: AAC COREOPSIS OVERHEAD CONDUCTOR : WAPDA P-63:2007 : :****STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-63:2007
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		AAC COREOPSIS
Area of complete conductor	mm <sup>2</sup>	809.29
Conductor Material & Shape		Aluminum & Stranded Class 2
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	61
Diameter of Aluminum wires	mm	4.11
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.50
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay Ratio of Layer immediately beneath outside Aluminum layer	Time	10~15
Lay Ratio of Layer immediately over inner most Aluminum layer	Time	10~16
Lay Ratio of Inner most Aluminum layer	Time	10~17
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	809.29
Aluminum weight	Kg/Km	2241
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	36.99
Ultimate Tensile Strength of Complete Conductor	Kg	13670
Total conductor weight	Kg/Km	2241
Nominal Drum Length	MTR	350
Nominal copper equivalent	mm <sup>2</sup>	493.66

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.0356
Current carrying Capacity @ 50 °C	Amp	942
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-63:2007

**Conductors-Overhead****Cable Description: AAC COREOPSIS OVERHEAD CONDUCTOR : WAPDA P-63:2007 : :****STRANDING****Cable Drawing**

AAC COREOPSIS OVERHEAD CONDUCTOR : WAPDA P-63:2007 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Aluminum Size 1/4.11mm	mm	4.11
Layer 2: No. of Wires / Aluminum Size 6/4.11mm	mm	12.33
Layer 3: No. of Wires / Aluminum Size 12/4.11mm	mm	20.55
Layer 4: No. of Wires / Aluminum Size 18/4.11mm	mm	28.77
Layer 5: No. of Wires / Aluminum Size 24/4.11mm	mm	36.99

**Conductors-Overhead****Cable Description: AAC HAWTHORN OVERHEAD CONDUCTOR : WAPDA P-63:2007 : :****STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-63:2007
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		AAC HAWTHORN
Area of complete conductor	mm <sup>2</sup>	603.78
Conductor Material & Shape		Aluminum & Stranded Class 2
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	61
Diameter of Aluminum wires	mm	3.55
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.70
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay Ratio of Layer immediately beneath outside Aluminum layer	Time	10~15
Lay Ratio of Layer immediately over inner most Aluminum layer	Time	10~16
Lay Ratio of Inner most Aluminum layer	Time	10~17
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	603.78
Aluminum weight	Kg/Km	1668.1
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	31.95
Ultimate Tensile Strength of Complete Conductor	Kg	8966
Total conductor weight	Kg/Km	1668.1
Nominal Drum Length	MTR	414
Nominal copper equivalent	mm <sup>2</sup>	368.3

**Electrical Data**

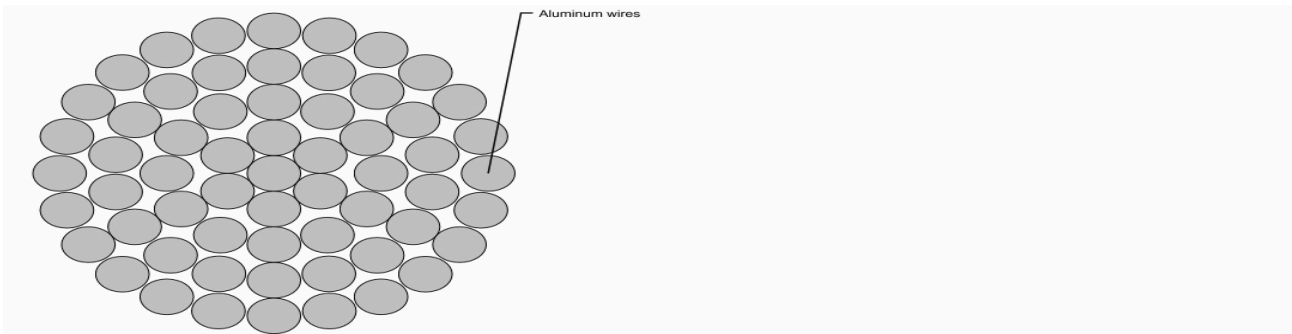
Max Conductor DC resistance @ 20 °C	ohm/km	0.0479
Current carrying Capacity @ 50 °C	Amp	791
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-63:2007

**Conductors-Overhead**

**Cable Description: AAC HAWTHORN OVERHEAD CONDUCTOR : WAPDA P-63:2007 : :**

**STRANDING**

**Cable Drawing**



AAC HAWTHORN OVERHEAD CONDUCTOR : WAPDA P-63:2007 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Aluminum Size 1/3.55mm	mm	3.55
Layer 2: No. of Wires / Aluminum Size 6/3.55mm	mm	10.65
Layer 3: No. of Wires / Aluminum Size 12/3.55mm	mm	17.75
Layer 4: No. of Wires / Aluminum Size 18/3.55mm	mm	24.85
Layer 5: No. of Wires / Aluminum Size 24/3.55mm	mm	31.95

**Conductors-Overhead**

**Cable Description: AAC WASP OVERHEAD CONDUCTOR : WAPDA P-63:2007 : : STRANDING**

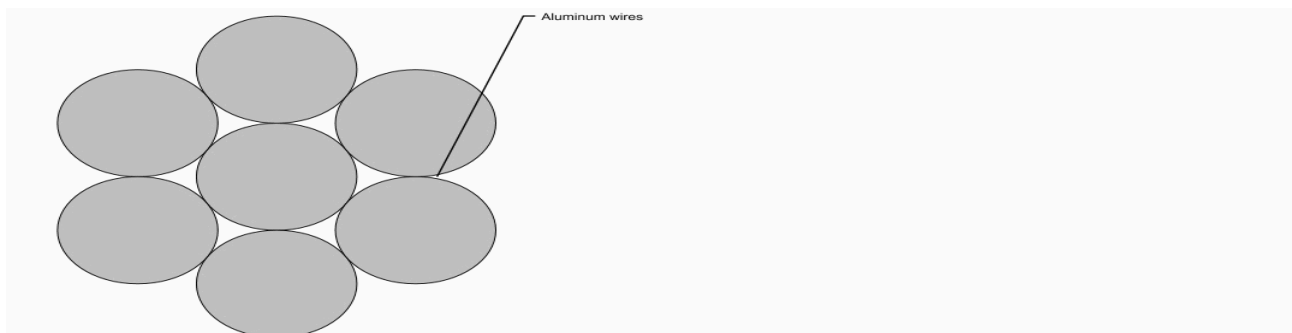
**Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-63:2007
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		AAC WASP
Area of complete conductor	mm <sup>2</sup>	105.95
Conductor Material & Shape		Aluminum & Stranded Class 2
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	7
Diameter of Aluminum wires	mm	4.39
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.40
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	105.95
Aluminum weight	Kg/Km	290.1
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	13.17
Ultimate Tensile Strength of Complete Conductor	Kg	1633
Total conductor weight	Kg/Km	290.1
Nominal Drum Length	MTR	2150
Nominal copper equivalent	mm <sup>2</sup>	64.63

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.2702
Current carrying Capacity @ 50 °C	Amp	272
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-63:2007

**Cable Drawing**



AAC WASP OVERHEAD CONDUCTOR : WAPDA P-63:2007 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Aluminum Size 1/4.39mm	mm	4.39
Layer 2: No. of Wires / Aluminum Size 6/4.39mm	mm	13.17

**Conductors-Overhead****Cable Description: ACSR DOG OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-50:88
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		ACSR DOG
Area of complete conductor	mm <sup>2</sup>	118.53
Conductor Material & Shape		Steel & Aluminum - Stranded Class 2
No. of wires of Steel		7
Diameter of Steel wires	mm	1.57
Minimum Tensile strength of Steel wires Before stranding	Kg/mm <sup>2</sup>	133.6
Minimum Tensile strength of Steel wires After stranding	Kg/mm <sup>2</sup>	126.9
Min. Tensile strength of steel wires at 1 % Extension	Kg/mm <sup>2</sup>	119.5
Minimum Elongation of Steel wire After stranding	%	3.5
Wrapping test of Steel wires		No Cracks
Minimum Mass of zinc coating	g/m <sup>2</sup>	198
Adherence Test of zinc coating		Should be adherent
Lay Ratio of Steel core layer	Time	13~28
Lay direction of Steel core layer		Left Hand
Steel cross section Area	mm <sup>2</sup>	13.55
Approximate Steel core weight	Kg/Km	106.76
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	6
Diameter of Aluminum wires	mm	4.72
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.40
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	104.98
Approximate Aluminum weight	Kg/Km	289.45
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	10.05
Ultimate Tensile Strength of Complete Conductor	Kg	3225
Total conductor weight	Kg/Km	394
Nominal Drum Length	MTR	1600
Nominal copper equivalent	mm <sup>2</sup>	64.04

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.273
Current carrying Capacity @ 50 °C	Amp	275
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-50:88

**Conductors-Overhead**

**Cable Description: ACSR DOG OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING**

**Cable Drawing**



ACSR DOG OVERHEAD CONDUCTOR : WAPDA P-50:88 : : Stranding			Approx. Diameter
Layer 1: No. of Wires / Steel Size	1/1.57mm	mm	1.57
Layer 2: No. of Wires / Steel Size	6/1.57mm	mm	4.71
Layer 3: No. of Wires / Aluminum Size	6/4.72mm	mm	14.15

**Conductors-Overhead****Cable Description: ACSR LYNX OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-50:88
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		ACSR LYNX
Area of complete conductor	mm <sup>2</sup>	226.20
Conductor Material & Shape		Steel & Aluminum - Stranded Class 2
No. of wires of Steel		7
Diameter of Steel wires	mm	2.79
Minimum Tensile strength of Steel wires Before stranding	Kg/mm <sup>2</sup>	133.6
Minimum Tensile strength of Steel wires After stranding	Kg/mm <sup>2</sup>	126.9
Min. Tensile strength of steel wires at 1 % Extension	Kg/mm <sup>2</sup>	116
Minimum Elongation of Steel wire After stranding	%	3.5
Wrapping test of Steel wires		No Cracks
Minimum Mass of zinc coating	g/m <sup>2</sup>	244
Adherence Test of zinc coating		Should be adherent
Lay Ratio of Steel core layer	Time	13~28
Lay direction of Steel core layer		Right Hand
Steel cross section Area	mm <sup>2</sup>	42.80
Approximate Steel core weight	Kg/Km	337.14
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	30
Diameter of Aluminum wires	mm	2.79
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	16.30
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay Ratio of Layer immediately beneath outside Aluminum layer	Time	10~16
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	183.41
Approximate Aluminum weight	Kg/Km	505.67
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	19.53
Ultimate Tensile Strength of Complete Conductor	Kg	8192
Total conductor weight	Kg/Km	842
Nominal Drum Length	MTR	2300
Nominal copper equivalent	mm <sup>2</sup>	111.88

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.158
Current carrying Capacity @ 50 °C	Amp	391
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-50:88

**Conductors-Overhead**

**Cable Description: ACSR LYNX OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING**

**Cable Drawing**



ACSR LYNX OVERHEAD CONDUCTOR : WAPDA P-50:88 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Steel Size	1/2.79mm	2.79
Layer 2: No. of Wires / Steel Size	6/2.79mm	8.37
Layer 3: No. of Wires / Aluminum Size	12/2.79mm	13.95
Layer 4: No. of Wires / Aluminum Size	18/2.79mm	19.53

**Conductors-Overhead****Cable Description: ACSR OSPREY OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-50:88/DD-PD-7/US
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		ACSR OSPREY
Area of complete conductor	mm <sup>2</sup>	297.56
Conductor Material & Shape		Steel & Aluminum - Stranded Class 2
No. of wires of Steel		1
Diameter of Steel wires	mm	4.465
Minimum Tensile strength of Steel wires Before stranding	Kg/mm <sup>2</sup>	133.6
Minimum Tensile strength of Steel wires After stranding	Kg/mm <sup>2</sup>	126.9
Min. Tensile strength of steel wires at 1 % Extension	Kg/mm <sup>2</sup>	112.5
Minimum Elongation of Steel wire After stranding	%	3.5
Wrapping test of Steel wires		No Cracks
Minimum Mass of zinc coating	g/m <sup>2</sup>	275
Adherence Test of zinc coating		Should be adherent
Lay Ratio of Steel core layer		N/R
Lay direction of Steel core layer		N/R
Steel cross section Area	mm <sup>2</sup>	15.66
Approximate Steel core weight	Kg/Km	122.13
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	18
Diameter of Aluminum wires	mm	4.465
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.40
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay Ratio of Layer immediately beneath outside Aluminum layer	Time	10~16
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	281.9
Approximate Aluminum weight	Kg/Km	777.05
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	22.33
Ultimate Tensile Strength of Complete Conductor	KN	60.99
Total conductor weight	Kg/Km	898.8
Nominal Drum Length	MTR	2000
Nominal copper equivalent	mm <sup>2</sup>	171.92

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.102
Current carrying Capacity @ 50 °C	Amp	501
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-50:88/DD-PD-7/US

**Conductors-Overhead**

**Cable Description: ACSR OSPREY OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING**

**Cable Drawing**



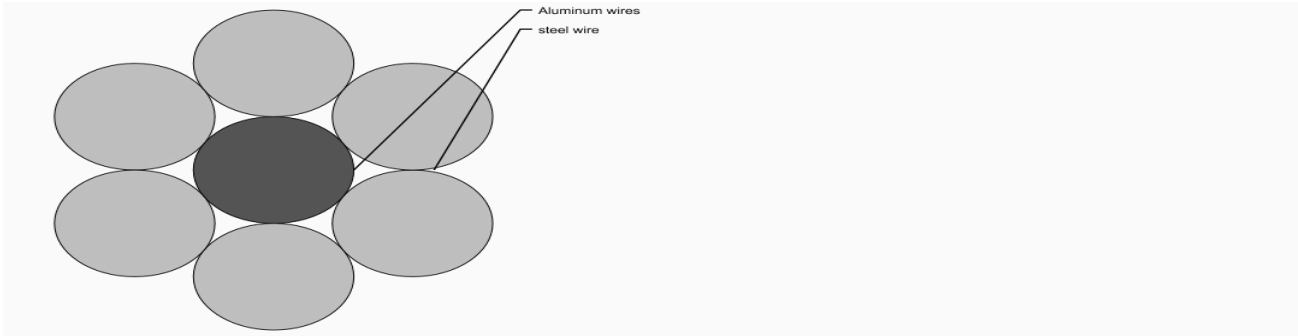
ACSR OSPREY OVERHEAD CONDUCTOR : WAPDA P-50:88 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Steel Size 1/4.465mm	mm	4.465
Layer 2: No. of Wires / Aluminum Size 6/4.465mm	mm	13.40
Layer 3: No. of Wires / Aluminum Size 12/4.465mm	mm	22.33

**Conductors-Overhead****Cable Description: ACSR RABBIT OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-50:88
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		ACSR RABBIT
Area of complete conductor	mm <sup>2</sup>	61.69
Conductor Material & Shape		Steel & Aluminum - Stranded Class 2
No. of wires of Steel		1
Diameter of Steel wires	mm	3.35
Minimum Tensile strength of Steel wires Before stranding	Kg/mm <sup>2</sup>	133.6
Minimum Tensile strength of Steel wires After stranding	Kg/mm <sup>2</sup>	126.9
Min. Tensile strength of steel wires at 1 % Extension	Kg/mm <sup>2</sup>	112.5
Minimum Elongation of Steel wire After stranding	%	3.5
Wrapping test of Steel wires		No Cracks
Minimum Mass of zinc coating	g/m <sup>2</sup>	244
Adherence Test of zinc coating		Should be adherent
Lay Ratio of Steel core layer		N/R
Lay direction of Steel core layer		N/R
Steel cross section Area	mm <sup>2</sup>	8.814
Approximate Steel core weight	Kg/Km	68.75
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	6
Diameter of Aluminum wires	mm	3.35
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.90
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	52.88
Approximate Aluminum weight	Kg/Km	145.81
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	10.05
Ultimate Tensile Strength of Complete Conductor	Kg	1875
Total conductor weight	Kg/Km	214
Nominal Drum Length	MTR	3200
Nominal copper equivalent	mm <sup>2</sup>	32.26

**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.543
Current carrying Capacity @ 50 °C	Amp	179
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-50:88

**Conductors-Overhead****Cable Description: ACSR RABBIT OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING****Cable Drawing**

ACSR RABBIT OVERHEAD CONDUCTOR : WAPDA P-50:88 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Steel Size	1/3.35mm	3.35
Layer 2: No. of Wires / Aluminum Size	6/3.35mm	10.05

**Conductors-Overhead****Cable Description: ACSR RAIL OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING****Design and Construction Data**

Reference Manufacturing Standard		WAPDA P-50:88
Max. Permissible Continuous Conductor Temperature	°C	50
Max. Conductor Temperature	°C	80
Type of Conductor		ACSR RAIL
Area of complete conductor	mm <sup>2</sup>	517.38
Conductor Material & Shape		Steel & Aluminum - Stranded Class 2
No. of wires of Steel		7
Diameter of Steel wires	mm	2.47
Minimum Tensile strength of Steel wires Before stranding	Kg/mm <sup>2</sup>	133.6
Minimum Tensile strength of Steel wires After stranding	Kg/mm <sup>2</sup>	126.9
Min. Tensile strength of steel wires at 1 % Extension	Kg/mm <sup>2</sup>	116
Minimum Elongation of Steel wire After stranding	%	3.5
Wrapping test of Steel wires		No Cracks
Minimum Mass of zinc coating	g/m <sup>2</sup>	229
Adherence Test of zinc coating		Should be adherent
Lay Ratio of Steel core layer	Time	13~28
Lay direction of Steel core layer		Left Hand
Steel cross section Area	mm <sup>2</sup>	33.54
Approximate Steel core weight	Kg/Km	264.24
Max. Resistivity of Aluminum wire at 20 °C	Ωmm <sup>2</sup> /m	0.028264
No. of wires of Aluminum	No	45
Diameter of Aluminum wires	mm	3.70
Minimum Tensile strength of Aluminum After stranding	Kg/mm <sup>2</sup>	15.70
Wrapping test of Aluminum wires		No Cracks
Lay Ratio of Outer most Aluminum layer	Time	10~14
Lay Ratio of Layer immediately beneath outside Aluminum layer	Time	10~16
Lay Ratio of Inner most Aluminum layer	Time	10~17
Lay direction of Outer most layer		Right Hand
Aluminum cross section Area	mm <sup>2</sup>	483.84
Approximate Aluminum weight	Kg/Km	1334
Density of Aluminum at 20 °C	g/cm <sup>3</sup>	2.703
Constant mass Temperature coefficient	/ °C	0.00403
Conductor Diameter	mm	29.61
Ultimate Tensile Strength of Complete Conductor	Kg	11874
Total conductor weight	Kg/Km	1599
Nominal Drum Length	MTR	3200
Nominal copper equivalent	mm <sup>2</sup>	295.15

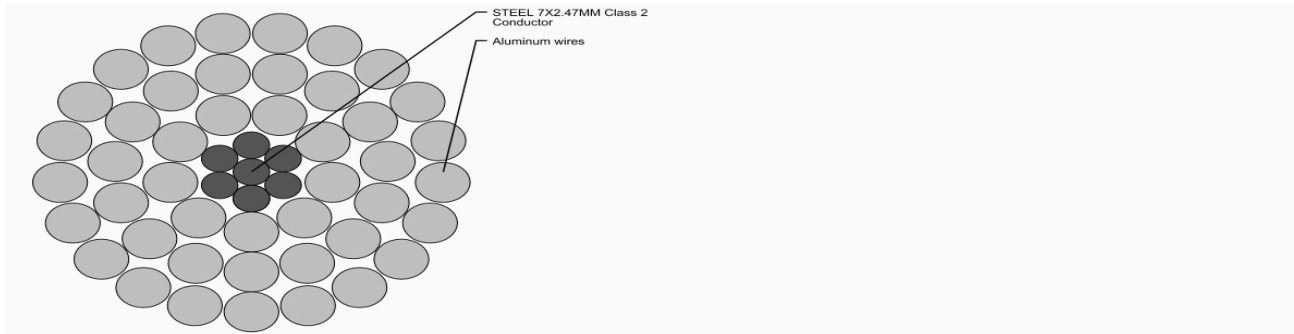
**Electrical Data**

Max Conductor DC resistance @ 20 °C	ohm/km	0.060
Current carrying Capacity @ 50 °C	Amp	698
Wind speed (v)	m/s	0.6
Solar radiation (Si)	W/m <sup>2</sup>	1200
Emmissivity (Ke)		0.5
Solar radiation absorption coefficient (Y)		0.5
The Conductor shall meet all Test requirements		WAPDA P-50:88

**Conductors-Overhead**

**Cable Description: ACSR RAIL OVERHEAD CONDUCTOR : WAPDA P-50:88 : : STRANDING**

**Cable Drawing**



ACSR RAIL OVERHEAD CONDUCTOR : WAPDA P-50:88 : : Stranding		Approx. Diameter
Layer 1: No. of Wires / Steel Size	1/2.47mm	2.47
Layer 2: No. of Wires / Steel Size	6/2.47mm	7.41
Layer 3: No. of Wires / Aluminum Size	9/3.70mm	14.81
Layer 4: No. of Wires / Aluminum Size	15/3.70mm	22.21
Layer 5: No. of Wires / Aluminum Size	21/3.70mm	29.61