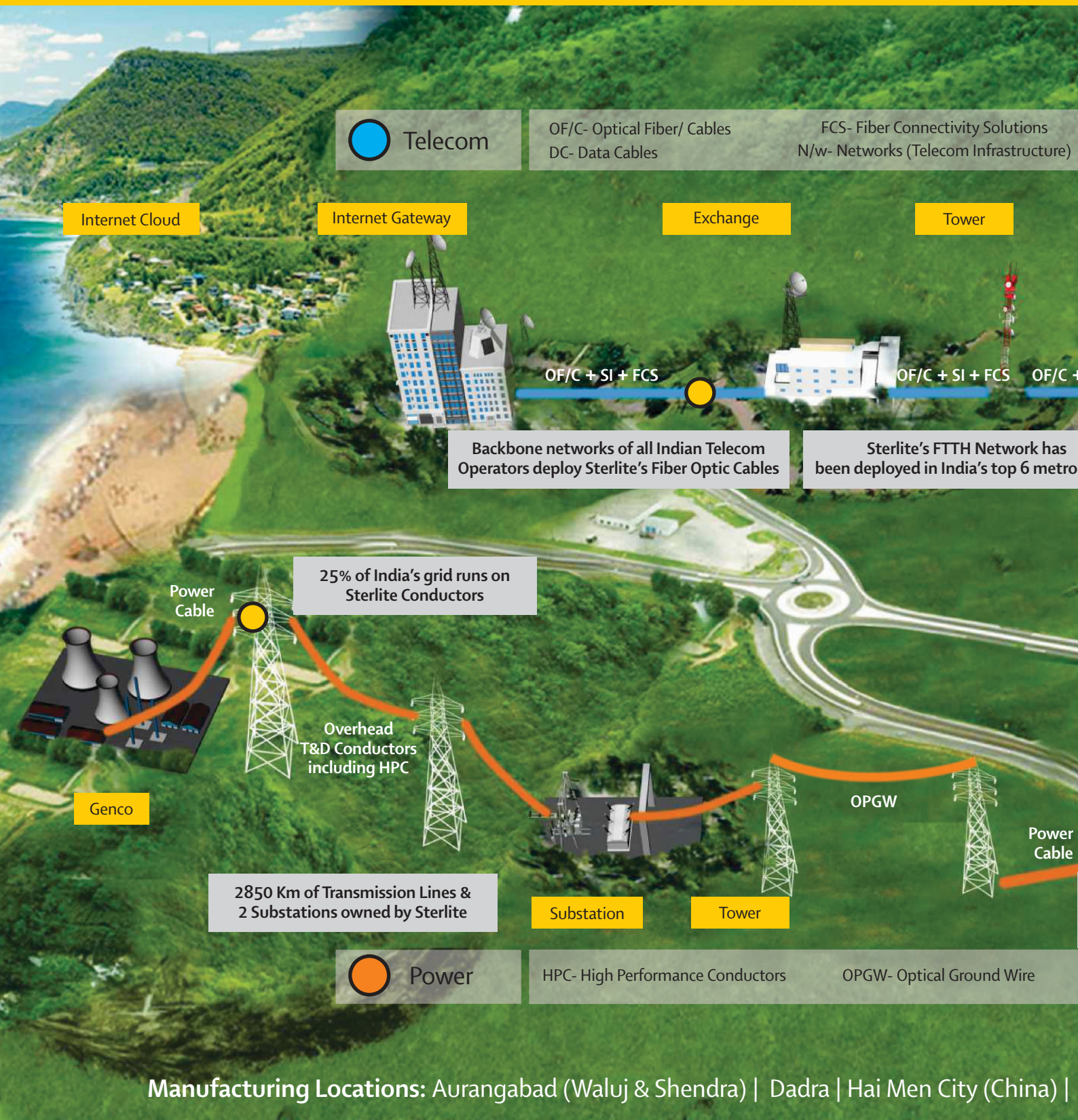




Overhead Transmission & Distribution

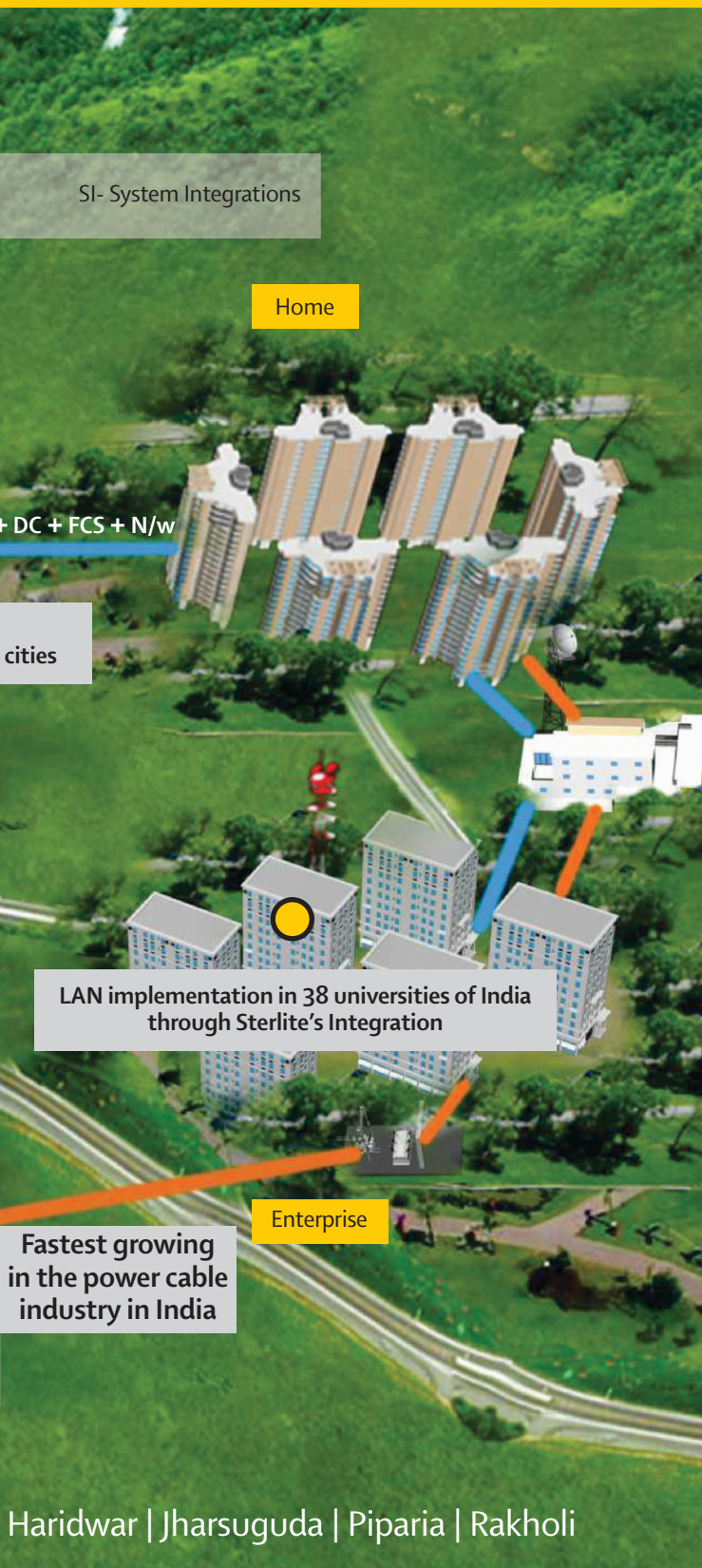
Aluminium & High Performance Conductors

Your Partners in High Speed Data and Energy



Connecting Every Home on the Planet

Energy Transmission



About Sterlite

Progress has been defined by a fundamental need for connectivity- connectivity between people, between places, of thoughts and of ideas. Power and Telecommunication are the two primary infrastructure platforms that have defined the progress of individuals, enterprises and nation.

Sterlite Technologies Limited facilitates progress across the planet, through connectivity- by making it faster, easier, and more cost-effective (for service providers) to build power and telecom networks. Sterlite does it through its suite of products, solutions and infrastructure.

Global Solutions

Sterlite Technologies Limited is a leader in providing transmission solutions for the power and telecom industry, globally. Equipped with a comprehensive portfolio that includes products such as overhead transmission & distribution conductors, high performance conductors, OPGW, power cables, optical fibers, telecommunication cables, solutions for system integration, fiber connectivity and building power & telecom infrastructure, Sterlite's vision is to "Connect every home on the planet". We are committed to providing the lowest per unit cost of energy transmission over the life cycle.

Positioned strongly in high growth geographies and high growth industries, we are recognized as one of the most cost-effective manufacturers in the world. This gives us a competitive edge to effectively address sales in our chosen focus markets. We have also invested in several projects for backward integration of our manufacturing processes as well as forward integration of our technology solutions.

Today, Sterlite is the only company offering products for ultra high voltage power transmission and extra high speed data transmission. Our products are suitable for use in Power, Telecom, Defense, Aviation, Oil & Gas and Transportation sectors. Sterlite is also executing multi-million dollar power transmission system projects, pan-India and has been awarded three projects for building transmission lines and substations in India, as a developer, on a build-own-operate-maintain (BOOM) basis.

We share a common lineage with Vedanta Resources Plc., a globally diversified natural resources group.



Sterlite's conductors used in the
first 500kV transmission line to connect Sweden & Finland



Overhead Transmission & Distribution Aluminium Conductors

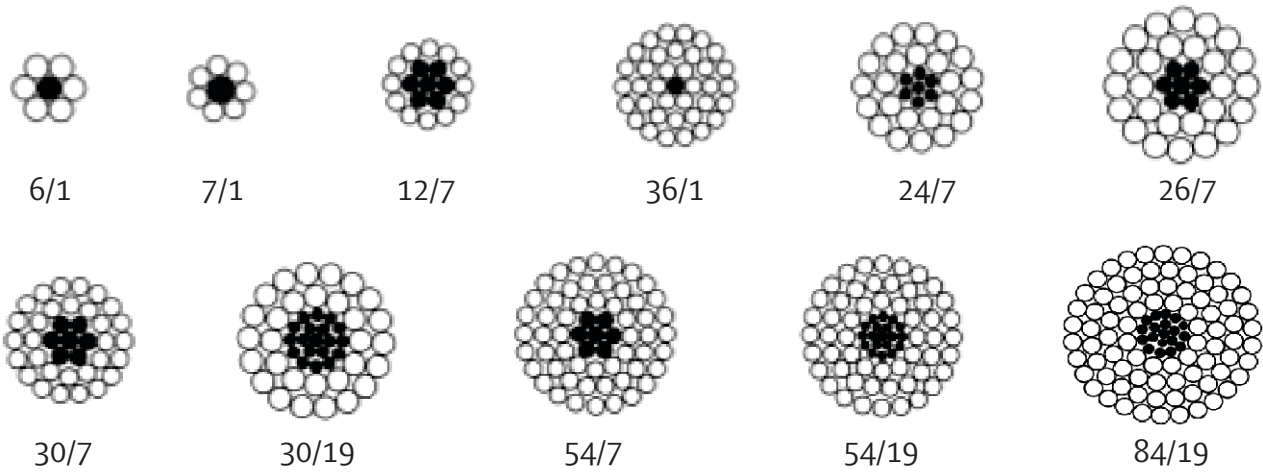
Sterlite provides power transmission & distribution companies a holistic one-stop window for assessment, development & implementation of solutions for their power transmission & distribution (T&D) networks. Supported by a fully integrated manufacturing facility that converts ingots to bare overhead conductors, Sterlite's range of standard and custom-designed power solutions deliver superior performance in transmission and performance reliability.

Our offerings include:

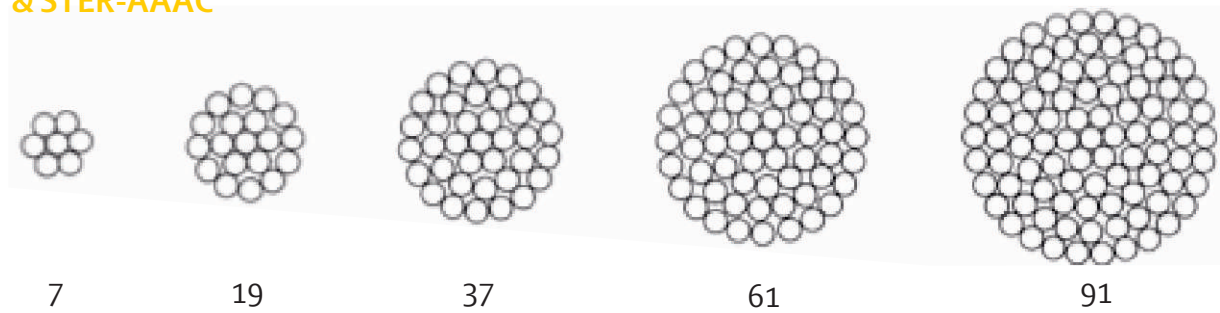
- STER-ACSR™
- STER-ACSR™/AS or /AW
- STER-AAC™
- STER-AAAC™
- STER-ACAR™

Overhead T&D Aluminium Conductors

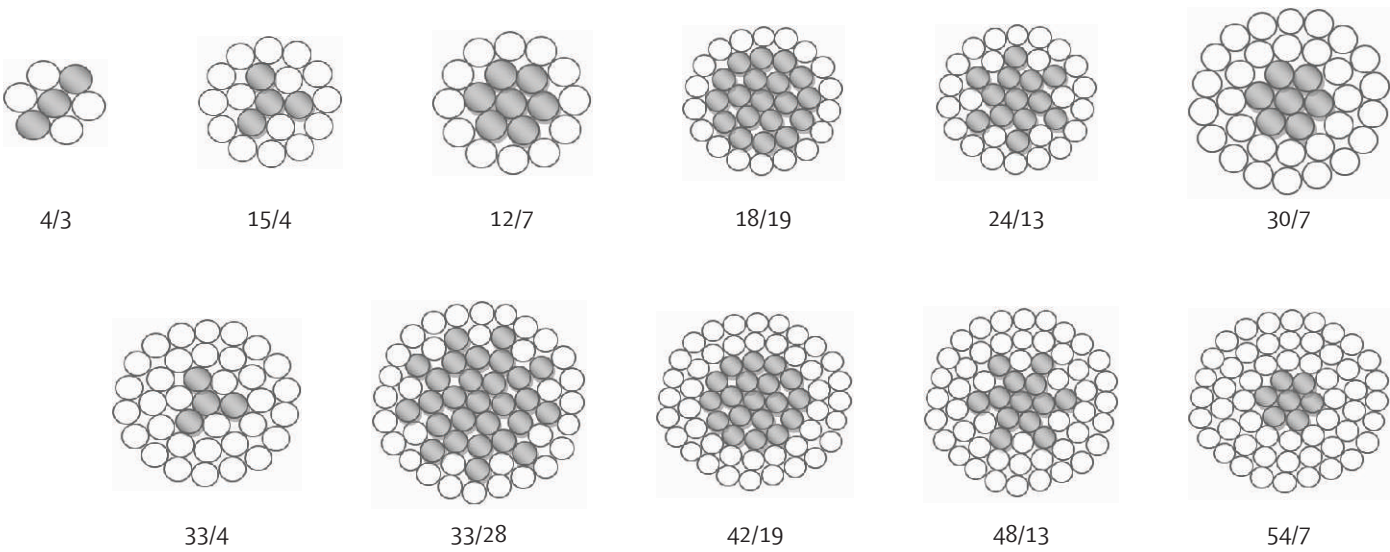
STER-ACSR™ & STER-ACSR-AW



STER-AAC™ & STER-AAAC™



STER-ACAR™



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 a one or more layers of aluminium wires stranded over a high strength steel core. The core can be single or multiple strands depending on the application or requirement. There can be various stranding combinations of Al and steel wires giving flexibility to obtain the suitable current carrying capacity and mechanical strength based on the application.

Advantages

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

Applications

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

Manufacturing Capability

Sr. No.	Description	Range	
1	Conductor Area	10.6 mm ² to 1393 mm ²	0.0164 in ² to 2.1592 in ²
2	Conductor Construction	6Al/1Steel to 84Al/19Steel	
3	Conductivity of Aluminum	61%	

Physical Properties

At a temperature of 20°C (68°F), the density of hard-drawn aluminum 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
1	6Al/1Steel	81000	11748	19.2 X 10 ⁻⁶	10.7 X 10 ⁻⁶
2	6Al/7Steel	75000	10878	19.8 X 10 ⁻⁶	11.0 X 10 ⁻⁶
3	12Al/7Steel	107000	15519	15.3 X 10 ⁻⁶	8.5 X 10 ⁻⁶
4	18Al/1Steel	66000	9572	21.2 X 10 ⁻⁶	11.8 X 10 ⁻⁶
5	24Al/7Steel	74000	10733	19.4 X 10 ⁻⁶	10.8 X 10 ⁻⁶
6	26Al/7Steel	77000	11168	18.9 X 10 ⁻⁶	10.5 X 10 ⁻⁶
7	30Al/7Steel	82000	11893	17.8 X 10 ⁻⁶	9.9 X 10 ⁻⁶
8	26Al/19Steel	76000	11023	19.0 X 10 ⁻⁶	10.5 X 10 ⁻⁶
9	30Al/19Steel	81000	11748	17.9 X 10 ⁻⁶	9.9 X 10 ⁻⁶
10	42Al/7Steel	60000	8702	21.2 X 10 ⁻⁶	11.8 X 10 ⁻⁶
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	
1	Permissible Temp in continuous operation	85°C	185°F
2	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.

STER-ACSR™/AS or STER-ACSR™/AW

Aluminium Conductors, Aluminium Clad Steel Reinforced (ACSR/AS or ACSR/AW) are concentrically stranded conductors with one or more layers of hard drawn 1350-H19 aluminum wires on Aluminium Clad steel wire core. The core can be single wire or stranded depending on the size.

Advantages

A higher UTS can be achieved by increasing core and higher current carrying capacity by increasing Al content. The mechanical properties of ACSR/AS conductors are similar to ACSR conductors but offers improved ampacity and resistance to corrosion because of the presence of aluminum clad steel wires in the core. These conductors are better replacement for ACSR conductors where corrosive conditions.

Applications

High voltage overhead transmission & distribution lines, & coastal regions.

Manufacturing Capability

Sr. No.	Description	Range	
1	Conductor Area	10.6 mm ² to 1393 mm ²	0.0164 in ² to 2.1592 in ²
2	Conductor Construction	6Al/1ACS to 84Al/19ACS	
3	Conductivity of Aluminum	61%	
4	Conductivity of ACS Wire	20.3%	

Physical Properties

At a temperature of 20°C (68°F), the density of hard-drawn aluminum has been taken as 2.703 g/cm³ (168.74 lb/cf) and aluminum clad steel wires 6.59 g/cm³ (411.40 lb/cf)

Sr. No.	Conductor Construction	Modulus of elasticity*		Linear Coefficient*	
		Mpa	ksi	/°C	/°F
1	6Al/1ACS	74000	10733	19.3 X 10 ⁻⁶	10.7 X 10 ⁻⁶
2	26Al/7ACS	71000	10298	19.1 X 10 ⁻⁶	10.6 X 10 ⁻⁶
3	30Al/7ACS	74000	10733	18.0 X 10 ⁻⁶	10.0 X 10 ⁻⁶
4	54Al/7ACS	65000	9427	19.5 X 10 ⁻⁶	10.8 X 10 ⁻⁶

Sr. No.	Description	Range	
1	Permissible Temp in continuous operation	75°C	167°F
2	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.

AAC conductor is also known as aluminum stranded conductor. These conductors consist of several layers of aluminium wires stranded concentrically. AAC are manufactured from electrolytically refined aluminum, with a minimum purity of 99.7%

Advantages

All Aluminum Conductor (AAC) have high ratio of electrical conductivity to weight, high flexibility and low UTS. Also the aluminium has low levels of brittleness.

Applications

All Aluminum Conductor (AAC) are used in low voltage overhead lines in urban areas and in high voltage substation conductors. Also, used in very cold areas due to low brittleness of aluminum in the MV lines.

Manufacturing Capability

Sr. No.	Description	Range	
1	Conductor Area	10.6 mm ² to 1095 mm ²	0.0164 in ² to 1.6973 in ²
2	Conductor Construction	7Al to 91Al	
3	Conductivity	61%	

Physical Properties

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

Sr. No.	Conductor Construction	Modulus of elasticity*		Linear Coefficient*	
		Mpa	ksi	/°C	/°F
1	7 Strands	60000	8702	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
2	19 Strands	57000	8267	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
3	37 Strands	57000	8267	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
4	91 Strands	55000	7977	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶

Sr. No.	Description	Range	
1	Permissible Temp in continuous operation	75°C	167°F
2	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.

AAAC (All Aluminium Alloy Conductors)- Several layers of aluminium alloy (generally Al-Mg-Si) stranded in concentric layers. Designed using a highstrength aluminum alloy to achieve a high strength-to-weight ratio; affords better sag characteristics

Advantages

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

Applications

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

Manufacturing Capability

Sr. No.	Description	Range	
1	Conductor Area	10.6 mm ² to 1095 mm ²	0.0164 in ² to 1.6973 in ²
2	Conductor Construction	7Al Alloy to 91Al Alloy	
3	Conductivity	52.5% to 53%	

Physical Properties

At a temperature of 20° C (68°F), the density of hard-drawn aluminum has been taken as 2.70 g/cm³ (168.74 lb/cf).

Sr. No.	Conductor Construction	Modulus of elasticity*		Linear Coefficient*	
		Mpa	ksi	/°C	/°F
1	7 Strands	62000	8992	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
2	19 Strands	60000	8702	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
3	37 Strands	57000	8267	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
4	61 Strands	55000	7977	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶

Sr. No.	Description	Range	
1	Permissible Temp in continuous operation	85°C	185°F
2	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.

Aluminium Conductor Alloy Reinforced (ACAR) is formed by concentrically stranded wires of Aluminium 1350 on high strength Aluminium -Magnesium -Silicon (AlMgSi) alloy core. The number of wires of Aluminum1350 & AlMgSi alloy depends on the cable design. Though the general design comprises a stranded core of AlMgSi alloy strand, in certain cable constructions, the wires of AlMgSi alloy strands can be distributed in layers throughout the Aluminium 1350 strands.

Advantages

ACAR has better mechanical and electrical properties as compared to an equivalent ACSR, AAC or AAAC. A very good balance between the mechanical and electrical properties therefore makes ACAR the best choice where the ampacity, strength and light weight are the main consideration of the line design. For equal weight ACAR offers higher strength and ampacity than ACSR. A higher U.T.S. can be obtained, by increasing aluminium alloy content, and a higher current carrying capacity by increasing aluminium content.

Applications

Aluminum Conductors Alloy Reinforced (ACAR) are extensively used for overhead distribution and transmission lines .

Manufacturing Capability

Sr. No.	Description	Range	
1	Conductor Area	10.6 mm ² to 1520 mm ²	0.0164 in ² to 2.356 in ²
2	Conductor Construction	4Al/3Al Alloy to 72Al/19Al Alloy	
3	Conductivity of Aluminum	61%	
4	Conductivity of Al Alloy	52.5% to 53%	

Physical Properties

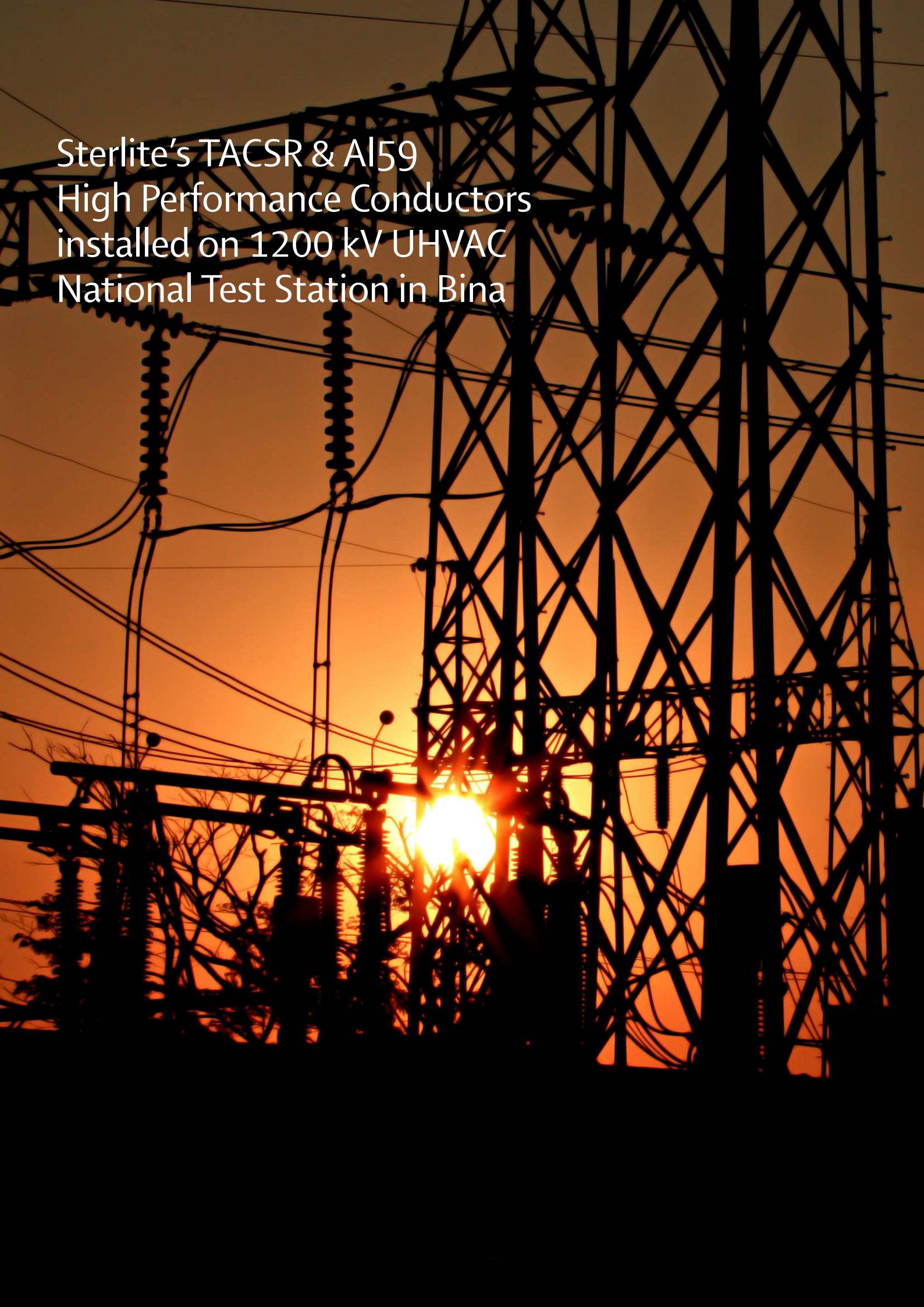
At a temperature of 20° C (68°F), the density of hard-drawn aluminum has been taken as 2.703 g/cm³ (168.74 lb/cf) and aluminum alloy wires 2.70 g/cm³ (168.56 lb/cf)

Sr. No.	Conductor Construction	Modulus of elasticity*		Linear Coefficient*	
		Mpa	ksi	/°C	/°F
1	7 Strands	62000	8992	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
2	19 Strands	60000	8702	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
3	37 Strands	57000	8267	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶
4	61 Strands	55000	7977	23.0 X 10 ⁻⁶	12.8 X 10 ⁻⁶

Sr. No.	Description	Range	
1	Permissible Temp in continuous operation	85°C	185°F
2	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.

A large, complex lattice tower for high-voltage power transmission dominates the right side of the frame. The sun is positioned low in the background, directly behind the tower's structure, creating a bright, glowing effect and casting the entire scene into silhouette. The sky is a deep orange-red color. Various power lines and insulators are visible, extending from the tower and across the frame.

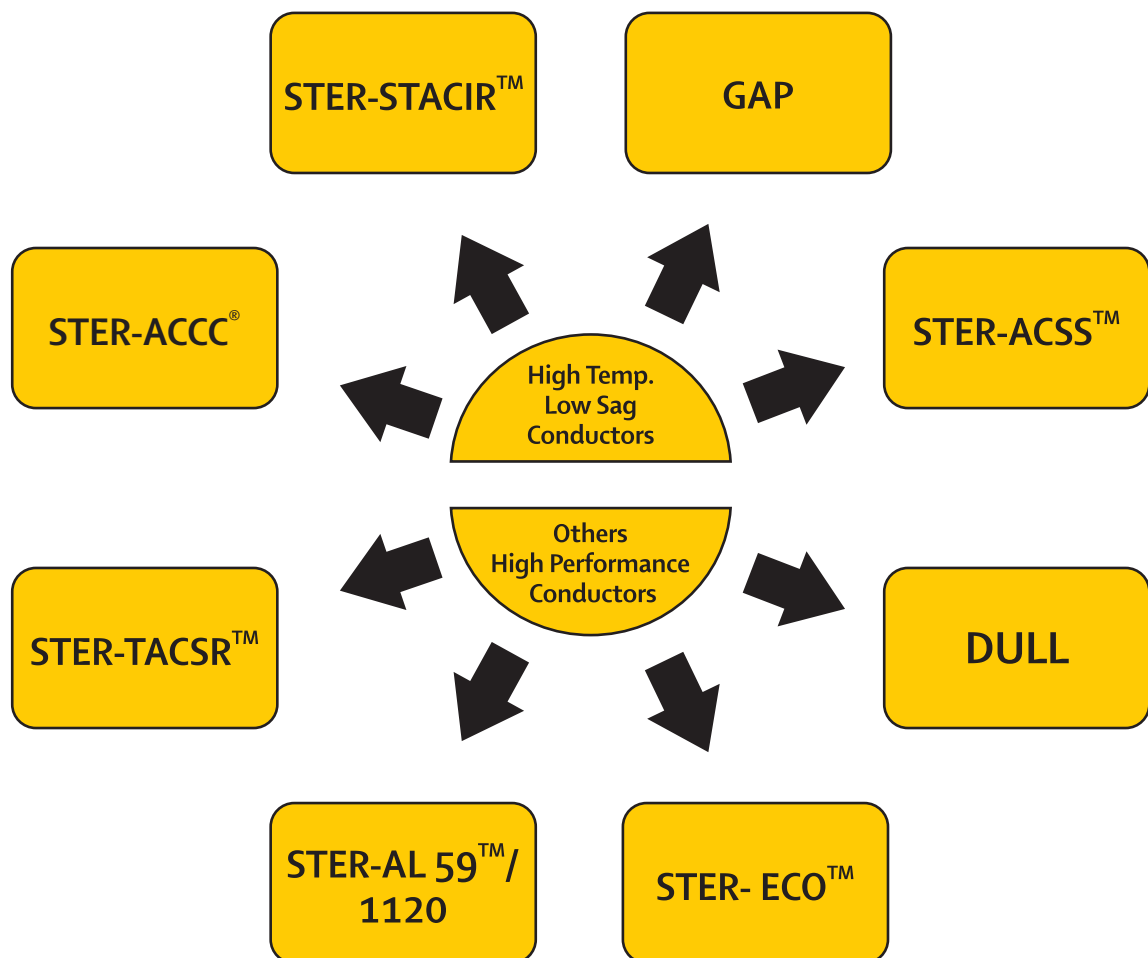
Sterlite's TACSR & Al59
High Performance Conductors
installed on 1200 kV UHVAC
National Test Station in Bina

High Performance Conductors

Efficient power transmission is the need of the hour, aimed to alleviate the burgeoning demands from today's power utility system.

If the challenge is to transmit more power over existing lines, high ampacity conductors that are manufactured from a range of speciality materials, offer the most optimal means to increase line capacity at a relatively low cost.

A range of speciality alloys offer superior thermal resistance that improves the efficiency in high current transmission.



As these new generation conductors enhance the current carrying capacity, they are favourable for use in re-conductoring as well as new lines. This provides the user high corridor intensity and reduces congestion in existing lines.

1st ever to install ACCC transmission line in India

Sterlite executed a turnkey project for Torrent Power which involved supply and installation of the ACCC conductor on a live 132 kV transmission line from Pirana to Vinzol in Gujarat.

Live Stringing on 132 kV transmission line from Pirana to Vinzol in Gujarat | Double the original capacity | Eco-friendly
Reduced Loss in Transmission | Effortless Integration | Compliant with Design Standards | Improved Efficiency

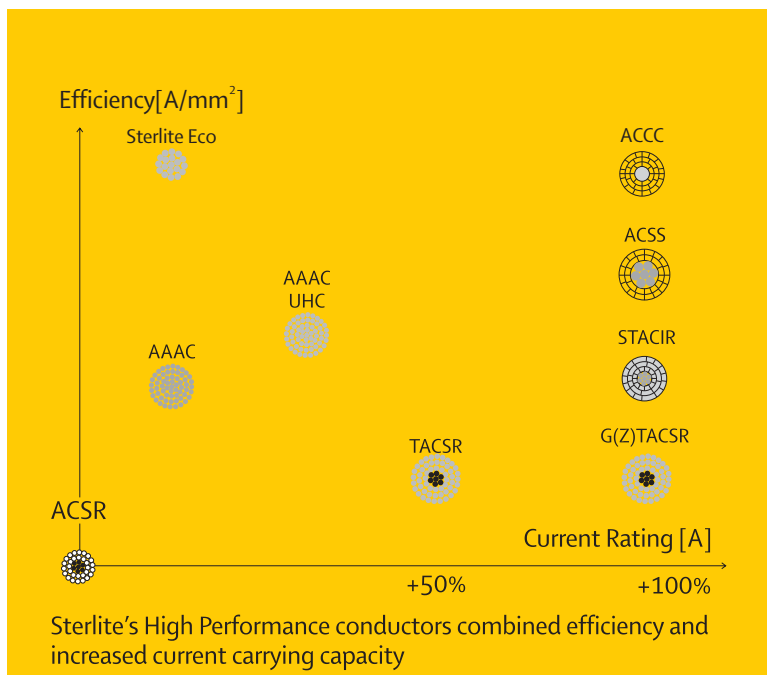
Benefits in Performance & Cost

Re-conductoring

- Enhanced current carrying capacity for the same diameter/wieght.
- Minimum or no modification/ reinforcement to existing towers.

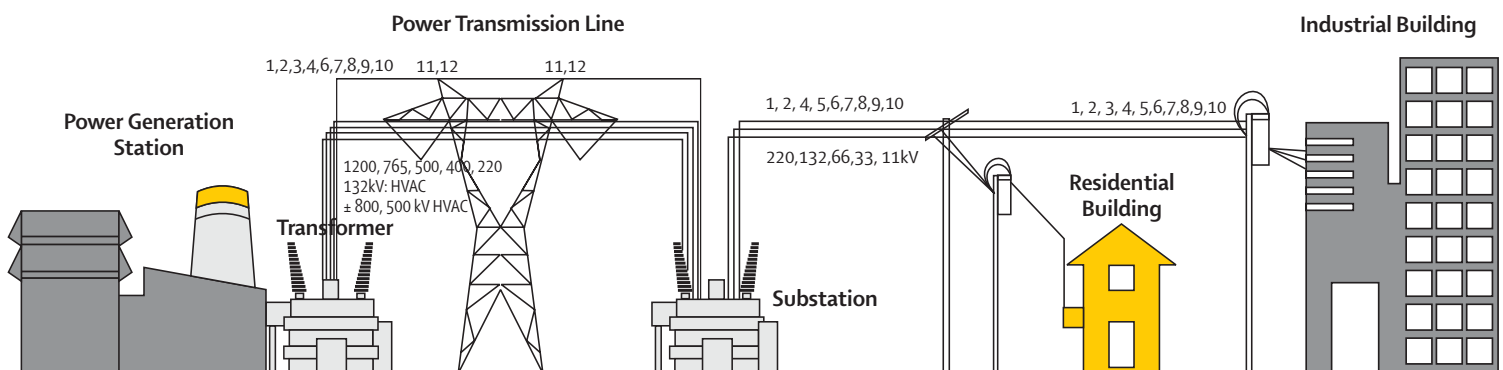
Green Solutions

- Low losses leading to lower carbon emissions.
- Run at lower temperature for the same current.



New lines

- Enhanced current carrying capacity.
- Reduction in per unit transmission cost.
- Higher corrosion resistance.
- Shorter project duration.
- Additional Capacity of ~100% is reserved for the future demand



1. STER-AAAC™ Conductors
2. STER-ACSR™ Conductors
3. STER-AACSR™ Conductors
4. STER-ACAR™ Conductors
5. STER-AAC™ Conductors

6. STER-AL59™ Conductors
7. STER-ACSS™ Conductors
8. STER-TACSR™ Conductors
9. STER-STACIR™ Conductors
10. Special Alloy Conductors (1120, EHC, 6101, 6201)

11. OPGW Cables
12. OPGW Accessories
13. STER-ACCC® Conductors
14. STERLITE-ECO™ Conductors

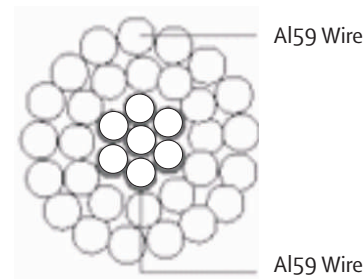
STER-AL59TM

These are homogenous alloy conductors belonging to Aluminium + Magnesium + Silica Alloy type. These conductors have a conductivity of 59% and hence have lesser DC resistance & higher current carrying capacity.



Application

AL59 alloy conductors are used in power transmission and distribution lines for a wide voltage range (low voltage to ultra high voltage). These conductors have higher current carrying capacity in lower losses due to lower DC resistance. AL59 conductors have high corrosion resistance, making them most suited for deployment in coastal regions.



Benefits

- 26% to 31% more current carrying capacity as that of ACSR of the same size, while maximum sag remains the same & working tension is lesser than that of ACSR.
- Resistivity is substantially lesser than that of ACSR/AAAC conductors, resulting in lower I^2R losses.
- Higher corrosion resistance than 6201 alloy series (AAAC).

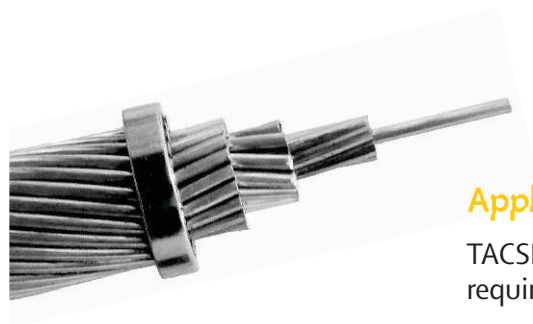
Technical Specifications

Properties	AL59 (ACSR Moose Equivalent)		AL59 (ACSR Zebra Equivalent)		AL59 (ACSR Panther Equivalent)	
Typical Factors	3.50 mm	0.1378 in	3.18 mm	0.1252 in	3.00 mm	0.1181 in
Reference Specifications	SS 4240814		SS 4240814		SS 4240814	
Total Cross Section Area	587.00 mm ²	0.9099 in ²	484.25 mm ²	0.7506 in ²	261.50 mm ²	0.4053 in ²
Conductive Wire	AL59		AL59		AL59	
Core Wire	AL59		AL59		AL59	
Conductor Diameter	31.50 mm	1.2402 in	28.62 mm	1.1268 in	21.00 mm	0.8268 in
Weight	1618 kg/gm	1087.2 lbs/mile	1336 kg/km	897.8 lbs/mile	720 kg/km	483.8 lbs/mile
Ultimate Tensile Strength	14350 kg	31636.3 lbs	12340 kg	27205.01 lbs	6661 kgf	14684.97 lbs
DC Resistance at 20°C Temperature	0.05 Ω/km	0.08 Ω/mile	0.06 Ω/km	0.10 Ω/mile	0.11 Ω/km	0.18 Ω/mile
Maximum Operating Temperature	95°C	203°F	95°C	203°F	95°C	203°F
Current Carrying Capacity at Maximum Operating Temperature	1094 Amp		958 Amp		654 Amp	

Assumptions: Ampacity is calculated based on, 45°C (113°F) ambient temperature, 0.6 m/s wind velocity, 0.5 as coefficient of solar absorption, 0.6 as coefficient of emmissivity and 1200Wt/sqm coefficient for solar radiation, at sea level.

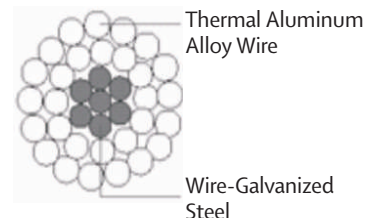
STER-TACSR™

Sterlite® Thermal-resistant Aluminum-alloy Conductor, Steel Reinforced (TACSR) conductors are high ampacity conductors, wherein the inner core is composed of galvanized steel and the outer layers are composed of thermal-resistant aluminum-alloy.



Application

TACSR conductors are recommended for new lines for high power transfer requirement.



Benefits

New Aluminium alloys having high thermal resistance can carry 50% to 60% more current as that of ACSR of the same size; while maximum sag & maximum working tension remains almost same as that of ACSR.

- Can carry 50% to 60% more current as that of ACSR of the same size.
- Higher capacity new lines can be built to deal with future demands

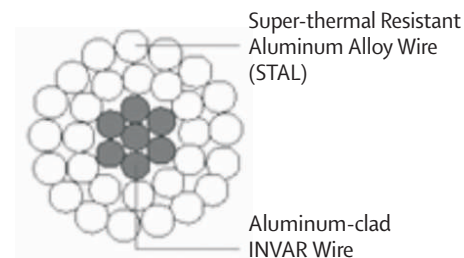
Technical Specifications

Properties	TACSR (ACSR Moose Equivalent)		TACSR (ACSR Zebra Equivalent)		TACSR (ACSR Panther Equivalent)	
Typical Factors	3.53 mm	0.1378 in	3.18 mm	0.1252 in	3.00 mm	0.1181 in
Reference Specifications	IEC 62004		IEC 62004		IEC 62004	
Total Cross Section Area	596.99 mm ²	0.9253 in ²	484.25 mm ²	0.7506 in ²	261.50 mm ²	0.4054 in ²
Conductive Wire	Al Zr AT1		Al Zr AT1		Al Zr AT1	
Core Wire	Galvanized Steel		Galvanized Steel		Galvanized Steel	
Conductor Diameter	31.77 mm	1.2508 in	28.62 mm	1.1268 in	21.00 mm	0.8268 in
Weight	2004 kg/gm	1346.6 lbs/mile	1621 kg/km	1089.3 lbs/mile	972 kg/km	653.2 lbs/mile
Ultimate Tensile Strength	16438 kg	36239.54 lbs	14407 kg	31761.96 lbs	10119 kg	22308.55 lbs
DC Resistance at 20°C Temperature	0.06 Ω/km	0.09 Ω/mile	0.07 Ω/km	0.11 Ω/mile	0.14 Ω/km	0.22 Ω/mile
Maximum Operating Temperature	150°C	302°F	150°C	302°F	150°C	302°F
Current Carrying Capacity at Maximum Operating Temperature	1509 Amp		1302 Amp		831 Amp	

Assumptions: Ampacity is calculated based on, 45°C (113°F) ambient temperature, 0.6 m/s wind velocity, 0.5 as coefficient of solar absorption, 0.6 as coefficient of emmissivity and 1200Wt/sqm coefficient for solar radiation, at sea level.

STER-STACIR™

Sterlite® Super Thermal Alloy Conductor Invar Reinforced (STACIR) conductor has outer layers composed of Super Thermal Aluminum (STAL) alloy wires that can operate up to 210°C (410°F). The inner core is composed of aluminum clad INVAR wires. INVAR is a metal alloy with 36% Ni in steel.



Application

STACIR/AW conductors are suited for re-conductoring applications. The capacity of the existing transmission line can be enhanced by simply replacing the existing conductor without any modifications to the tower.

Benefits

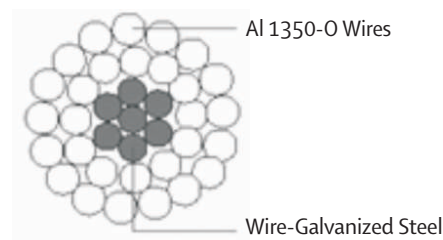
- Can carry 100% more current as that of ACSR of the same size, while maximum sag and maximum working tension remain the same as that of ACSR.
- For uprating transmission and distribution lines, no modification or reinforcement is required to the existing towers.

Technical Specifications

Properties	STACIR (ACSR Moose Equivalent)		STACIR (ACSR Zebra Equivalent)		STACIR (ACSR Panther Equivalent)	
Typical Factors	3.53 mm	0.1390 in	3.18 mm	0.1252 in	3.00 mm	0.1181 in
Reference Specifications	IEC 62004		IEC 62004		IEC 62004	
Total Cross Section Area	597.00 mm ²	0.9254 in ²	484.50 mm ²	0.751 in ²	261.50 mm ²	0.4054 in ²
Conductive Wire	Al Zr AT3		Al Zr AT3		Al Zr AT1	
Core Wire	Aluminum Clad Invar		Aluminum Clad Invar		Aluminum Clad Invar	
Conductor Diameter	31.77 mm	1.2508 in	28.62 mm	1.1268 in	21.00 mm	0.8268 in
Weight	1993 kg/gm	1339.2 lbs/mile	1582 kg/km	1063.1 lbs/mile	939 kg/km	631.0 lbs/mile
Ultimate Tensile Strength	14641 kg	32277.84 lbs	11968 kg	26384.89 lbs	8436 kg	18598.17 lbs
DC Resistance at 20°C Temperature	0.06 Ω/km	0.09 Ω/mile	0.07 Ω/km	0.11 Ω/mile	0.13 Ω/km	0.21 Ω/mile
Maximum Operating Temperature	210°C	410°F	210°C	410°F	210°C	410°F
Current Carrying Capacity at Maximum Operating Temperature	1871 Amp		1626 Amp		1040 Amp	

Assumptions: Ampacity is calculated based on, 45°C (113°F) ambient temperature, 0.6 m/s wind velocity, 0.5 as coefficient of solar absorption, 0.6 as coefficient of emmissivity and 1200Wt/sqm coefficient for solar radiation, at sea level.

Sterlite® Aluminum Conductor Steel Supported (ACSS) conductor is a composite concentric lay-stranded conductor consisting of a stranded steel central core with one or more layers of 1350-0 (High Temperature) aluminum wires.



Application

ACSS conductors can be designed as a low loss solution, as part of efficient transmission networks. These conductors are suitable for lines that transmit very high or fluctuating loads.

Benefits

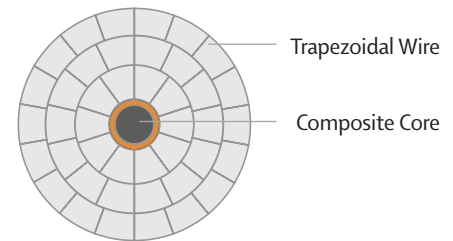
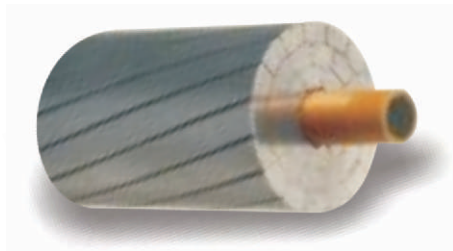
- Improved self-damping characteristics and high degree of resistance to vibration fatigue.
- Can operate continuously at high temperatures up to 250°C (482°F) with appropriate steel core coating vs. 100°C (212°F) for standard ACSR, hence carrying twice as much as current compared to ACSR conductor.
- No creep.
- Less susceptible to Aeolian vibration fatigue due to the very low mechanical load on the annealed aluminum wire.
- Requires conventional installation techniques.
- Allows for lower overall transmission cost.

Technical Specifications

Properties	ACSS Curlew		ACSS Drake		ACSS Hawk	
Typical Factors	3.51 mm	0.1383 in	4.44 mm/3.45 mm	0.1749 in/ 0.136 in	3.51 mm/2.67 mm	0.1383 in/ 0.1051 in
Reference Specifications	ASTM B856		ASTM B856		ASTM B856	
Total Cross Section Area	591.00 mm ²	0.9161 in ²	468.50 mm ²	0.7262 in ²	281.00 mm ²	0.4356 in ²
Conductive Wire	Al1350-O (Fully Annealed Al wires)		Al1350-O (Fully Annealed Al wires)		Al1350-O (Fully Annealed Al wires)	
Core Wire	Mischmetal Alloy Coated Steel		Mischmetal Alloy Coated Steel		Mischmetal Alloy Coated Steel	
Conductor Diameter	31.62 mm	1.2449 in	28.13 mm	1.1075 in	21.77 mm	0.8571 in
Weight	1981 kg/km	1331.2 lbs/mile	1629 kg/km	1094.6 lbs/mile	976 kg/km	655.8 lbs/mile
Ultimate Tensile Strength	13807 kg	30439.19 lbs	12742 kg	28091.27 lbs	7779 kg	17149.74 lbs
DC Resistance at 20°C Temperature	0.05 Ω/km	0.09 Ω/mile	0.07 Ω/km	0.11 Ω/mile	0.12 Ω/km	0.19 Ω/mile
Maximum Operating Temperature	210°C	410°F	210°C	410°F	210°C	410°F
Current Carrying Capacity at Maximum Operating Temperature	1854 Amp		1564 Amp		1120 Amp	

Assumptions: Ampacity is calculated based on, 45°C (113°F) ambient temperature, 0.6 m/s wind velocity, 0.5 as coefficient of solar absorption, 0.6 as coefficient of emissivity and 1200Wt/sqm coefficient for solar radiation, at sea level.

Sterlite Aluminum Conductor Composite Core (ACCC) conductor consists of a hybrid carbon and glass fiber core which is wrapped with trapezoidal shaped aluminum strands. The high strength structural core carries most of the conductor's mechanical load, while the fully annealed aluminum strands carry all of the conductor's electrical current. ACCC conductor's composite core is much lighter and stronger than conventional or high-strength steel core.



Application

Ideal for Reconductoring

- Increase capacity while improving line clearance and losses.
- Reduce strain on structures increasing life.

Reduced Line Losses in New Lines:

- Under equal load conditions reduces line losses by 30 to 40 % compared to conductors of the same diameter and weight.
- 100% more capacity build towards future demand.

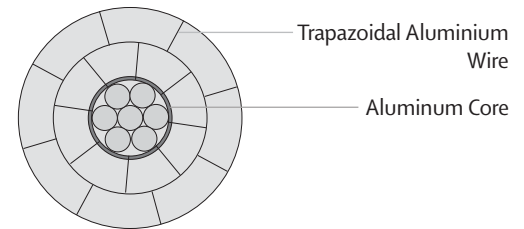
Benefits

- With 28% more annealed aluminum in a trapezoidal configuration the ACCC conductor of the same diameter as ACSR, can double the current (ampacity) rating; Higher operating efficiency reduces line losses and associated emissions by more the 35%, resulting in more power delivered and lower power generation costs.
- ACCC conductors use a patented carbon/glass/thermoset resin core that provides height strength and reduces height temperature sag.
- Can re-conductor existing pathways without structural modification and reduce capital expenses on new lines.
- Uses conventional installation methods, tools, and mostly conventional hardware- no special tools and limited special training.
- Resists environmental degradation- will not rust, corrode, or cause electrolysis with aluminum conductors and components.

Technical Specifications

Properties	ACCC Helsinki		ACCC Lisbon		ACCC Copenhagen		ACCC Drake	
Typical Factors	5.97 mm	0.2355 in	7.11 mm	0.2799 in	5.97 mm	0.2350 in	9.53 mm	0.3752 in
Reference Specifications	ASTM B857, ASTM B609		ASTM B857, ASTM B609		ASTM B857, ASTM B609		ASTM B857, ASTM B609	
Total Cross Section Area	176.11 mm ²	0.2730 in ²	358.40 mm ²	0.5555 in ²	246.57 mm ²	0.3822 in ²	588.30 mm ²	0.9119 in ²
Conductive Wire	1350 0 temper Al		1350 0 temper Al		1350 0 temper Al		1350 0 temper Al	
Core Wire	Composite Core		Composite Core		Composite Core		Composite Core	
Conductor Diameter	15.65 mm	0.6161 in	21.78 mm	0.8575 in	18.30 mm	0.7205 in	28.14 mm	1.1079 in
Weight	455 kg/km	305.7 lbs/mile	957 kg/km	642.8 lbs/mile	657 kg/km	441.5 lbs/mile	1558 kg/km	1046.9 lbs/mile
Ultimate Tensile Strength	7036 kg	15511.71 lbs	10574 kg	23311.65 lbs	7443.9 kg	16410.97 lbs	18691 kg	41206.55 lbs
DC Resistance at 20°C Temperature	0.19 Ω/km	0.30 Ω/mile	0.09 Ω/km	0.14 Ω/mile	0.13 Ω/km	0.21 Ω/mile	0.06 Ω/km	0.09 Ω/mile
Maximum Operating Temperature	175°C	347°F	175°C	347°F	175°C	347°F	175°C	347°F
Current Carrying Capacity at Maximum Operating Temperature	710 Amp		1079 Amp		858 Amp		1484 Amp	

Eco Series conductors consist of trapezoidal shaped special aluminium alloy containing magnesium, silicon and copper stranded with round core. The trapezoidal shape provide compactness to the extent of 96%.



Application

Eco Seriess conductors are an innovative, efficient, low loss and most importantly an economical solution for re-conductoring power lines and constructing new lines. The higher efficiency of Eco Series Conductors enables significant savings when substituted in grid systems for normal ACSR or AAAC conductors. Also for delivery of same power to the customers, Eco Series Conductors enable power generators to reduce the amount of power they must generate and hence lesser emissions.

Benefits

- Upto 30% less I^2R losses for same sized conductor
- For same output runs cooler by 5-10°C (41-50°F), hence lower carbon emissions
- Contributing to greenhouse gases
- Can be deployed with existing structural designs

Technical Specifications

Properties	ECO Panther	
Typical Factors	2.37 mm	0.0933 in
Reference Specifications	SS42408013, 14	
Total Cross Section Area	314.11 mm ²	0.9161 in ²
Conductive Wire	Al59 wire	
Core Wire	Al59 wire	
Conductor Diameter	20.50 mm	0.8071 in
Weight	866 kg/km	581.9 lbs/mile
Ultimate Tensile Strength	7430 kg	16379.55 lbs
DC Resistance at 20°C Temperature	0.10 Ω/km	0.15 Ω/mile
Maximum Operating Temperature	95°C	203°F
Current Carrying Capacity at Maximum Operating Temperature	750 Amp	





Sterlite is among the largest fully integrated manufacturing facilities globally

Since the past decade, Sterlite has developed technical expertise in manufacture of bare overhead conductors and proven its capabilities in developing solutions that have been tested and certified by leading independent laboratories across the globe.

Fully Equipped Plants with International Standards

Three fully equipped plants to manufacture Overhead T&D conductors with International Standards.

In house Properzi Aluminium Rod rolling mills feed the manufacturing line for Transmission & Distribution conductors. The mills manufacture electrical grade Aluminium and Alloy Rods.

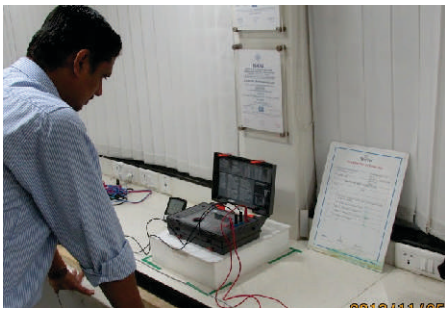
The plants have complete facilities for rod rolling, wire drawing, heat treatment and stranding to ensure precise tolerances to all international standards and stringent specifications.

A technology upgrade review is periodically undertaken to keep abreast with the latest manufacturing technology. There is a strong focus on research and development. In house domain expertise is used for customized solutions.

Quality

Our centralized quality control department comprises a team of experienced and quality engineers. At our fully equipped laboratories, we continuously monitor quality parameters at all stages: from raw material inflow, in process and final inspection.

In-house State of the art NABL accredited laboratories for Quality Control & Testing



Based on specific customer requirements, our Transmission & Distribution conductors are put through stringent type tests before dispatch. These tests include:

- Ultimate Tensile Strength
- Stress Strain
- Surface Condition
- DC Resistance
- Corona Inception and Extinction Voltage
- Radio Interface Voltage

Our Conductors conform to several international standards:

- European Norms (EN)
- Swedish Standards (SS)
- IEC
- American Standards (ASTM)
- Indian Standards (IS)
- Australian Standards (AS)
- Canadian Standards (CSA)

Our Solutions have been tested & certified by various renowned laboratories across the globe such as ERDA (India), CPRI (India), Kinectrics (Canada), Veki VNL (Hungary), SAG FGH (Germany), EDF (France), NETFA (South Africa), SABS (South Africa), CSERI (China), Tag Corporation (India), NABL (India).

Packaging



The packing of the conductor is an integral part of the manufacturing process, and the kind of package must be predetermined before production can begin.

Unless otherwise specified or agreed with in case of order, all type of conductors shall be shipped on Sterlite standard steel reels having dimensions that can be provided on enquiry.

Sterlite standard reels shall have enough condition to stand against the ordinary handling in transportation and shipping and be found ready and handy enough at the time of installation in site. The reels will be stenciled legibly with following information; serial/drum number, size and kind of conductor, length of conductor, and any other identification marks specified on the order by the purchaser.

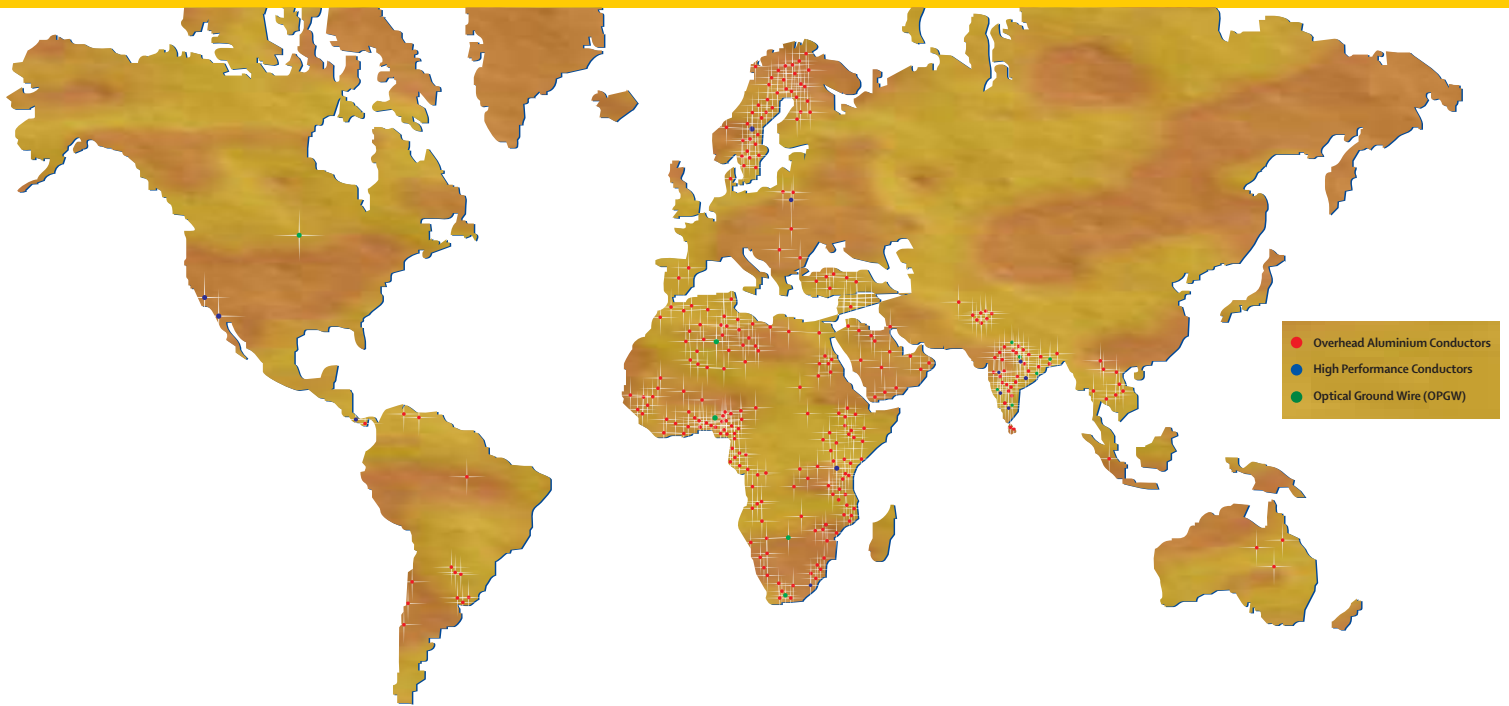
Outer Protection

Outer layer of conductor shall be protected with Thick PE sheet and solid PP sheet in place of wooden lagging. Inner surface of flange and barrel shall be protected with PPE Solid Sheet. The Drums shall be painted with one primer coat and then synthetic enamel.

Features and Benefits

- Optimum mechanical protection without breaking/splintering like wooden batten
- Impact and puncture resistant (second layer solid sheet)
- Environmental resistance– long lifetime, unaffected by climate change or UV exposure, unlike wood, zero risk of deterioration and fungus
- Nail free- no risk of nail damage to conductor
- Reusable- can be dismantled and reused as and when required
- Can be stored as long as possible

Global Footprints



Power transmission & distribution solutions proven in global networks

Sterlite[®] has been instrumental for the supply of technologically advanced power solutions to leading incumbents over 65 countries.

Sterlite's conductors have been deployed extensively across India. Our solutions are being used by:

- PGCIL- one of the world's largest transmission utilities.
- Major Transcos like MSETCL, UPPTCL, AP Transco, KPTCL, RRVPNL, MPPTCL, TANtransco, etc.
- IPPs like BALCO, Jindal, Adani, Reliance as well Renewable Energy providers like Suzlon

Globally, our high performance conductors have been installed in the T&D networks of the following geographies:

- Latin America
- USA
- Europe
- Africa
- India



The Sterlite Advantage

Global experience

- Expert in providing customized solutions to business challenges in the transmission industry, worldwide
- Significant supply record
- In India, 25% of the national grid runs on Sterlite's conductors

Building Infrastructure

On BOOM Basis,

- 2850 Kms of transmission lines & 2 substations across India
- Over 3000 Kms of OPGW Live line being developed by MTCIL, 1st of its kind Joint Venture with state owned utility of Maharashtra, India
- Fiber brought to over 1 million homes in top 6 Metro cities of India

End-to-end project implementation

Sterlite ensures complete control over the value chain and delivers end-to-end project management services.

Sterlite's project management suite:



Qualified and experience talent pool

Sterlite has a qualified talent pool, experienced in network design, project management, network implementation and network maintenance.

Credible partners

Sterlite has partnered with reputed project management companies and Original Equipment Manufacturers (OEMs), to ensure that the delivery of the project is streamlined.

Solution development for newer applications

Sterlite continues to enhance its portfolio taking into account the bandwidth need evolving from client applications.

Fully integrated Company

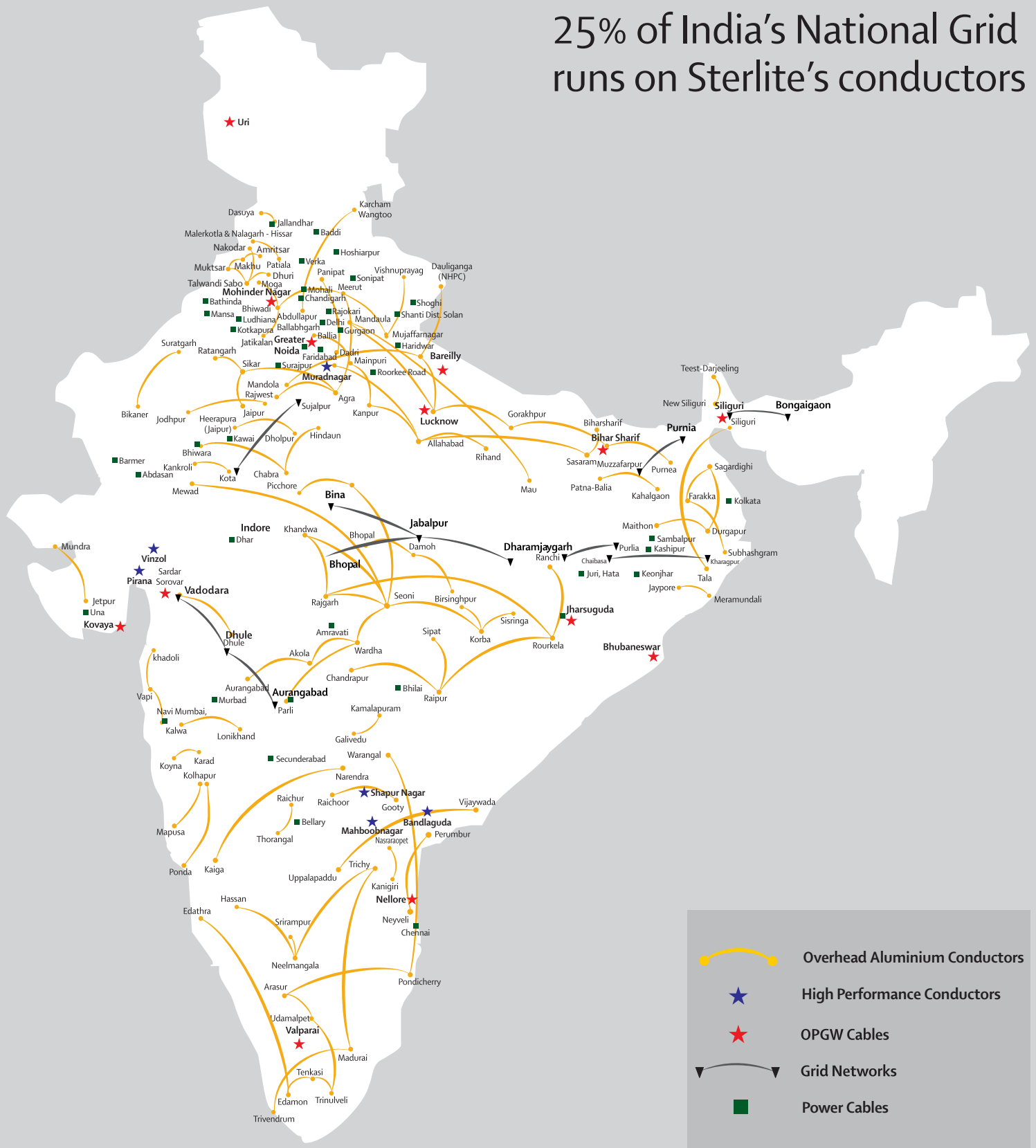
Backward integration of manufacturing processes and forward integration of our technology solutions

Local support

With offices in 10 countries, Sterlite always has a relationship manager who is a mere phone call away, to understand your growth aspirations and to explore areas where value can be added to your business.

Partnering India's growth in Power sector

25% of India's National Grid runs on Sterlite's conductors



We make it easier, faster and more cost effective to build infrastructure for power transmission and distribution.

Power Business

Sterlite provides power transmission & distribution companies a holistic one stop window for assessment, development & implementation of solutions for their power transmission & distribution(T&D) networks.

T&D Network Assessments

- Assessment of existing & potential power demand
- Technical Analysis
- Assessment of suitable solution options

Development

- T&D Solution Development
- T&D Solution Testing

Implementation

- T&D Solution Manufacture
- Inventory Management & Supply
- Technical Support and Service

Sterlite's portfolio also includes:

OPGW

Since the past two decades, Sterlite has developed technical expertise in fibre optic cables and proven its capabilities in the manufacture of energy efficient bare overhead transmission & distribution conductors. Sterlite has integrated these strengths in its comprehensive OPGW solution, becoming the first fully integrated manufacturer of OPGW cables in India.

Hardware & Accessories

Compatible accessories like dead ends, suspension sets, joints/joint boxes, vibration dampers and all necessary fittings, for a whole range of OPGW & HPC offerings, are provided as part of Sterlite's solution.

Power Cables

Sterlite's single integrated Power Cables facility at Haridwar, manufactures and supplies MV, HV and EHV cables. The plants have complete facilities for sheathing, rod rolling, wire drawing, heat treatment and stranding to ensure precise tolerance to all international standards and stringent specification 6.6 to 220 kV.

Power Infrastructure

Sterlite has been awarded five projects for building power transmission systems (line and substations) in India, as a developer, on a Build-Own-Operate-Maintain (BOOM) basis. For these projects, Sterlite undertakes designing, financing, construction, and maintenance of the transmission systems for concession periods ranging from 25 to 30 years.

These transmission lines would help facilitate power evacuation and would be used for SEBs, Power Gencos for which Sterlite would earn a fixed transmission tariff.

Key Highlights:

- Total value: Approx US \$ 1014 Mn
- Approx 2850 Km of transmission lines + 2 substations
- India's first 765 kV D/C transmission line

Sterlite's Power Infrastructure portfolio of the five projects would evacuate and transmit power through a network of 2850 km of transmission lines and 2 substations in the Indian states of Maharashtra, Gujarat, Madhya Pradesh, Chattisgarh, West Bengal, Bihar, Assam and Rajasthan.

These EHV projects represent significant advancements in the field of power transmission. These projects would enhance the overall grid capacity significantly and substantially reduce transmission power losses, thus assisting the economic development of the nation.

"Enabling lowest cost of Energy Transmission over the life cycle"

For product details/ query, contact nearest Sales representative or write to us at communications@sterlite.com

Certificates



CERTIFICATE OF REGISTRATION

This is to certify that:

Sterlite Technologies Limited (Transmission Business Division)

Survey 99/2/22, Rakholi, Silvassa 396230 INDIA

operates a

ENVIRONMENTAL MANAGEMENT SYSTEM

which complies with the requirements of

AS/NZS ISO 14001:2004

for the following scope

The manufacture and supply of aluminium and aluminium alloy bare overhead conductors with or without galvanized/aluminised steel reinforcements, ACAR, for power transmission and distribution lines, aluminium and aluminium wire and wire rods.

Certificate No: CEM21196

Issued: 2 July 2012
Expires: 13 July 2015

Originally Certified: 14 July 2009
Current Certification: 29 June 2012

[Signature]
William Smith
Certification Manager

[Signature]
Duncan Lilley
Global Head - Assurance Services



Registered by:
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 286 Sussex Street Sydney NSW 2000 Australia with SAI Global Limited
11/12 Swire's Plaza Business Park behind Vadhwa Estate L.B.S Marg Chhatrapati (W) Mumbai 400086 India ("SAI Global") and
subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this
assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must
be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification
register at <http://www.sai-global.com>



CERTIFICATE OF REGISTRATION

This is to certify that:

Sterlite Technologies Ltd (Transmission Business Division)

Survey 99/2/22, Rakholi, Silvassa 396230 INDIA

operates a

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM

which complies with the requirements of

OHSAS 18001:2007

for the following scope

The manufacture and supply of aluminium and aluminium alloy bare overhead conductors with or without galvanized/aluminised steel reinforcements, ACAR, for power transmission and distribution lines, aluminium and aluminium wire and wire rods.

Certificate No: OHS20818

Issued: 2 July 2012
Expires: 13 July 2015

Originally Certified: 14 July 2009
Current Certification: 29 June 2012

[Signature]
William Smith
Certification Manager

[Signature]
Duncan Lilley
Global Head - Assurance Services



Registered by:
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 286 Sussex Street Sydney NSW 2000 Australia with SAI Global Limited
11/12 Swire's Plaza Business Park behind Vadhwa Estate L.B.S Marg Chhatrapati (W) Mumbai 400086 India ("SAI Global") and
subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this
assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must
be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification
register at <http://www.sai-global.com>



CERTIFICATE OF REGISTRATION

This is to certify that:

Sterlite Technologies Limited (Transmission Business Division)

Survey 99/2/22 Rakholi SILVASSA 396230 INDIA

operates a

QUALITY MANAGEMENT SYSTEM

which complies with the requirements of

ISO 9001:2008

for the following scope

The registration covers the Quality Management System for the manufacture and supply of aluminium and aluminium alloy bare overhead conductors with or without galvanized / aluminised steel reinforcements, ACAR, for power transmission and distribution lines, aluminium and aluminium alloy wire and wire rods.

Certificate No: QEC12376

Issued: 9 June 2011
Expires: 17 June 2014

Originally Certified: 16 June 2002
Current Certification: 9 June 2011

[Signature]
Alex Ezenkovich
General Manager - Certification Services

[Signature]
Duncan Lilley
Global Head - Assurance Services



Registered by:
SAI Global Certification Services Pty Ltd (ACN 108 716 669) 286 Sussex Street Sydney NSW 2000 Australia with SAI Global Limited
11/12 Swire's Plaza Business Park behind Vadhwa Estate L.B.S Marg Chhatrapati (W) Mumbai 400086 India ("SAI Global") and
subject to the SAI Global Terms and Conditions for Certification. While all due care and skill was exercised in carrying out this
assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property of SAI Global and must
be returned to SAI Global upon its request. To verify that this certificate is current please refer to SAI Global On-Line Certification
register at <http://www.sai-global.com>



SABS

Permit to Apply Certification Mark

Subject to the provisions of the Standards Act, 2008
(Act 8 of 2008), the relevant regulations made thereunder and the permit
conditions contained in the under mentioned schedules, this permit authorizes

**STERLITE TECHNOLOGIES LTD
SILVASSA - DADRA NAGAR HAVELI, INDIA**

to apply the certification mark



in respect of the mark specification:

**SANS 182-2:2008
TO: CONDUCTORS FOR OVERHEAD ELECTRICAL
TRANSMISSION LINES
PART 2: STRANDED ALUMINIUM CONDUCTORS**


This permit, including schedules 1 to 3 which form an integral part thereof,
- is issued without alteration;
- is identified by the applicable permit number;
- is subject to any condition or limitation contained therein;
- is valid subject to ongoing compliance with permit conditions;
- bears the embossed SABS Commercial seal. In the absence of the
seal, the permit and the schedules shall be invalid; and
- the permit may be authenticated by referring to the register of
"Certified Clients" on the SABS Commercial website (www.sabs.co.za)


Permit Number **8895/15389**
Effective Date **25 April 2012**
Expiry Date **25 April 2015**
Date of Original Registration **25 April 2012**

Chief Executive Officer *[Signature]*
sanas
SABS Commercial Seal





Certificates



SABS
Permit to Apply Certification Mark
Subject to the provisions of the Standards Act, 2008
(Act 8 of 2008), the relevant regulations made thereunder and the permit
conditions contained in the under-mentioned schedules, this permit authorizes
STERLITE TECHNOLOGIES LTD
SILVASSA - DADRA NAGAR HAVELI, INDIA

to apply the certification mark

in respect of the mark specification:


SANS 182-3:2003
TO: CONDUCTORS FOR OVERHEAD ELECTRICAL
TRANSMISSION LINES
PART 3: ALUMINIUM CONDUCTORS, STEEL REINFORCED

This permit, including schedules 1 to 3 which form an integral part thereof,
- is issued without alteration;
- is identified by the applicable permit number;
- is subject to any condition or limitation contained therein;
- is valid subject to ongoing compliance with permit conditions;
- bears the embossed SABS Commercial seal, in the absence of the
seal, the permit and the schedules shall be invalid; and
- the permit may be authenticated by referring to the register of
"Certified Clients" on the SABS Commercial website (www.sabs.co.za)

Permit Number **8895/14077**
Effective Date **25 April 2012**
Expiry Date **26 August 2015**
Date of Original Registration **26 August 2009**
Chief Executive Officer *B. Mhlonane*


SABS COMMERCIAL SOCIETY
121, Republic of South Africa
AM000687


NABL
National Accreditation Board for
Testing and Calibration Laboratories
Department of Science & Technology, India
CERTIFICATE OF ACCREDITATION

STERLITE TECHNOLOGIES LTD.
has been assessed and accredited in accordance with the standard
ISO/IEC 17025:2005
"General Requirements for the Competence of Testing & Calibration Laboratories"
for its facilities at
Survey No. 99/P, Madhuban Dam Road, Rakholi, Silvassa
in the discipline of
ELECTRICAL TESTING
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number **T-1427**
Issue Date **04/07/2012**

Valid Until **03/07/2014**

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.
Signed for and on behalf of NABL

Sangeeta Negi
Sangeeta Negi
Convenor

Anil Relia
Anil Relia
Director

Dr. T. Ramasami
Dr. T. Ramasami
Chairman


NABL
National Accreditation Board for
Testing and Calibration Laboratories
Department of Science & Technology, India
CERTIFICATE OF ACCREDITATION

STERLITE TECHNOLOGIES LTD.
has been assessed and accredited in accordance with the standard
ISO/IEC 17025:2005
"General Requirements for the Competence of Testing & Calibration Laboratories"
for its facilities at
Survey No. 99/P, Madhuban Dam Road, Rakholi, Silvassa
in the discipline of
CHEMICAL TESTING
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number **T-1425**
Issue Date **04/07/2012**

Valid Until **03/07/2014**

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.
Signed for and on behalf of NABL

Sangeeta Negi
Sangeeta Negi
Convenor

Anil Relia
Anil Relia
Director

Dr. T. Ramasami
Dr. T. Ramasami
Chairman


NABL
National Accreditation Board for
Testing and Calibration Laboratories
Department of Science & Technology, India
CERTIFICATE OF ACCREDITATION

STERLITE TECHNOLOGIES LTD.
has been assessed and accredited in accordance with the standard
ISO/IEC 17025:2005
"General Requirements for the Competence of Testing & Calibration Laboratories"
for its facilities at
Survey No. 99/P, Madhuban Dam Road, Rakholi, Silvassa
in the discipline of
MECHANICAL TESTING
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Certificate Number **T-1426**
Issue Date **04/07/2012**

Valid Until **03/07/2014**

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.
Signed for and on behalf of NABL

Sangeeta Negi
Sangeeta Negi
Convenor

Anil Relia
Anil Relia
Director

Dr. T. Ramasami
Dr. T. Ramasami
Chairman



Connecting

every home on the planet

We make it easier,
faster and more
cost-effective for
service providers to
build Power &
Telecom infrastructure

Brazil | China | India | Netherlands | Russia | South Africa | Turkey | UAE | UK | USA