

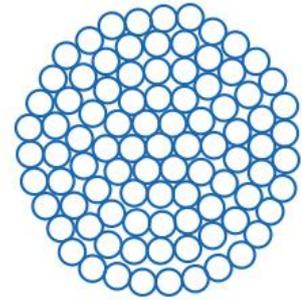
STER – AAAC™

AAAC (All Aluminium Alloy Conductors)-Several layers of aluminium alloy (generally Al-Mg-Si) stranded in concentric layers. Designed using a high strength aluminium – Magnesium- Silicon Alloy to achieve a high strength-to-weight ratio; affords excellent sag-tension characteristics, and superior corrosion resistance when compared with ACSR.

As compared to a conventional ACSR conductor, the lighter weight, comparable strength & current carrying capacity, lower electrical losses and superior corrosion resistance have given AAAC a wide acceptance in the distribution and medium & high voltage transmission lines.

APPLICATION

All Aluminium Alloy Conductors (AAAC) are extensively used for primary and secondary transmission in bare overhead distribution and transmission lines (11 kV to 800 kV lines) and HV substations. Also, usable in highly polluted industrial areas and coastal regions due to corrosion resistance.



ADVANTAGES

AAAC has good corrosion resistance, however due to the absence of steel, its resistance is lower than ACSR. AAAC can carry 15-20% extra current and has a higher life span (60 years) as compared to ACSR of equal size (30 years). The surface hardness of AAAC is 80 BHN while ACSR has hardness 35 BHN. This reduces damage to the surface during handling, thereby leading to lesser corona losses and radio interference at EHV. AAAC can be operated with stable temperature of 85°C against ACSR conductors which are stable upto 75°C. Since AAAC has higher strength-to-weight ratio, span can be increased by 2-15% resulting in overall reduction of cost in tower supports and other accessories in the transmission line system.

MANUFACTURING CAPABILITY

SR.NO	DESCRIPTION	RANGE	
01	Conductor Area	10.6mm ² to 1095mm ²	0.0164 in ² 1.6973 in ²
02	Conductor construction	7Al Alloy to 91 Al Alloy	
03	Conductivity of Al Alloy	52.5% to 57.5% (AL2 to AL7)	

PHYSICAL PROPERTIES

At a temperature of 20°C (68°F), the density of hard-drawn aluminium has been taken as 2.703 g/cm³ (168.74 lb/cf).

SR. NO.	CONDUCTOR CONSTRUCTION	MODULUS OF MPA	ELASTICITY* KSI	LINEAR COEFFICIENT*	
				/°C	/°F
01	7 Strands	62000	8992	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
02	19 Strands	60000	8702	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶

03	37 Strands	57000	8267	23.0×10^{-6}	12.8×10^{-6}
04	61 Strands	55000	7977	23.0×10^{-6}	12.8×10^{-6}

SR. NO.	DESCRIPTION	RANGE	
01	Permissible Temp in continuous operation	85°C	185°F
02	Temp in a short circuit (duration up to 5 s)	200°C	392°F

Note: The Catalogue conductor Parameter are informative and can be customized as per Project Requirements.

STANDARDS

IEC, BS, ASTM, CAN-CSA, DIN, IS, AS and relevant national and international standards.

Non-Specular (NS) Dull Finish Conductor can be available on special requirement.

Disclaimer:

** Parameters mentioned in the document are indicative and can vary subject to different standards*

** Customizations are available on select products. Please indicate your interest by reaching out to the sales team*

Contacts us for more details:

Saurabh Mahajan, VP Exports & Sales (saurabh.mahajan1@sterlite.com)

Amit Charan, VP, Sales and BD (amit.charan@sterlite.com)