

Transmission Structures

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



Quality. Reliability. Timely Delivery.

KEC



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

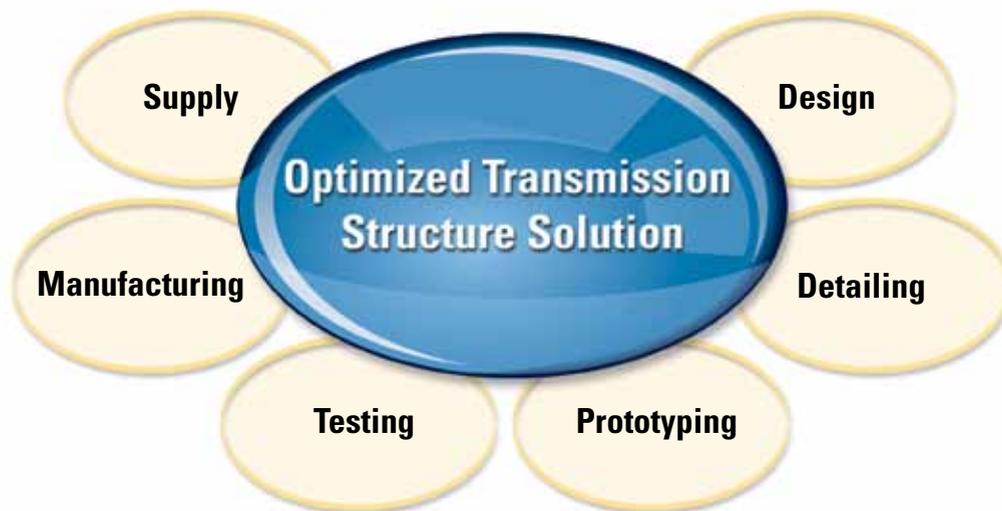
Power grids are being rethought and rebuilt. The fast-growing requirement for transmission capacity is driving the rapid expansion of transmission lines across the Americas. Transmission infrastructure is being updated at an unprecedented pace.

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.

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



SAE Towers is now part of KEC International Limited
274,000 tons of combined production capacity

KEC International is the world leader in power transmission. SAE Towers, the largest steel lattice tower producer in the Americas, is proud to be a vital part of KEC's growing global business. KEC's annual sales exceed \$1 billion (US) and the company employs more than 4,200 people worldwide, including more than 100 design experts. Well known as a major infrastructure Engineering, Procurement and Construction (EPC) company, KEC has successfully executed projects in 45 countries. The production capacity of its three factories in India exceeds 174,000 tons. KEC also operates three world-class tower testing facilities in India, including its facility in Nagpur, which is capable of testing towers up to 1,200 kV making it the highest capacity tower testing station in the world.

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 in the Americas—now augmented by 174,000 tons of additional capacity in India—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 a database of 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.



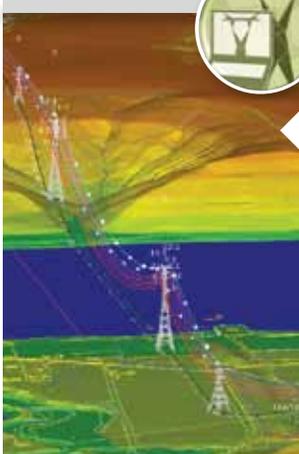
Hardware



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, bocad and other CAD software.



Tower Testing



We have tested more than 600 towers at our facility in Brazil. We perform full-scale prototype testing on a wide variety of structures—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. We now have three additional testing stations in India, including one capable of testing towers up to 1,200 kV.

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.

Our plants in the Americas 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

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

Now that we are part of KEC International, we have access to an additional 174,000 tons of production capacity from plants located at Nagpur, Jabalpur and Jaipur in India. With more than 274,000 tons of combined production capacity, we are one of the largest tower manufacturing companies in the world.

Our plants in India manufacture transmission towers, telecom towers and substation structures. They are certified to deliver world-class quality: ISO 9001, ISO 14001 and OHSAS 18001.

Monterrey, Mexico

Our steel lattice 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 and 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 14 CNC angle punch lines, six CNC plate machines, aluminum casting equipment and semi-automatic hot-dip galvanizing systems including dulling and 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 spun off from ABB, Ltd.'s steel lattice tower manufacturing divisions that had operations and personnel in the United States, Mexico and Brazil.

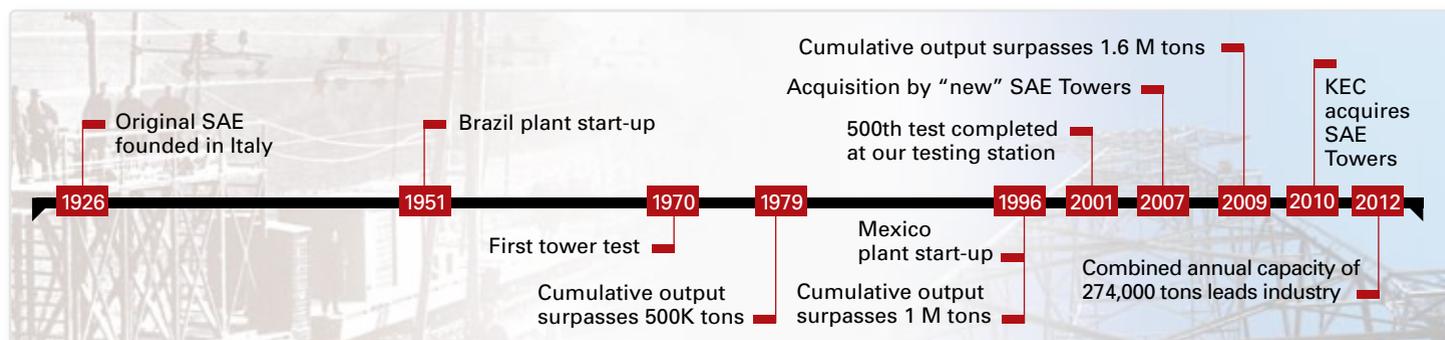
In 2010, SAE Towers became part of KEC International Limited, a highly respected public company with more than 60 years of experience in turnkey construction of power lines and a track record of having successfully executed transmission tower projects in 45 countries. KEC is a listed company on major Indian stock exchanges and has annual revenues of approximately \$1 billion (US).

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. This acquisition created one of the largest steel lattice tower manufacturers in the world with approximately 274,000 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 45 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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