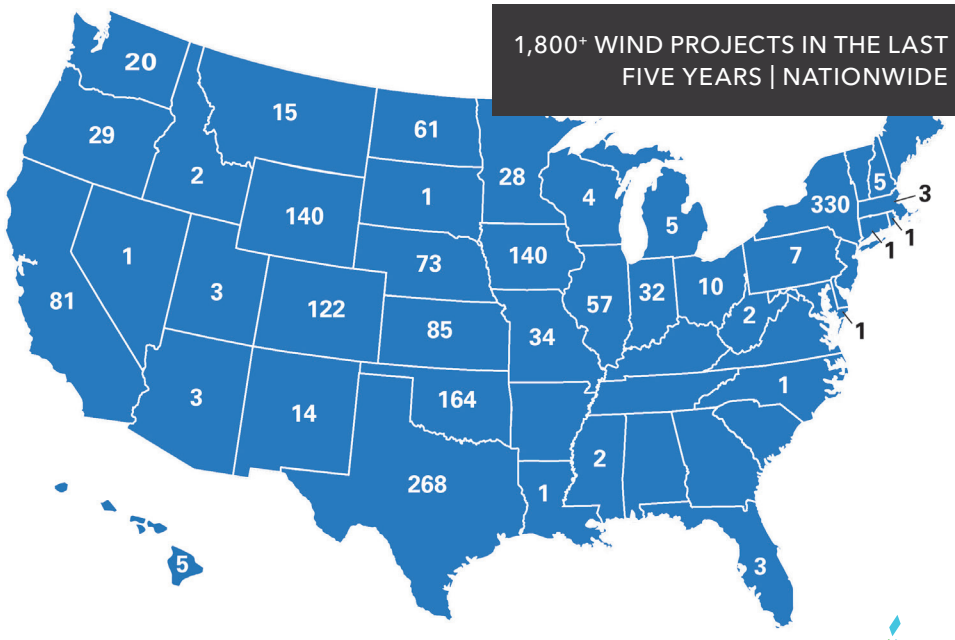
PONNEQUIN WIND TOWERS
WELD COUNTY, COLORADO



Power Generation and Transmission | Wind

GripTerra℠

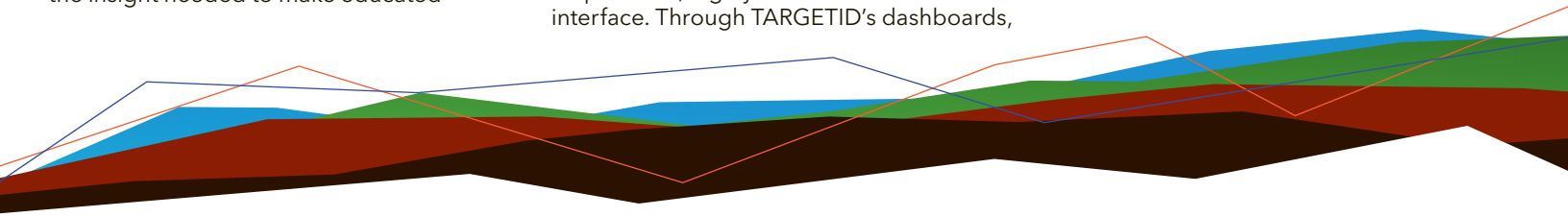
Wind energy is a growing renewable alternative for electricity generation. Terracon is uniquely qualified to help clients optimize wind energy project design and minimize risk, saving time and money. In the past five years, Terracon has supported more than 600 wind projects across 38 states. We understand the challenges of wind projects from early stage development to post-construction needs.

Development
Terracon has more than 50 years of historical projects and by using a GIS platform has retrieved more than 1,000,000 datapoints across the country, georeferenced each, and developed metadata that allows for easy and fast retrieval. Because of this, we can provide a virtual boring log with preliminary geotechnical data; and by pulling from more than 750 public databases, we can address the potential for subsurface contaminants, natural and cultural resources, wetlands/waters, and threatened and endangered species at your site. Using this data and the experience of local scientists and engineers, Terracon provides a report of anticipated conditions at a site called a Stage1. This report sets the stage for the development of a smart exploration and survey plan that focuses on areas of concern and develops the insight needed to make educated decisions in the early stages of project development, maximizing the allocation of development capital.

Design
Terracon's GripTerra℠ (GripTerra) family of wind turbine foundations are designed specifically to address today's 3 to 6 MW land-based turbines, utilizing earth-friendly designs which reduce both materials and construction time, offer re-powering and design life extension solutions, and reduce the overall carbon footprint of your next project. Terracon's GripTerra Pier Foundation offers greater optimization and sustainability with a new patent-pending collar design that is already supporting today's fleet of larger turbines. We also recognize the need for a foundation option that has the flexibility of being constructed in suboptimal geologic and hydrogeologic conditions. Terracon's patented GripTerra anchor foundations address those very needs.

Construction
During construction, our materials testing and inspection technicians utilize TARGETID, an unprecedented, technological advantage in the industry, which leverages geospatial information to collect, communicate, and report materials testing results through a map-centric, highly visual and interactive interface. Through TARGETID's dashboards, clients and project stakeholders can quickly and easily identify, assess, and address any deviations to keep the project on schedule.

Post-Construction
It is critical that a wind turbine system meets the manufacturer's specifications for rotational stiffness. Traditionally rotational stiffness is calculated using data collected from instruments placed at the tower base. Using this method, Terracon's experience showed a lack of correlation between the calculated rotational stiffness and observed conditions in foundations and surrounding soils. Partnering with GE Renewables, Terracon developed an award-winning, innovative approach utilizing an algorithm, which converts the accelerometer data already being collected at the nacelle from the time domain to the frequency domain. Once converted, we can identify the natural frequency and back calculate the rotational stiffness and overturning moment of the foundation system. The methodology, developed by Terracon, is faster, less expensive, and more accurate, can be used to evaluate wind turbine system performance for the purposes of re-powering, design life extension, and performance monitoring.



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BOLT CAGE INSTALLATION WW

FOUNDATION CONSTRUCTION

Why Terracon?

Resourceful. Terracon applies new processes, methodologies, and techniques to solve project challenges cost effectively. Our innovative tools and resources enable us to customize an approach to efficiently mitigate and prevent risks.

Responsive. Through our national network of offices, accredited laboratories, and exploration fleet, Terracon can act quickly to develop a customized approach to provide you the most cost-effective program to develop the right data for you.

Reliable. We deliver high-quality, expert soil and rock characterization using diverse exploration methods and software. This ensures the accurate and precise results you need to successfully mitigate risks.

"Terracon's innovative wind foundation design will literally change the industry. As the generators increase in size, towers increase height, and rotors increase in length, our foundation design makes the most sense. The cost savings and risk reduction are irrefutable."

-BLAIR LOFTIS, VICE PRESIDENT AND NATIONAL DIRECTOR OF POWER GENERATION & TRANSMISSION, TERRACON

ENR Rankings 2023

- #1 *Asbestos and Lead Abatement*
- #11 *Top 100 Pure Designers*
- #20 *Top 500 Design Firms*
- #44 *Top 150 Global Design Firms*
- #63 *Top 200 Environmental Firms*

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Renewable Energy | Terracon Anchor Foundation

Meeting Future Energy Demand Starts with Today's Projects

We recognize the need for a foundation option designed for not only today's technologies, but for tomorrow's larger turbines, longer rotors, and taller towers. Terracon's patented design addresses that very need.

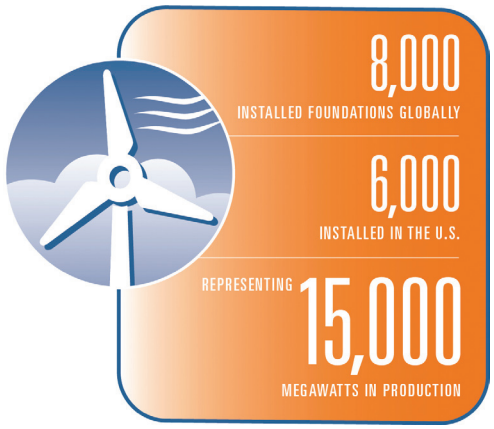
Supporting wind turbines utilizing a steel monopole tower, Terracon's Anchor Foundation is specifically created for today's renewable energy needs as well as tomorrow and beyond. This Terracon-owned, foundation consists of a large diameter, cast-in-place concrete annular cap with post-tensioned soil or rock anchors.

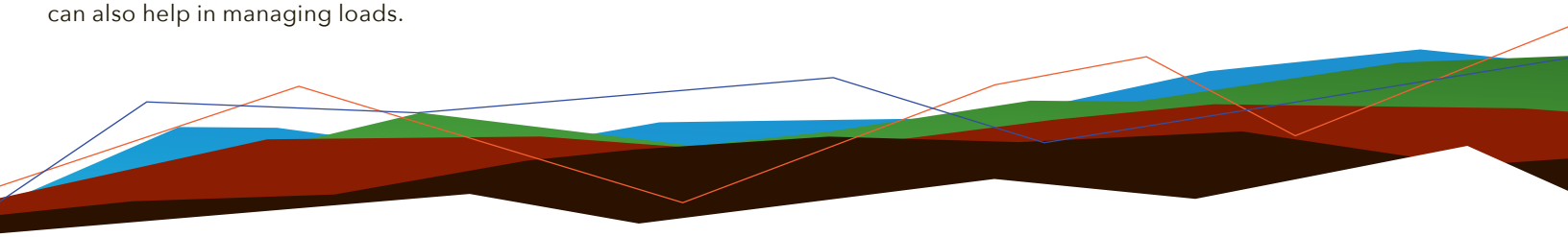
Designed in harmony, the cap and anchors can be optimized with respect to construction cost. The anchors are a significant component in resisting the loads imparted by the wind turbine and are designed to resist those loads by adjusting the quantity, diameter, and depth. Increasing the size of the cap can also help in managing loads.

Additionally, since anchor quantity and size are adjustable, and the cap can be constructed on the ground surface, this foundation is ideally suited for challenging sites with weak soils and high groundwater.

Terracon's Anchor Foundation Benefits

- Cost savings in earthwork and materials
- Increased service life by eliminating foundation fatigue
- Ability to repower keeping pace with technology





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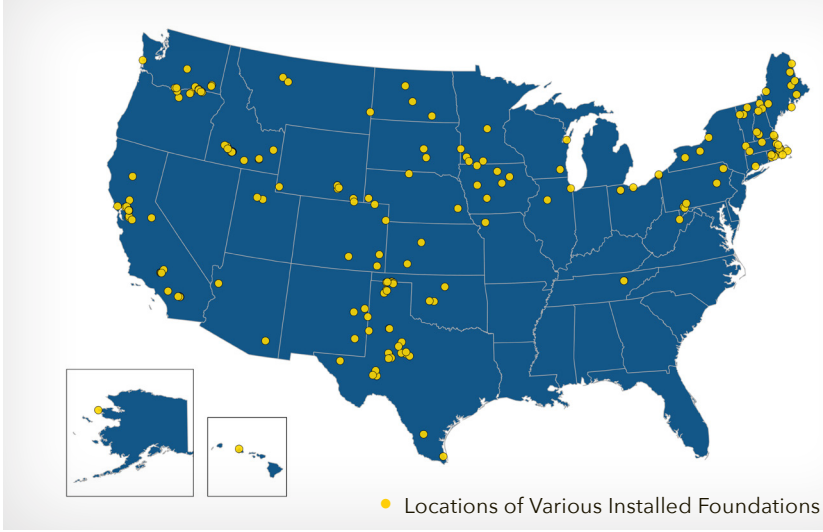
ANCHOR CONCRETE POUR
CONFIDENTIAL TEXAS LOCATION



Locations of Various Installed Foundations

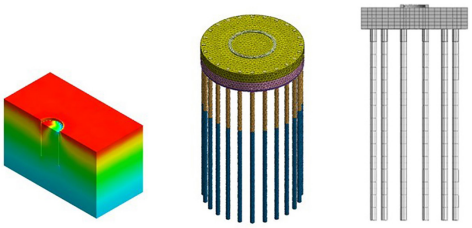
Why Terracon?

Resourceful. We can prevent or resolve a wide variety of issues through our extensive experience and in-depth knowledge of both traditional and new roof and enclosure systems and products.

Responsive. With our national network of offices, we can mobilize quickly to deliver practical solutions that optimize your building's systems performance with the goal to extend service life and reduce cost of ownership.

Reliable. We deliver consistent service and high quality through our proactive, collaborative approach, yielding systems that perform beyond expections and maximize your return on investment.

Component View of Finite Element Mesh



Terracon performs finite element analysis using Midas GTS NX and Plaxis 3D software to model the foundation systems and evaluate the geotechnical and structural capacities of these foundations to support the wind turbine load.

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GRIPTERRA PIER FOUNDATION

TERRACON'S GRIPTERRA CONSTRUCTION
CONFIDENTIAL CALIFORNIA LOCATION

Renewable Energy | GripTerra Pier Foundation

Answering Wind Power's Rapid Demand with New Technology and Sustainability
The wind market has seen a rapid change in recent years in that land-based turbines are generating more electricity through bigger turbines, taller towers, and longer rotors. All of this results in larger loads being imposed on the foundations. With foundations approaching 1,000 cubic yards of concrete, it is time for a new and smarter design.

Terracon's patent-pending GripTerra Pier Foundation now offers increased design and construction flexibility at the same time embracing the principals of sustainability that are key to the industries success. Enhanced by a new concrete collar, the GripTerra Pier Foundation is designed specifically to address today's 3 to 6 MW turbines.

The addition of the collar increases the resistance capacity of the pier by creating a zone of improved ground around the upper portion of the pier which reduces movement at the surface. Significant advantages of the GripTerra Pier Foundation include improved soil stability, a reduction in excavation, concrete, steel, and overall carbon footprint, and increased design flexibility. These advantages mean foundations for large turbines can be design and built at a significant cost savings and allow for economical re-powering and design life extension solutions.

GripTerra℠

Design Optimization
The collar with the foundation is designed to support wind turbines utilizing a steel monopole tower. The collar design further augments the resistance capacity of the pier by creating a zone of improved ground directly around the upper portion of the pier, reducing movement at the surface. Significant advantages of the new design are universal soil stability and flexibility. This design also creates the ability to repower/ rehabilitate existing towers with minimal modifications that extends the life of the original foundation saving considerable time and expense.

The Terracon-owned, patent-pending design is already in the market supporting today's larger turbines. This next generation turbine foundation better positions wind power in this highly competitive and increasing market and allows you to make informed decisions for your renewable energy sites.

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- #44 *Top 150 Global Design Firms*
- #63 *Top 200 Environmental Firms*

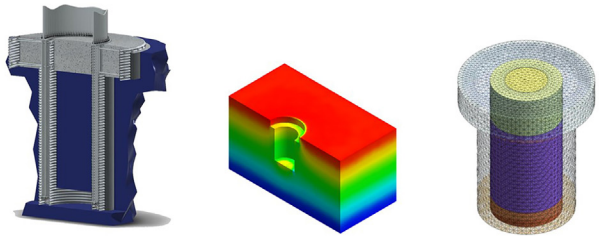
Why Terracon?

Resourceful. Terracon applies new processes, methodologies, and techniques to solve project challenges, saving time and expense. Our patent-pending collar design offers greater optimization and the ability to customize an approach to increase the service life of wind turbine foundations.

Responsive. Through our national network of offices, accredited laboratories, and exploration fleet, Terracon can act quickly to develop a customized approach for challenging ground surfaces, including weak soils and high groundwater.

Reliable. We deliver high-quality, expert soil and rock characterization using diverse exploration methods and software. This ensures the accurate and precise results you need to successfully mitigate risks.

Component View of Finite Element Mesh



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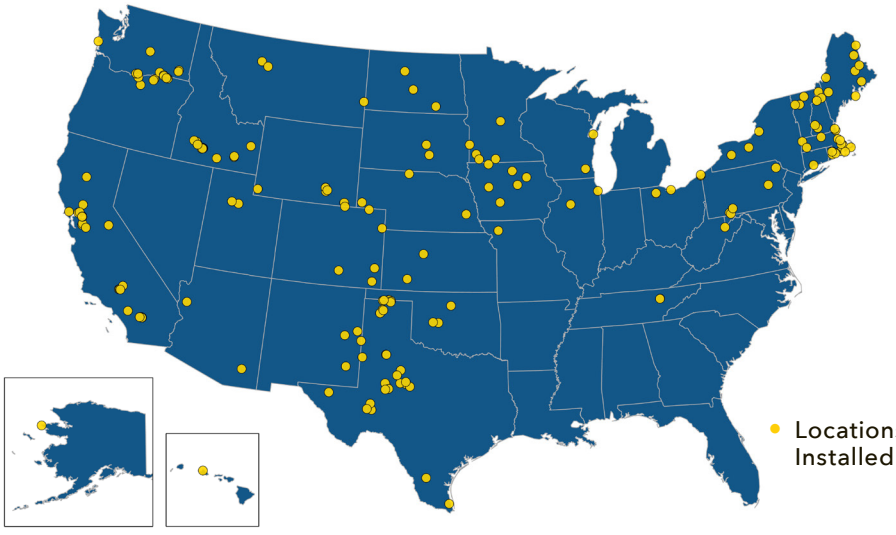

Locations of Various Installed Foundations

Services available in all 50 states

Offices Nationwide

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