

STER-ACSR™

Aluminium Conductors Steel Reinforced (ACSR), also known as Bare aluminium conductors, are one of the most widely used conductors for transmission. The conductor consists of one or more layers of aluminium wires stranded over a high strength steel core that can be single or multiple strands depending on the requirement. There can be various stranding combinations of Al and steel wires lending flexibility to obtain suitable current carrying capacity and mechanical strength for the application.

APPLICATION

Overhead T&D lines-MV, HV & EHV (11 kV to 800 kV Lines).

ADVANTAGES

Its low weight combined with high tensile strength allows larger span runs. Electrical losses by corona effect are greatly reduced, due to the larger diameter size. Economical transmission and distribution of electrical energy can be achieved by ACSR, at very high voltages and distances.

MANUFACTURING CAPABILITY

SR. NO.	DESCRIPTION	RANGE	
01	Conductor Area	10.6 mm ² to 1393 mm ²	0.0164 in ² to 2.1592 in ²
02	Conductor construction	6A/ 1 Steel to 84Al/19 Steel	
03	Conductivity of Aluminium	61%	

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) and for steel wire 7.78 g/cm³ (485.69 lb/cf).

SR. NO.	CONDUCTOR CONSTRUCTION	MODULUS OF ELASTICITY*		LINEAR COEFFICIENT*	
		MPA	KSI	/°C	/°F
01	6Al/1Steel	81000	11748	19.2 X 10 ⁻⁶	10.7 X 10 ⁻⁶
02	6Al/7Steel	75000	10878	19.8 X 10 ⁻⁶	11.0 X 10 ⁻⁶
03	12Al/7Steel	107000	15519	15.3 X 10 ⁻⁶	8.5 X 10 ⁻⁶
04	18Al/1Steel	66000	9572	21.2 X 10 ⁻⁶	11.8 X 10 ⁻⁶
05	24Al/7Steel	74000	10733	19.4 X 10 ⁻⁶	10.8 X 10 ⁻⁶
06	26Al/7Steel	77000	11168	18.9 X 10 ⁻⁶	10.5 X 10 ⁻⁶
07	30Al/7Steel	82000	11893	17.8 X 10 ⁻⁶	9.9 X 10 ⁻⁶
08	26Al/19Steel	76000	11023	19.0 X 10 ⁻⁶	10.5 X 10 ⁻⁶
09	30Al/19Steel	81000	11748	17.9 X 10 ⁻⁶	9.9 X 10 ⁻⁶
10	42Al/1Steel	60000	8702	21.2 X 10 ⁻⁶	11.8 X 10 ⁻⁶

SR. NO.	CONDUCTOR CONSTRUCTION	MODULUS OF ELASTICITY*		LINEAR COEFFICIENT*	
		MPA	KSI	/°C	/°F
11	45Al/7Steel	61000	8847	20.9 X 10 ⁻⁶	11.6 X 10 ⁻⁶
12	48Al/7Steel	62000	8992	20.5 X 10 ⁻⁶	11.4 X 10 ⁻⁶
13	54Al/7Steel	70000	10153	19.3 X 10 ⁻⁶	10.7 X 10 ⁻⁶
14	54Al/19Steel	68000	9863	19.4 X 10 ⁻⁶	10.8 X 10 ⁻⁶
15	84Al/7Steel	65000	9427	20.1 X 10 ⁻⁶	11.1 X 10 ⁻⁶
16	84Al/19Steel	64000	9282	20.0 X 10 ⁻⁶	11.1 X 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

STANDARDS

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