ACSR

ACSR aluminium 1350 series with galvanized steel reinforcement

GENERAL INFORMATION

The ACSR cables are built with series 1350 pure aluminum wires at H19 hardness twisted helically from 6 or more wires in concentric layers over a wire or cabled galvanized steel core.

FEATURES

- The ACSR steel core cables are built to deliver aluminum conductors with high mechanical tensile capacity allowing long cable spams with minor sag due to high conductor temperatures compared to AAC conductors.
- The overall ACSR conductor diameter is larger since the steel core is not consider in the electrical resistance calculation and only the aluminum will carry the current.
- The cable design will depend on the application, it is identified by the code word and the steel core could be solid or stranded, the aluminum wires could have different diameters and counts in the same gauge.

CERTIFICATIONS AND DESIGN STANDARDS

Standards of design: ASTM B230, ASTM B232, ASTM B502 and ASTM B549

Certifications: CIDET 03540

CABLE DESIGN

Conductor material	Aluminium

INSTALLATION DETAILS

Application	Power Distribution;Power Transmission

PRYSMIAN Central America & Caribbean Kilometer 11 General Cañas Highway. Heredia, Costa Rica Customer Service Hub: + (506) 2298-4800
info.centroamerica@prysmian.com www.prysmian.com

SPECIFIC APPLICATIONS

- The ACSR cables are designed to deliver high mechanical tensile capacity to allow long spams. The conductors are ideal on distribution and transmission power system.
- The high tensile steel cores allow ACSR cables to withstand heavy forces in normal use. The cable is ideal to be installed on high impact risk areas, falling tree branches, heavy rain, ice, snow and severe winds. Also, in areas where the height of the spam is critical.
- The ACSR cables are capable to operate at higher temperatures showing less thermal stretch compared to AAC cables.
- The ACSR steel core can be affected by severe environmental conditions, the aluminum wires build alumina for protection; the steel requires the galvanized shield that is limited when exposed to salty, acid and hi humidity conditions reducing the life of the conductor.

PRODUCT CHARACTERISTICS

External code	Nominal cross section conductor AWG [kcmil]	Conductor strand count	Cable weight [kg/km]	Diameter conductor [mm]	Max. tensile strength [N]	Conductor resistance at 20° C [Ohm/km]
Turkey	6		53.53	5.4	5,191	2.1
Swan	4		86	6.36	8,280	1.32
Sparrow	2		137	8.01	12,684	0.83
Raven	1/0		218	10.1	19,492	0.52
Quail	2/0		275	11.35	23,583	0.41
Pigeon	3/0		347	12.74	29,459	0.32
Penguin	4/0		437	14.3	37,160	0.26
Waxwing	266.8		435	15.45	30,705	0.21
Merlin	336.4		548	17.36	38,710	0.17
Chickadee	397.5		648	18.87	44,057	0.14
Pelican	477		777	20.67	52,503	0.12
Osprey	556.5		907	22.33	60,959	0.1
Brant	397.5		784	19.61	64,962	0.19
Flicker	477		941	21.48	76,538	0.12
Parakeet	556.5		1,097	23.21	88,104	0.14
Peacock	605		1,193	24.2	96,118	0.13
Cuckoo	795		1,568	27.74	124,146	0.09
Partridge	266.8		562	16.29	50,286	0.31
Linnet	336.4		709	18.29	62,744	0.25
Ibis	397.5		838	19.89	72,535	0.21
Hawk	477		1,005	21.78	86,769	0.17
Dove	556.5		1,072	23.53	100,562	0.15

The conductor operating amperage is defined by the installation condition and operating temperatures identified. See Table 4 on Ampacities for Aluminum & ACSR Overhead Electrical Conductors issued by the Aluminum Association. Note: The values given may vary according to the manufacturing tolerances.

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WIRE DISTRIBUTION

Code	Numbers of wires	
	Aluminum	Steel
Swan	6	1
Sparrow	6	1
Raven	6	1
Quail	6	1
Pigeon	6	1
Penguin	6	1
Waxwing	18	1
Merlin	18	1
Chickadee	18	1
Pelican	18	1
Osprey	18	1
Brant	24	7
Flicker	24	7
Parakeet	24	7
Peacock	24	7
Cuckoo	24	7
Partridge	26	7
Linnet	26	7
Ibis	26	7
Hawk	26	7
Dove	26	7

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