Energy and Industrial

PT Freyssinet Total Technology



The Freyssinet Spirit sustainable solutions to meet client requirements around the world. Our one-of-a-kind specialist civil engineering expertise enables us to handle every challenge. Canada - Hibernia Offshore Platform Post-tensioning strand systems

PT Freyssinet Total Technology

With a steadfast commitment to excellence spanning nearly four decades, PT Freyssinet Total Technology has served as the distinguished representative of our esteemed parent company, the Soletanche Freyssinet Group, in Indonesia since 1983. Over this period, we have diligently completed over 2000 specialized projects, catering to the unique needs of public and private enterprises nationwide. Our unwavering dedication to employing cutting-edge Freyssinet Technologies has solidified our position as a prominent leader within the prestressing market and the specialized construction sector. Our enduring legacy of innovation and exceptional service is a testament to our unwavering pursuit of engineering excellence.

Energy and Industrial

Civil engineering is pivotal in constructing energy and industrial facilities, ensuring critical infrastructure safety, durability, and efficiency. PT Freyssinet Total Technology, a distinguished contractor specializing in post-tensioning, seismic isolation, geotechnical solutions, repair, and structural construction, exemplifies the indispensable link between civil engineering expertise and the intricate needs of the broader energy and industrial sectors.

Our Commitment to Excellence

We strive for excellence across all our activities - employee safety, international expansion, human resources, solution design and risk control. Excellence is the ethical cornerstone of our approach, underpinning the exacting way in which we carry out our projects. Customer satisfaction is the benchmark against which we measure our performance.

At forefront of

construction and structural repair

+50

6,330 €852 10,000

subsidiaries worldwide

people on 5 continents

million in revenue in 2022

projects per year in over 80

* Data from Freyssinet Group in 2022



Freyssinet is part of the Soletanche Freyssinet Group, which has an unrivalled reputation in the field of specialised civil engineering - a world leader in the soils, structures and nuclear sectors. Organised in geographical zones spanning five continents, we operate in more than 100 bases with strong local roots.



Our ultimate parent, Vinci Group, is a global player in concessions and construction, with over 185,000 employees and turnover exceeding €38 billion.

Post Tensioning System and Bar

Post-tensioning is a construction technique that involves applying tension to reinforce concrete structures after the concrete has been cast. Post-tensioning systems typically include high strength steel tendons or bars that are stressed after the concrete has been set, creating internal forces to enhance the structure's strength and durability.

Bearing and Expansion Joints:

- Bearing Joints: These are used to accommodate movement in structures, particularly in bridges. They allow for thermal expansion, contraction, and other dynamic forces.
- Expansion Joints: Similar to bearing joints, expansion joints provide flexibility to structures, allowing them to expand and contract without causing damage.

Seismic Protection Devices:

- LRB (Lead Rubber Bearing): LRB isolators use layers of rubber and lead to absorb and dissipate seismic energy, reducing the transmission of forces to the structure.
- HDRB (High-Damping Rubber Bearing): Like LRB, HDRB isolators use high-damping rubber to enhance energy dissipation during seismic events.
- Pendulum Bearing: Pendulum bearings allow controlled movement in response to seismic forces. They help protect structures
- Dampers: Structural dampers, such as tuned mass dampers or viscous dampers, absorb and dissipate energy, reducing the impact of seismic forces on buildings.

Lifting Services:

Heavy Lifting and Lowering: Specialized lifting services involve using heavy-duty equipment and techniques to lift and lower large and heavy structural components, facilitating construction and maintenance operations.

Slope Strengthening:

- Ground Anchor: Ground anchors stabilize slopes, retaining walls, and other structures. They involve drilling into the soil and installing anchors to resist lateral forces and prevent soil
- Shotcrete: Shotcrete, or sprayed concrete, is a technique used for slope stabilization. It involves projecting concrete onto a surface at high velocity, providing structural reinforcement.
- Soil Nailing: Soil nailing is a method where steel bars or other reinforcing elements are inserted into a slope or excavation to stabilize the soil and prevent erosion.

Structural Repair

- External Prestressed: External prestressed reinforcement involves applying additional tension to a structure using external tendons or cables to enhance its load-carrying capacity.
- FRP (Fiber Reinforced Polymer): FRP materials, such as carbon or glass fiber composites, are used for structural repair and strengthening, providing lightweight and corrosion-resistant alternatives.
- Micropiles: Applied for foundation support and slope stabilization, particularly in areas with limited access or challenging ground conditions.
- Re-alignment by jacking and sliding : re-alignment through jacking and sliding involves precision techniques to adjust structures, ensuring optimal alignment and functionality without the need for extensive reconstruction.

Cable Stay Structure

A cable-stayed structure is a bridge or building where cables support the structure. The cables are attached to towers or supporting structures, providing stability and load distribution.

MSE Wall (Reinforced Earth Wall)

Reinforced Earth Wall: Mechanically Stabilized Earth (MSE) walls use supporting elements such as geogrids to stabilize and strengthen soil structures. They are commonly used in retaining walls and bridge abutments.























Denmark - Dong Siri



Our Solution for Oil and Gas

Post Tensioning

Post-Tensioning Systems: Used for reinforcing concrete structures in various applications, including the construction of oil and gas processing plants, pipelines, and storage facilities.

Pre-Stressed Concrete Components: Components like pre-stressed concrete beams and girders may be employed in constructing bridges, walkways, and other structures within oil and gas facilities.

Seismic Protection Devices:

Base Isolators: Base isolators, such as lead rubber bearings (LRB) or high-damping rubber bearings (HDRB), can protect structures from seismic forces. They absorb and dissipate energy, reducing the transmission of parties to the structure.

Seismic Dampers: Structural dampers, such as tuned mass dampers or viscous dampers, are employed to mitigate the impact of seismic forces on structures within the oil and gas sector.

Pendulum Bearings: Pendulum bearings provide controlled movement during seismic events, helping to dissipate energy and protect critical infrastructure.

Geotechnical Solutions:

Ground Anchors: Utilized for stabilizing foundations, slopes, and retaining walls in challenging soil conditions. They may be employed in constructing infrastructure, such as oil and gas processing plants.

Soil Nailing: Used for stabilizing slopes, preventing erosion, and reinforcing soil in areas where retaining structures are needed.

Shotcrete: Shotcrete, a mix of cement, sand, and water applied at high velocity, is essential in oil and gas for cost-effective stabilization and reinforcement of subsurface structures amid geological challenges.

Structural Repair:

Carbon Fiber Reinforcement: Carbon fiber reinforcement is used for repairing and strengthening concrete structures, including columns, beams, and other components within oil and gas facilities.

FRP (Fiber Reinforced Polymer): FRP materials, such as carbon or glass fiber composites, can be used for structural repair and strengthening, providing resistance to corrosion in aggressive environments.

Concrete Repair Products: Various repair products, including highstrength concrete, epoxy injections, and polymer-modified mortars, may be employed to rehabilitate deteriorated concrete structures



Pertamina Balongan Pipeline Indonesia | External Post-Tensioning



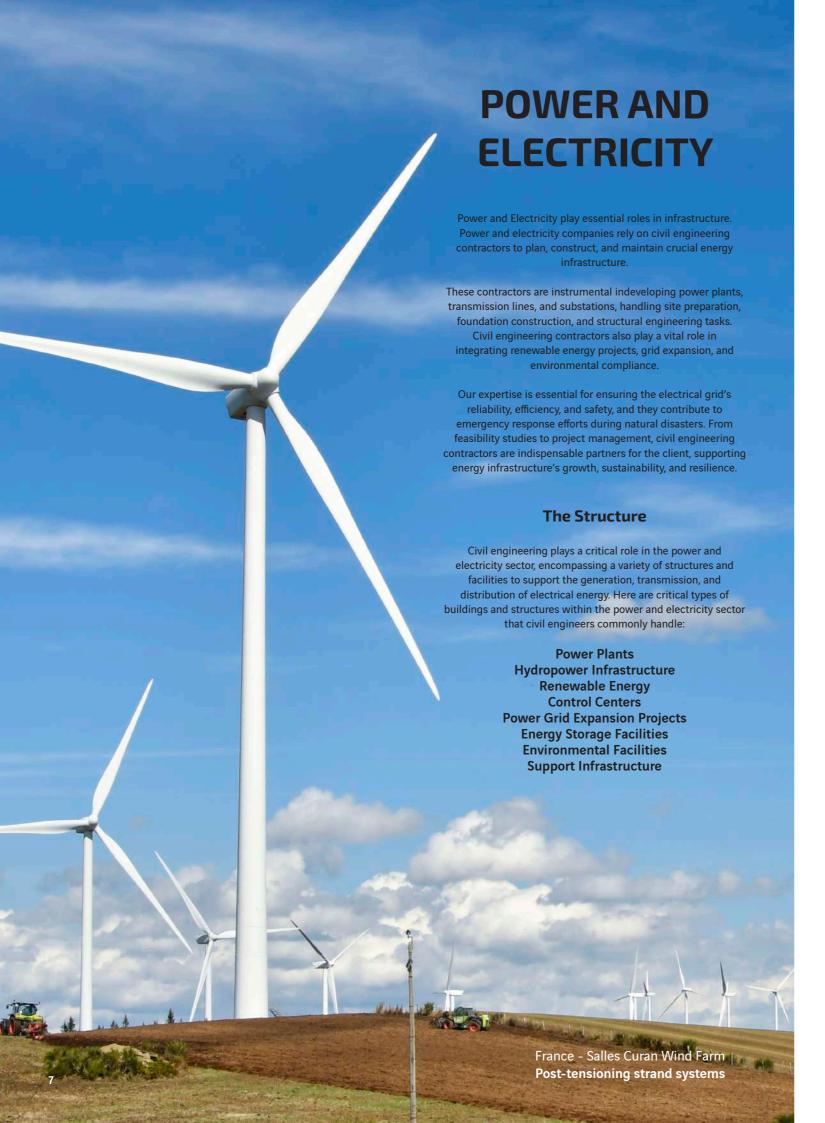
Jangkrik Complex Gas Extraction Indonesia | Bearings



Donggi Senoro LNG Tank Indonesia | Post-tensioning strand systems



LNG Artic Mourmansk Russia | Bearings



Our Solution for Power and Electrictity

Post Tensioning

Post-Tensioning Systems: Used to reinforce concrete structures in power plants, transmission towers, and substations. Post-tensioning systems provide additional strength and durability to withstand heavy loads and dynamic forces.

Pre-Stressed Concrete Components: Components like pre-stressed concrete beams, girders, and piles are utilized in constructing power plant structures, bridges, and other elements within the power and electricity sector.

Geotechnical Solutions

Ground Anchors: Applied for stabilizing foundations of power plants, transmission towers, and other infrastructure. Ground anchors counteract lateral forces and enhance stability in various soil conditions.

Soil Nailing: Employed for slope stabilization and preventing erosion around power infrastructure, ensuring the integrity of dams and cut slopes.

Shotcrete: Shotcrete, a mix of cement, sand, and water applied at high velocity, is essential in oil and gas for cost-effective stabilization and reinforcement of subsurface structures amid geological challenges.

Structural Repair

Carbon Fiber Reinforcement: Used for repairing and strengthening concrete structures in power plants, substations, and other facilities. Carbon fiber reinforcement provides high-strength, corrosion-resistant solutions

FRP (Fiber Reinforced Polymer): Applied for structural repair and strengthening of components such as beams, columns, and walls in the power and electricity sector.

Seismic Protection Devices

Base Isolators: Protect critical structures from seismic forces by isolating them from ground motion. Devices like lead rubber bearings (LRB) or high-damping rubber bearings (HDRB) absorb and dissipate seismic energy.

Seismic Dampers: Installed to reduce the impact of seismic forces on structures. Various dampers, including tuned mass and viscous dampers, enhance seismic performance.

Pendulum Bearings: Provide controlled movement during seismic events, dissipating energy and protecting structures such as power plants and substations.



Trairi Wind FarmBrazil | Heavy lifting and handling Post-tensioning strand systems Precast segmental erection methods



Salles Curan Wind FarmFrance | Post-tensioning strand systems



Trairi Wind FarmBrazil | Heavy lifting and handling Post-tensioning strand systems Precast segmental erection methods



Our Solution for Mining

Post Tensioning

Post-Tensioning Systems: Used to reinforce concrete structures in mining infrastructure, including shafts, processing plants, and support structures. Post-tensioning enhances structural integrity and load-bearing capacity

Reinforce Earth

Mechanically Stabilized Earth (MSE) Walls: Constructed using reinforced earth technology, MSE walls stabilize embankments and cut slopes in mining sites.

Reinforced Soil Structures: Utilized for constructing retaining walls, abutments, and other critical structures, providing stability and load-bearing capacity

Structural Repair

Carbon Fiber Reinforcement: Utilized for repairing and strengthening concrete structures within mining operations, including processing plants, tunnels, and support systems.

FRP (Fiber Reinforced Polymer): Applied for structural repair and strengthening to provide corrosion-resistant solutions in aggressive mining environments.

Seismic Protection Devices

Base Isolators (LRB, HDRB): Implemented to protect critical structures from seismic forces. Lead rubber bearings (LRB) and high-damping rubber bearings (HDRB) help absorb and dissipate seismic energy.

Seismic Dampers: Used to mitigate seismic forces' impact on mining industry structures, enhancing overall seismic performance.

Pendulum Bearings: Provide controlled movement during seismic events, dissipate energy, and safeguard critical mining infrastructure.

Geotechnical Solutions

Ground Anchors: Applied for stabilizing slopes, retaining walls, and mine shafts, providing essential support in challenging geological conditions.

Soil Nailing: Used for slope stabilization, preventing erosion around mining infrastructure, and reinforcing soil in areas where retaining structures are necessary.

Shotcrete: Shotcrete, a mix of cement, sand, and water applied at high velocity, is essential in oil and gas for cost-effective stabilization and reinforcement of subsurface structures amid geological challenges.



Martabe Gold Mine Indonesia | Reinforced Earth MSE Wall



Kooragang & Carrington Coal Terminal Wharf Australia | Repair



Curragh Mine Thickener Tank Australia | Repair



CSA Mine Cobar - Copper Ore Bin Remediation Australia | Repair



Our Solution for Manufacturing

Post Tensioning

Post-Tensioning Systems: Used to enhance the strength and load bearing capacity of manufacturing plant structures, including floor slabs, foundations, and support beams.

Geotechnical Solutions

Ground Improvement Techniques: Geotechnical engineering methods such as dynamic compaction or vibro compaction can be applied to improve the bearing capacity of the soil beneath manufacturing

Soil Stabilization: Techniques such as soil cement mixing can stabilize the soil, providing a solid foundation for manufacturing structures.

Structural Repair

Carbon Fiber Reinforcement: Applied for repairing and strengthening concrete structures within manufacturing plants, including columns, beams, and floor slabs.

Structural Health Monitoring: Continuous monitoring systems help detect and assess structural issues in real time, allowing for timely repairs and maintenance.

Seismic Protection Devices

Base Isolators (LRB, HDRB): Implemented to protect manufacturing structures from seismic forces. Lead rubber bearings (LRB) and high-damping rubber bearings (HDRB) absorb and dissipate seismic

Seismic Dampers: Used to mitigate the impact of seismic forces on manufacturing facilities, enhancing overall seismic performance.

Pendulum Bearings: Provide controlled movement during seismic events, dissipate energy, and safeguard critical manufacturing infrastructure.

Geotechnical Solutions

Ground Anchors: Applied for stabilizing slopes, retaining walls, and mine shafts, providing essential support in challenging geological

Soil Nailing: Used for slope stabilization, preventing erosion around mining infrastructure, and reinforcing soil in areas where retaining structures are necessary.

Shotcrete: Shotcrete, a mix of cement, sand, and water applied at high velocity, is essential in oil and gas for cost-effective stabilization and reinforcement of subsurface structures amid geological challenges.



Logistic Center of FMCG Company France | Freyssibar and prestressing bars



Townsville Sugar Terminal Australia | Post-tensioning bar systems



PT Paramasuka Gupita (Wings Group Factory Indonesia | Repair



Unilever Indonesia Headquarter Indonesia | Post-tensioning bar systems





SMELTER

In smelter facilities, civil engineering contractors, particularly those offering products and services like PT Freyssinet Total Technology, can contribute to constructing and maintaining various critical structures. Here are some types of structures within smelter facilities where civil engineering expertise, along with Freyssinet products and services, can be applied:

Furnace Structures, Chimneys and Stacks, Cooling Towers, Processing Plant Structures, Material Handling Structures, Support Structures for Equipment, Foundations for Tanks and Silos, Structural Health Monitoring Systems, Safety Barriers and Enclosures, Environmental Control Structures.

Civil engineering solutions are crucial for smelter infrastructure to ensure structures' stability, safety, and longevity. Here are specific prestressing, geotechnical, structural repair, seismic protection devices, and reinforced earth products that can be applied in the context of smelter facilities:

Prestressing:

 Post-Tensioning Systems: Applied to reinforce foundations, beams, and other structural elements of smelter facilities, providing additional strength and load-bearing capacity.

Geotechnical Solutions:

- Ground Anchors: Used for stabilizing foundations, retaining walls, and other structures in areas with challenging geological conditions commonly found in smelter sites.
- Micropiles: Applied for foundation support and slope stabilization, particularly in areas with limited access or challenging ground conditions.

Structural Repair:

- Carbon Fiber Reinforcement: Utilized for repairing and strengthening concrete structures within smelter facilities, including columns, beams, and slabs.
- Epoxy Injection: Applied for repairing cracks and enhancing the structural integrity of concrete elements affected by corrosion or other forms of deterioration.

Seismic Protection Devices:

- Base Isolators (LRB, HDRB): Implemented to protect critical structures from seismic forces. Lead rubber bearings (LRB) and high-damping rubber bearings (HDRB) absorb and dissipate seismic energy.
- Seismic Dampers: Used to mitigate the impact of seismic forces on smelter infrastructure, enhancing overall seismic performance
- Pendulum Bearings: Provide controlled movement during seismic events, dissipating energy and safeguarding critical structures in the event of an earthquake.

Reinforced Earth Products:

- Mechanically Stabilized Earth (MSE) Walls: Constructed using reinforced earth technology, MSE walls stabilize embankments and cut slopes around smelter facilities.
- Reinforced Soil Structures: Utilized for constructing retaining walls, abutments, and other critical structures, providing stability and load-bearing capacity.

REFINERY

Various structures benefit from specialized engineering solutions to ensure durability, safety, and operational efficiency within arefinery project. Here are specific types of systems where prestressing, seismic isolation, bearing, expansion joint, geotechnical, structural repair, and reinforced earth solutions play a crucial role:

Distillation Columns, Storage Tanks, Pipelines and Piping Systems, Processing Units and Reactors, Bridges and Walkways, Foundations and Footings, Control Rooms and Administrative Buildings, and Retaining Walls.

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Reinforced Earth Products:

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Our Solution for Silo

For silo construction, a range of civil engineering solutions can be applied to ensure stability, durability, and seismic resilience. Here are specific products and services in prestressing, geotechnical engineering, structural repair, seismic protection, and reinforced earth that can be utilized for silo buildings:

Post Tensioning

Post-Tensioning Systems: Applied to enhance the load-bearing capacity of silo structures, particularly in large-scale or high-capacity silos.

Reinforced Earth

Mechanically Stabilized Earth (MSE) Walls: Constructed using reinforced earth technology, MSE walls provide stability to embankments around silo buildings.

Reinforced Soil Structures: Utilized for constructing retaining walls, abutments, and other critical structures, providing stability and load-bearing capacity.

Structural Repair

Carbon Fiber Reinforcement: Used to repair and strengthen concrete elements in the silo that may experience wear, corrosion, or other forms of deterioration.

Concrete Jacketing: Applied to reinforce and repair columns and other structural components, extending the life of the silo.

Seismic Protection Devices

Base Isolators (LRB, HDRB): Implemented to protect silo structures from seismic forces. Lead rubber bearings (LRB) and high damping rubber bearings (HDRB) absorb and dissipate seismic energy.

Seismic Dampers: Used to mitigate the impact of seismic forces on silo buildings, enhancing overall seismic performance.

Geotechnical Solutions

Ground Anchors: Ideal for stabilizing the foundation and controlling lateral forces in silo construction, ensuring long-term structural integrity.

Soil Nailing: Effective in preventing soil erosion, supporting excavations, and reinforcing soil in proximity to the silo structure.

Shotcrete: Applied to strengthen and protect soil slopes, retaining walls, or existing surfaces, offering an efficient solution for soil stabilization around the silo



Silo Semen Tuban Indonesia | Post-tensioning strand systems



Silo Ciwandan Indonesia | Post-tensioning strand systems



Silo Aceh Indonesia | Post-tensioning strand systems



Golden Bay Cement SiloNew Zealand | Repair and additional post-tensioning



A breeding ground for talent

To meet the needs created by our strong growth on five continents, we pay special attention to our recruitment policy. As a partner of a large number of universities around the world, every year we offer internships and work-study contracts and host several people enrolled in the Volontaires internationaux en entreprise (VIE) programme. We make a point of promoting long-term employment of graduates and experienced people, alike primarily with a technical educational background

Supporting skills

Training, supporting and promoting Freyssinet's people is a priority at the company and helps drive our expansion. Our relationship with our employees is focused on their long-term employability, which we foster in our dedicated training centres. The Freyssinet Academy for development of skills in our business activities, the Foreva Team for repair specialities and PM+ for overall project management are just a few examples of our overall skills management training.

Mobility for job promotion

Geographical mobility, especially among our supervisory staff, makes our teams responsive and adaptable. This gives them prospects for promotion based on the development of skills and empowerment

Promoting equal opportunities

Freyssinet promotes integration, diversity and equal opportunities. Across all the countries in which we have locations, the company cultivates across-the-board gender equality in our teams. We also support our employees' volunteer work on behalf of local development and education.

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Beyond Certification

PT Freyssinet Total Technology is dedicated to operating in Indonesia, aligning with local requirements $while \ maintaining \ international \ quality \ standards. \ We \ are \ delighted \ to \ announce \ our \ accomplishment$ of the 3 Tingkat Komponen Dalam Negeri (TKDN), also widely recognized as the Domestic Component Level Certification, a notable achievement that underscores our commitment to fostering Indonesia's local content development. In addition, we have received certifications for ISO 9001 and ISO 45001, further highlighting our dedication to excellence in both quality management and occupational health and safety. These certifications showcase our unwavering commitment to delivering top-tier solutions while contributing to the growth and sustainability of Indonesia's industrial landscape.

Domestic Component Level Certification



Lead Rubber Bearing D850 - D950





Steel Reinforced Elastomer Joint SFX 300

International Certification



✓ ISO 45001:2018

The international standard occupational health and safety (OHS) management



Certification

ISO 9001:2015 The international standard for quality management systems.

SETTING THE WORLD'S BENCHMARK IN SPECIALIST CIVIL ENGINEERING FOR CONSTRUCTION AND REPAIR





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