

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 Temperatuer	°C	80
Type of Conductor	ACSR OSPREY	
Area of complete conductor	mm ²	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 ²	133.6
Minimum Tensile strength of Steel wires After stranding	Kg/mm ²	126.9
Min. Tensile strength of steel wires at 1 % Extension	Kg/mm ²	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 ²	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 ²	15.66
Approximate Steel core weight	Kg/Km	122.13
Max. Resistivity of Aluminum wire at 20 °C	Ωmm ² /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 ²	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 ²	281.9
Approximate Aluminum weight	Kg/Km	777.05
Density of Aluminum at 20 °C	g/cm ³	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 ²	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 ²	1200
Emmisivity (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	

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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