

Transmission Structures

- Design
- Detailing
- Prototyping
- Testing
- Manufacturing
- Supply



Towers



Poles



Substation
Structures



Hardware



Engineering



Tower Testing

Quality. Reliability. Timely Delivery.



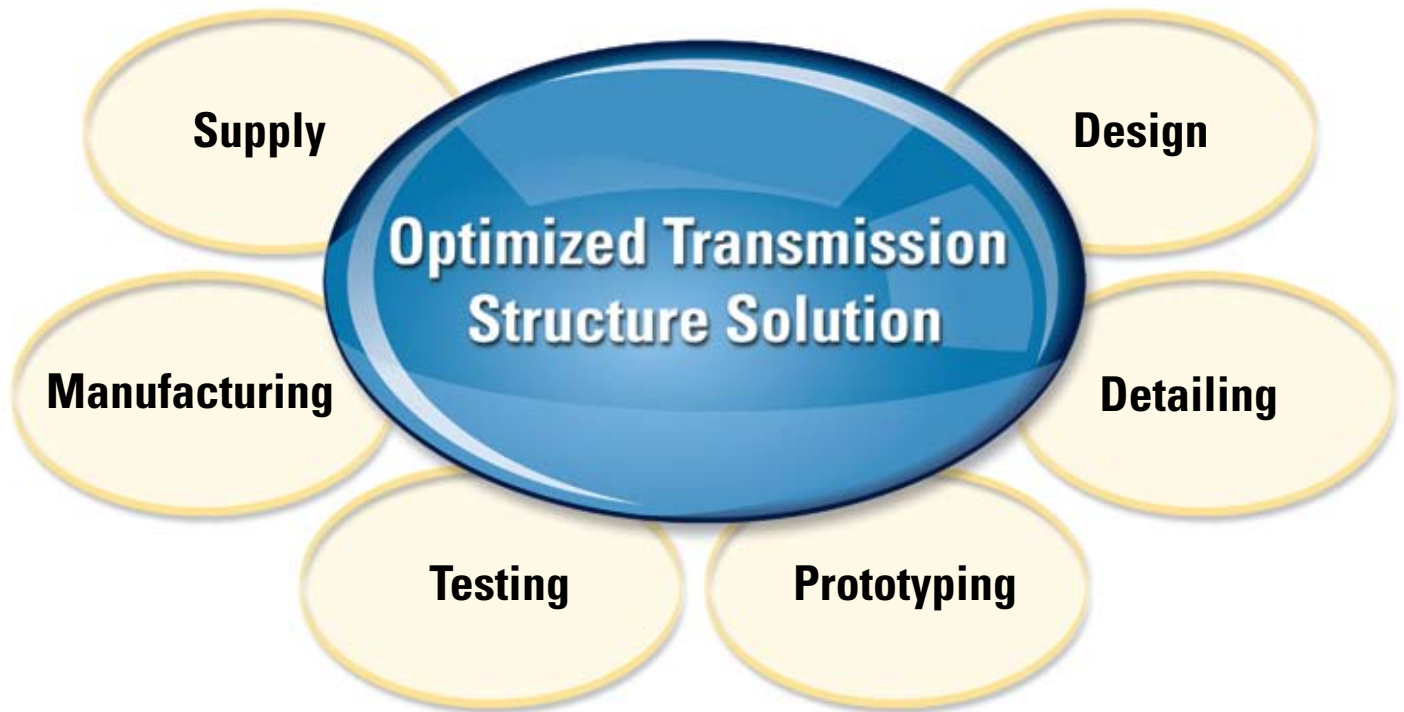
SAE Towers is uniquely positioned to address today's unprecedented demand for transmission structures.

Power grids are being rethought and rebuilt. The fast-growing requirement for transmission capacity is driving the rapid expansion of transmission lines across the Americas. Transmission infrastructure is being updated at an unprecedented pace.

Meeting the challenge of today's fast-growing demand for quality, reliability and timely delivery requires a unique combination of *capability*, *capacity* and *experience*. Whether the need is transmission structures for the most severe terrains and environments, state-of-the-art advanced design work, dependable tower testing, precision hardware or complete solutions covering the total process from engineering through supply, we have what it takes to get the job done.

It's all here!

All the capabilities, capacity and experience you're looking for. All in house. All in the Americas. All of it integrated and ready to deliver your Optimized Transmission Structure Solution.



SAE Towers

The largest steel lattice producer in the Americas providing Optimized Transmission Structure Solutions through world-class in-house design, detailing, prototyping, testing manufacturing and supply capabilities.

- Field-Fit Constructability
- Cost Effectiveness
- Weight Efficiency
- Shorter/Simpler Transaction Cycles
- Improved Live Line Maintainability
- Long Term Reliability

Capability

We are the industry's most complete in-house resource for transmission structures and related services. With key resources situated at strategic locations in the Americas, we are ready to provide the transmission structure products and services you require.



Towers



With over 100,000 tons of current production capacity, we produce guyed and self-supporting structures for single, double and multiple circuit configurations ranging in voltages from 69 kV to 765 kV. Drawing on an extensive database of tower designs going back more than 40 years, we are able to expertly design and manufacture towers for all terrains, environments and operating conditions. We are the go-to provider in the Americas for difficult river crossings, direct current structures and other complex challenges. All of our tower structures are optimized for weight efficiency and constructability in order to minimize total in-place cost.



Poles



From 69 kV up to 400 kV, we manufacture a wide array of types and configurations, including single circuit, double circuit and overhead-to-underground transitions, all with or without underbuilt circuit supports. We routinely provide reliable solutions for complex base plate specifications, special crossarm requirements and multiple accessory configurations. Over the years we have developed a well earned reputation in the challenging high-mast lighting pole sector, supplying poles in varying heights for diverse wind conditions and equipment requirements.



Substation Structures



We manufacture a variety of outdoor electrical substation structures, including lattice, tubular and wide-flange steel support designs. Experience and knowledge regarding the use of these structures are essential as fabrication often utilizes complex welding processes. From in-service deflection limits to special grounding requirements, we also understand the needs of transmission line termination structures.



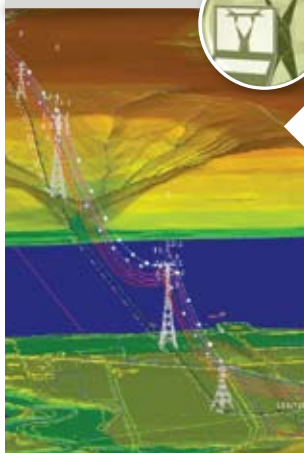
Hardware



We design a full range of insulator string components according to our customers' electrical and mechanical requirements, with a special regard for live line maintenance considerations. We utilize in-house ironworks and aluminum casting technology to produce line hardware for conductor and shield wire cable. Our hardware product family includes yokes, suspension and dead end clamps, joint splices, repair sleeves, armor rods, string components, corona rings and grounding connectors.



Engineering



State-of-the-art design technology systems coupled with the most experienced in-house staff of engineers in the Americas means that your design work—whether it's a discrete design job or part of a full-service Optimized Transmission Structure Solution—will be done right, on time and with an eye toward quality, reliability and constructability. We utilize the latest versions of PLS-CADD, PLS-POLE, TOWER, AutoCAD and other CAD software.



Tower Testing



Since 1970 we have tested more than 600 towers, generating reliable results for our customers. We perform full-scale prototype testing on a wide variety of structures—including poles, guyed towers and self-supporting towers—accommodating heights up to 246 feet and simulating various wind, ice and snow conditions. Total transverse loads of up to 620 kips and longitudinal loads of up to 490 kips can be applied simultaneously.

Capacity

High levels of output and reliability result from our quality-driven processes at our transmission structure manufacturing plants located in Monterrey, Mexico and Belo Horizonte, Brazil. These facilities encompass approximately 475,000 square feet and are capable of producing in excess of 100,000 tons annually. We perform all engineering design and detailing of lattice towers, steel poles and foundations in house. Both plants conform to AISC fabricating procedures and have achieved several coveted quality, safety and environmental certifications.

Additional sales, engineering design and customer service operations are located at corporate headquarters in Houston, Texas.

Both of our plants have earned the following certifications:

ISO 9001
ISO 14001
OHSAS 18001
BUREAU VERITAS
Certification



Quality Management Systems - ISO 9001
Environmental Management Systems - ISO 14001
Occupational Health & Safety Management Systems - OHSAS 18001

Monterrey, Mexico

Our steel tower and pole manufacturing plant in Mexico is located within easy access of US markets in Monterrey, Nuevo Leon, approximately 120 miles south of Laredo, Texas. This facility is capable of producing 35,000 tons of lattice towers and 6,500 tons of steel poles annually and has full access to global and US steel suppliers, allowing for ready availability of both structural angles and plate conforming to ASTM A36, ASTM A572, ASTM A588 and ASTM A871 specifications as well as other special grades as required.

Hot-dip galvanizing is carried out in house in one of the most modern facilities in North America. The main kettle measures 5 feet (w) x 8 feet (d) x 41 feet (l) and is supported by eight pickling tanks, one flux, one rinse, one quench and three dulling/deglaring tanks.



Multiple CNC angle punch lines at Monterrey plant



Manufacturing plant, Monterrey, Mexico

Belo Horizonte, Brazil

Our manufacturing plant in Brazil is located near Belo Horizonte in Betim, Minas Gerais. This plant is capable of producing 65,000 tons of lattice transmission towers. It was specifically designed employing a U-shaped production process flow in order to maximize efficiency and shorten total cycle time. The plant utilizes 13 CNC angle punch lines, six CNC plate machines, aluminum casting equipment and semi-automatic hot-dip galvanizing systems including dulling/deglaring tanks. The facility pioneered the application of a unique galvanizing process that utilizes a continuous conveyor to advance the material through a long narrow kettle.

Our transmission line hardware is developed and produced at the Belo Horizonte facility. Adjacent to this plant, we operate our full-scale tower testing station, the largest in the Americas.

Manufacturing plant, Belo Horizonte, Brazil



Multiple CNC angle punch lines at Belo Horizonte plant

Experience

SAE Towers' predecessor companies have been manufacturing transmission towers and building transmission lines since 1926, when it all started with the original SAE in Lecco, Italy. From the late '50s through the mid-'90s, SAE of Italy, followed by SBE of Brazil, supplied in excess of one million tons of tower steel to U.S. and Canadian utility companies. These companies have made an indelible mark on the industry, through the years having supplied towers that carried over 320,000 circuit miles of transmission lines, more than enough to circle the globe twelve times over.

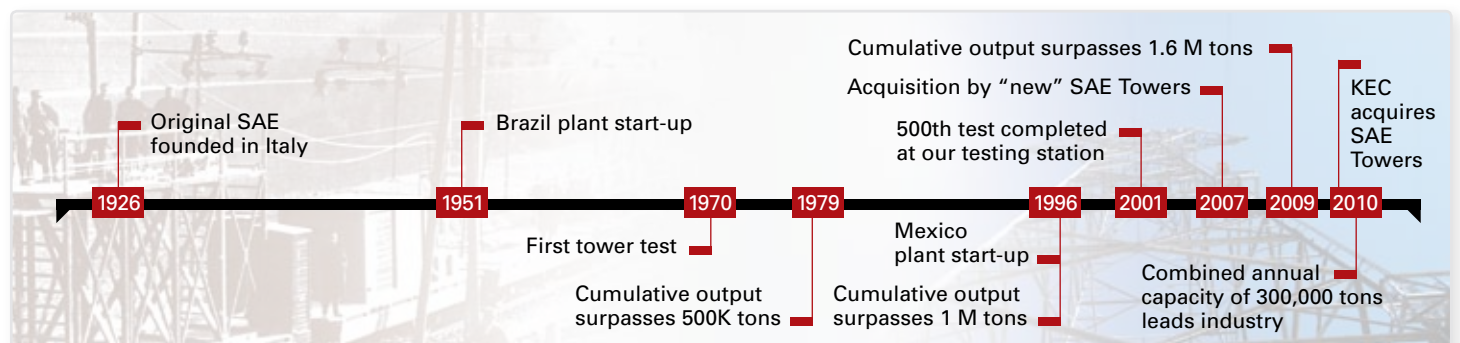
Today's SAE Towers was formed in late 2006 for the purchase of ABB, Ltd.'s steel lattice tower manufacturing divisions with operations and personnel in the United States, Mexico and Brazil.

Drawing on the industry's preeminent combination of capability, capacity and experience, we are determined to continue the tradition of excellence that began with the original SAE back in 1926. We are committed to the continuous improvement of the extensive capabilities of our state-of-the-art manufacturing facilities and the high levels of reliability that result from our quality-driven processes. Over the years we have developed a strong and defining tradition of customer service that shapes everything we do. Our proximity to our customers in the Americas is not only reflected in accelerated supply cycles but in the ways we understand the needs, preferences and business cultures of our customers.

Big or small, simple or complex—we make it easier for you to get your transmission structure project done on time and on budget. Our Optimized Transmission Structure Solution is your gateway to field-fit constructability, cost effectiveness, weight efficiency, shorter and simpler transaction cycles, improved live-line maintainability and long-term reliability.



More Than Eight Decades of Progress



SAE Towers is a group of operating companies incorporated in the United States, Mexico and Brazil consolidated through SAE Towers Holdings, LLC.

In September of 2010, SAE Towers was acquired by KEC International Limited, one of the largest providers of power transmission structures and related services in the world. This acquisition created the largest steel lattice tower manufacturer in the world with approximately 300,000 tons of annual production capacity. KEC is a leading member of RPG Enterprises, one of India's fastest growing business groups.

KEC has completed transmission line projects up to 1,200kV in more than 40 countries and is experienced in executing difficult projects in diverse terrains across the globe. Apart from transmission, KEC has a significant presence in power distribution, cables, telecom and railway infrastructure.

KEC is a listed company on major Indian stock exchanges and has annual revenues of approximately \$1 billion.

More information on KEC and RPG can be found at
www.kecrpg.com and www.rpggroup.com.

www.saetowers.com



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