Sterlite

AL59

CONDUCTOR CATALOGUE

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AL59 LAPWING

OVERVIEW

AL-59 Lapwing is a high-capacity, corrosion-resistant aluminum conductor designed for low to ultra-high voltage transmission, minimizing losses and ideal for coastal environments.

APPLICATIONS

Best suitable for ±800kV HVDC line

Medium, High and Extra High Voltage Transmission Lines

FEATURES & BENEFITS

Corrosion Resistant

Higher corrosion resistance than ACSR and AAAC 6201 alloy conductors

Superior Conductivity

Excellent sag-tension performance with lighter weight than conventional ACSR

Cost-Effective Operation

Lower ohmic losses reduce overall operating costs over time

Low Resistivity

Substantially lower resistivity minimizes IR^2 losses during transmission

High Current Capacity

Upto 30% more current than equivalent-size ACSR conductors

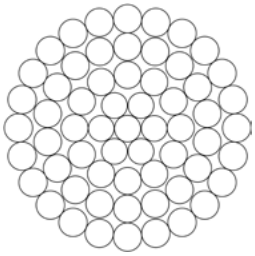
Temperature Limitation

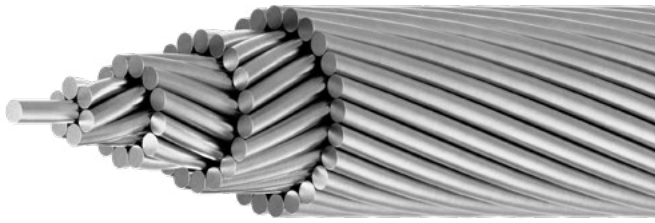
Maximum operating temperature of 95°C limits prolonged high-heat usage

Limited Flexibility

Installation in tight or complex spaces can be challenging

CROSS SECTION





APPLICABLE STANDARDS

SS 424 08 14 · SS 424 08 13

IS 398 P-VI Standards

TECHNICAL SPECIFICATIONS

Conductor	AL-59 LAPWING (1644 Kcmil)	
Total Sectional Area	833.2 mm^2	1.2914 in^2
Aluminum sectional area	41.8 mm^2	1.2914 in^2
Construction/Stranding details		
No.of Aluminum wire & diameter	61 Nos. x 4.17mm	61 Nos. x 0.1642 in.
Overall diameter	37.53 mm	1.4776 in.
Weight	2.299 kg/m	1.5450 lb/ft
Rated strength	182.1 kN	40938 lbs
DC Resistance @ 20°C	0.0356 Ω/Km	0.0573 Ω/mile
Current Capacity @ 75°C (167°F)	780 A	
Current Capacity @ 85°C (185°F)	1015 A	
Current Capacity @ 95°C (203°F)	1200 A	
Max. Operating Temperature	95°C	203°F
Direction of lay	Right hand	
Coefficient of thermal expansion	23.0 × 10^{-6}/°C	12.78 × 10^{-6}/°F
Final modulus of elasticity	55 Gpa	7977 ksi

Note: Current capacity based on referenced conductor temp., 0.56 m/s (1.84 ft/s) wind, 0 m (0 ft) Elevation, 0.45 emissivity, 0.80 absorptivity, 45°C (113 F) Ambient temp., 1045 W/m^2 (97.08 w/ft2) solar radiation.

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AL59 ZEBRA

OVERVIEW

AL-59 Zebra is a high-capacity, corrosion-resistant aluminum conductor for low to ultra-high voltage transmission, offering low losses and ideal for coastal installations.

APPLICATIONS

Renewable Energy Transmission

Medium, High and Extra High Voltage Transmission Lines

FEATURES & BENEFITS

Corrosion Resistant

Higher corrosion resistance than ACSR and AAAC 6201 alloy conductors

Superior Conductivity

Excellent sag-tension performance with lighter weight than conventional ACSR

Cost-Effective Operation

Lower ohmic losses reduce overall operating costs

Low Resistivity

Substantially lower resistivity minimizes IR^2 losses during transmission

High Current Capacity

Upto 30% more current than equivalent-size ACSR conductors

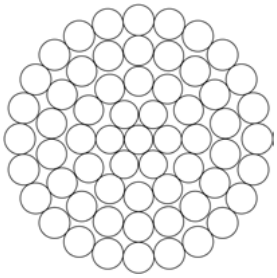
Temperature Limitation

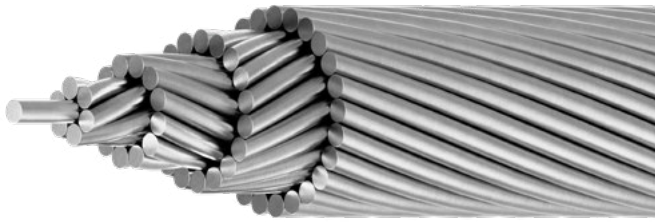
Maximum operating temperature 95°C (203°F) restricts prolonged high-heat use

Sags at High Temperature

Vertical sag increases slightly at maximum operating temperature.

CROSS SECTION





APPLICABLE STANDARDS

SS 424 08 14 · SS 424 08 13

IS 398 P-VI Standards

TECHNICAL SPECIFICATIONS

Conductor	AL59 ZEBRA (897 kcmil)	
Total Sectional Area	454.5 mm^2	0.7044 in^2
Aluminum sectional area	454.5 mm^2	0.7044 in^2
Construction/Stranding details		
No.of Aluminum wire & diameter	61 Nos. x 3.08 mm	61 Nos. x 0.1213 in.
Overall diameter	27.72 mm	1.0913 in.
Weight	1.254 kg/m	0.8427 lb/ft
Rated strength	108 kN	24279 lbs
DC Resistance @ 20°C	0.0653 Ω/Km	0.1051 Ω/mile
Current Capacity @ 75°C (167°F)	567 A	
Current Capacity @ 85°C (185°F)	719 A	
Current Capacity @ 95°C (203°F)	839 A	
Max. Operating Temperature	95°C	203°F
Direction of lay	Right hand	
Coefficient of thermal expansion	23.0 × 10^{-6} /°C	12.78 × 10^{-6} /°F
Final modulus of elasticity	55 Gpa	7977 ksi

Note: Current capacity based on referenced conductor temp., 0.56 m/s (1.84 ft/s) wind, 0 m (0 ft) Elevation, 0.45 emissivity, 0.80 absorptivity, 45°C (113 F) Ambient temp., 1045 W/m^2 (97.08 w/ft2) solar radiation.

Sterlite

Corporate Office

5th Floor, RMZ Infinity, Plot No. 15,
Udyog Vihar – IV, Gurugram - 122015,
Haryana, India

Manufacturing Units

Haridwar
Sector-5, Vardhman Industrial Estate,
Behind Patanjali Yogpeeth, Haridwar, Uttarakhand 249 405

Jharsuguda
At-Bhurkhamunda, PO - Kalimandir Road,
District - Jharsuguda, Odisha 768 202

Piparia
Survey NO.209, Phase -II, Piparia, Piparia
Industrial Estate, Silvassa, Maharashtra 396 230

Rakholi
Survey NO.99/2/22, & 23, Rakholi, Madhuban Dam
Road Rakholi, Silvassa, Maharashtra 396 230

For any queries or suggestions

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