TERRE ARMEE

Leaders in Innovation and Technology

RETAIN / CROSS / PROTECT / STRENGTHEN

CORPORATE PROFILE

WORLD'S TALLEST REINFORCED EARTH® STRUCTURE

102.8m

TINDHARIA, WEST BENGAL, INDIA









Integrating Innovative Engineering Solutions

Our technical solutions are defined by four functions corresponding to the application: Retain, Cross, Protect, Strengthen. **Retain:** As the inventors of Reinforced Earth® and leaders in the soil reinforcement sector, we offer solutions for all retaining projects. **Cross:** Our customised crossing solutions are used to build bridge abutments, bridges and tunnels under backfill. **Protect:** Our solutions help protect people, infrastructure, and the environment from natural and industrial hazards. **Strengthen:** Our engineered solutions help improve foundation of soil using high strength, low modulus proprietary geosynthetics for basal reinforcement applications, bi-axial geogrids and woven geotextiles for ground stabilization applications alongside improvement of drainage systems with low creep, low intrusion and low deformation drainage geocomposites.

About the Group

SOLETANCHE FREYSSINET

Soletanche Freyssinet is the world leader in soil, structural and nuclear engineering.

The Group brings together an unparalleled array of construction and engineering expertise and brands – Soletanche Bachy, Menard, Terre Armée, Freyssinet, Nuvia and Sixense – that provide technical excellence to boost the performance and durability of structures. Operating in about 100 countries with a workforce of 22,100+ employees (2021), the Group earned a revenue of €3.634 billion in 2021.

22,100 employees (2021)

100 countries

6 companies

3.634 billion € turnover in 2021

TERRE ARMEE

Since the pioneering and significant invention of the modern Reinforced Earth® technique by its inventor Henry Vidal in early sixties, Terre Armée has forged an unrivalled level of expertise and experience in reinforced backfill applications and soil-structure interaction. Over the last 50 years, Terre Armée has been setting the industry gold standard in reinforced earth structures and has played an active role in over 60,000 projects in 5 continents. The company is committed to pursuing a policy of continual improvement in a bid to achieve operational excellence.

FREYSSINET

Founded over 70 years ago by Eugène Freyssinet, the inventor of prestressing, Freyssinet brings together an inimitable range of skills in the specialist civil engineering sector, offering integrated technical solutions in the fields of new structure construction and structural repair. Freyssinet is involved in numerous projects across five continents, making it the world leader in its areas of specialization: prestressing, cable-stayed structures, construction methods, structural accessories, structural repair and structural maintenance / upgradation.

NUVIA

Nuvia represents a unique approach and has a 50-year-old heritage. It can trace its roots to the beginning of the French and British nuclear industries. The Group has grown organically and through mergers and acquisitions. Pioneering work in construction, engineering, energy, nuclear R&D, design, build, operations, radiation protection and decommissioning has been undertaken, always with a strong emphasis on safety, quality and sustainability.

MENARD

Menard brings its extensive experience to projects in the planning and design development phase to provide optimal ground improvement and stabilisation solutions. Menard's expertise lies in ground improvement, specialist foundations, all methods of grouting, and environmental remediation; and has facilitated the delivery of cost effective solutions for the construction of a large range of structures. Menard's scope includes small to large infrastructure based solutions across a broad range of market segments for private and public stakeholders.

SOLETANCHE BACHY

Soletanche Bachy specializes in geotechnical and civil engineering. Specialists have mastered the full range of geotechnical engineering processes, special foundations, underground works, ground improvement and pollution treatment and control. They serve a wide range of clients in the public and private sectors: central and local governments, industrial, general building and civil engineering contractors. With this expertise, Soletanche Bachy has always helped customers resolve their ground problems and build their foundations and underground structures.

SIXENSE

Soletanche Freyssinet group launched its sixth branch SIXENSE. The new entity brings together 10 companies with a current combined workforce of 600 employees and operations in 20 countries. It specializes in digital services and solutions for structures, soils and the environment. It is structured in three areas of expertise: Engineering, Digital and Technologies. It helps customers to optimize design, understand structural behaviour and support decision making throughout the infrastructure life cycle.

Vision

Our vision is our raison d'être (reason for our existence), the essential dream that we aspire to make reality.

We aspire to attain a Technical Leadership position in the civil construction industry by integrating innovative engineering solutions in the fields of Retaining Structures; Crossing structures; Preventing and Protecting infrastructures; and Soil Reinforcement and Ground Stabilization.

Keeping our pioneering spirit alive, we continually create, design, and supply innovative technologies to meet the requirements of our customers and end users for various engineering and market sectors.

We are actively working towards a sustainable future by implementing definitive actions to reduce carbon emissions, optimize and preserve natural resources; and nevertheless, protect the civilization in the long run.

We provide economical and sustainable solutions with a strong commitment towards creating a legacy of "Excellence" in engineering services.

Mission

At Terre Armée India, we are determined to provide quality service to our esteemed customers. To fulfil this mission of creating a distinct identity, the Terre Armée India team affirms what we stand for.

To create a distinct identity, we are determined to provide quality and responsive services to our esteemed customers.

As dependable and steadfast performers we seek to consistently provide our customers with high technical expertise in engineering, products, and methods.

For our stakeholders and shareholders, we aspire to be identifi¬ed as a customer-centric, well-diversified, successfully growing and professionally managed company.

Terre Armée India offers solutions that helps protect the environment while reducing the carbon footprint in projects. Through our engineering expertise and sustainable technologies, we protect human settlements, wildlife and nature, public assets and infrastructure against natural disasters and industrial risks.

We continuously strive to be a coveted and thriving institution to share work and life experiences by procreating value and respect, providing equal opportunity and solidarity to all our employees, and by creating a robust health and safety culture in the organization.

Ethos

Terre Armée India's ethos, spirit and management policies strongly focus on protecting and developing the organization's most valued asset – its people. Terre Armée's men and women are passionate about technology, build outstanding relationships with customers and share an uncompromising safety culture.

Terre Armée's people are driven by their team spirit, quest for excellence and determination to take innovation to the next level together, around the world.

A Community of Experts

The men and women at Terre Armée, engineer best-in-class solutions to deliver project success, while optimising costs and timeframes, and stop at nothing to honour our commitments to customers.

Our community's strength is in its ability to harness its wealth of local experiences. The engineers and technical staff at each of our design offices can tap into the experience that every Terre Armée subsidiary has built over the years.

Our in-house network of experts support them with purpose-designed solutions for their specific requirements.

Shared Values

Terre Armée employs local talent and we pool this geographic and cultural diversity while sharing the same core values, namely safety, innovation and excellence. Terre Armée's culture is steaped in safety. Our ability to take innovation to the next level is one of the hallmarks in our design offices; it defines every project we take on and underpins our pride in belonging Terre Armée. And our uncompromising pursuit of excellence directs every team's every decision and action.

Sharpening Skills

Training the teams across its business lines is one of Terre Armée's top priorities. Investing in our people is our way of empowering them while constantly shaping our skills around our customers' evolving wants and needs.

Our training programmes are designed to upskill our community of experts and take Terre Armée's quest for excellence to new heights.

Our Policies

Occupational Health & Safety

It is our company policy to value the health and safety of our people in offices and job sites. Each employee has the right to walk away from an unsafe or dangerous situation, even if this requires compromise with a production target. All sites conduct and record pre-start meetings and tool box talks, and report unsafe situations. The company uses all necessary resources to train and develop its employees towards a strong health and safety culture. Our organization is ISO:45001:2018 certified and has a Health and Safety Policy that reinforces in all its employees the importance of ergonomics, work-life balance, stress management, and prevention of harassment and violence.

We are fully committed to realizing our goal of a zero-accident rate; our regulations, our company rules and our in-house tools guarantee that we will achieve this ambition.

Excellence in Client Care

Terre Armée India believes in striving for excellence in client care. Our primary objective is to earn our client's respect, gain our client's trust and forge a robust and long-term relationship.

Our mandate:

- Know and respect your client
- Provide an image of excellence
- Build a relationship with the client
- Promote clear communication
- Be a solution provider
- Deliver your commitments
- Maintain a positive and controlled attitude at all time

Quality Management System

Terre Armée India steadily operates on its fundamental principle of providing quality products and services to its customers. Our ISO 9001:2015 certification signifies our approach and commitment towards quality. Terre Armée India is a premier quality system certified organization for structural design, procurement and supervision of installation for Mechanically Stabilized Earth and Prefabricated Concrete Arch structures for overpasses, underpasses and interchanges, and manufacture of Geosynthetic Strap soil reinforcement products.

Our organization conducts stringent and regular internal audits to ensure that its processes meet and satisfy the client's requirements. Terre Armée India adequately complies with all regulatory requirements. We have in place a systematic method for proactively identifying and correcting any discrepancies and preventing any potential non-compliance from occurring.

Environment Management System

Sustainable Development is core to our Social Responsibility. Our company consistently endeavours to provide its customers with not only superior innovative technology but also environmentally-friendly solutions. The Terre Armée India team is sensitive to the impact of high-tech solutions on the environment and consequently on future generations. Therefore, we employ methods and products that control the damage to the environment. Our precast products like TechSpan®, TechBox®, TechCulvert® and TechWall®, amongst others, have much less carbon emission, and are readily repairable causing significantly less damage to the environment. Internal audits are carried out on our worksites to monitor compliance with control measures. Our in-house training programs help our site managers, engineers, technicians, superintendents and supervisors assist our clients to improve awareness of environmental risks, assessment and remediation control. Terre Armée India team supported RALLY FOR RIVERS, a drive initiated by Isha Foundation to create awareness and momentum amongst all sections of society and the government about the perennial rivers in India that are becoming seasonal. A commitment to comply with environmental legislation and regulations and emphasis on continual improvement constitutes Terre Armée India's fundamental values.

Sustainable Technology

Terre Armée India is committed to parenting the innovation gene with sustainable technology.

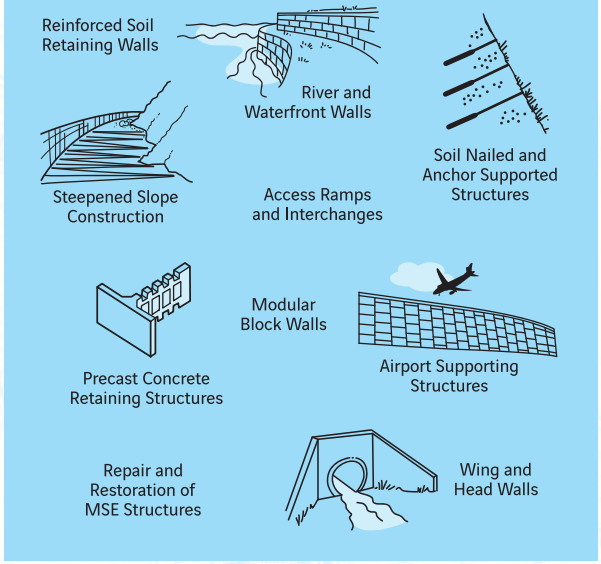
- Sustainability is the core theme of Terre Armée India's activities. We are consistently stepping up initiatives for environmental protection.
- We conduct impact assessment studies each time we conceive a significant project, ensuring reduction of negative environmental consequences.
- Our customized design and build solutions diminish negative effects on the environment and surroundings by minimizing consumption of the earth resources.
- Our innovative sustainability approach entails a constant quest for improvement pertaining to pollution prevention, chemical storage and waste sorting.
- Our products represent superior alternatives to conventional methods with regard to judicious resource consumption and reduced greenhouse gas emissions.
- Innovation in product development has induced resourceful methods and techniques that use recycled and marginal fills for Reinforced Earth® backfills.

Business Lines and Applications

In order to meet the increasing diversity of infrastructure, construction and urbanisation challenges in today's changing world, Terre Armée India provides tailor-made solutions for a variety of applications.

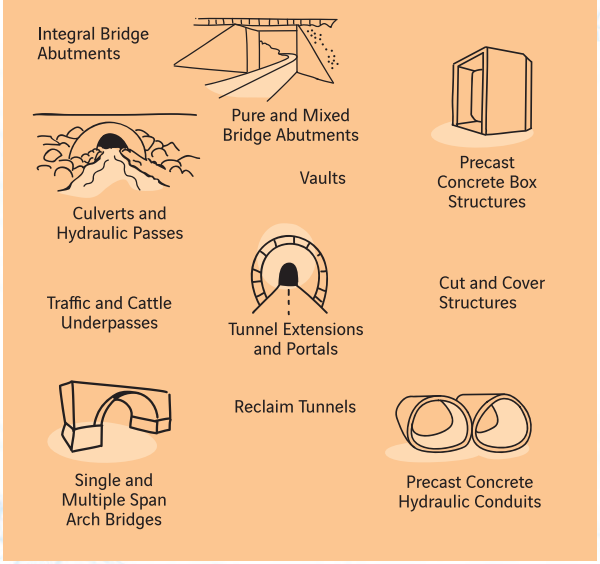
RETAIN
RETAINING STRUCTURES & SOIL REINFORCEMENT

APPLICATIONS



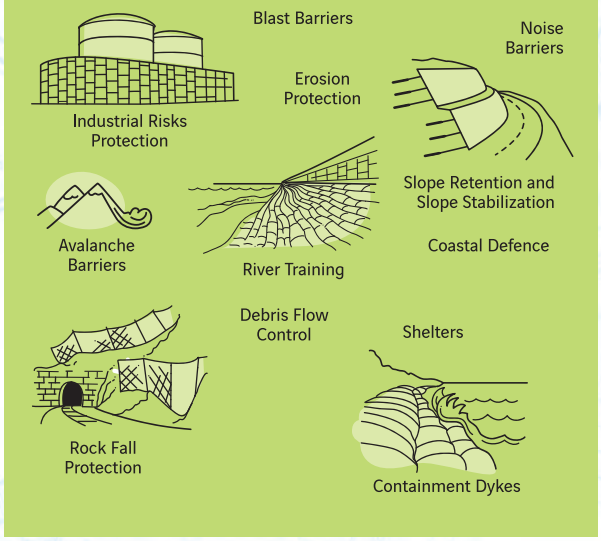
CROSS
CROSSING STRUCTURES

APPLICATIONS



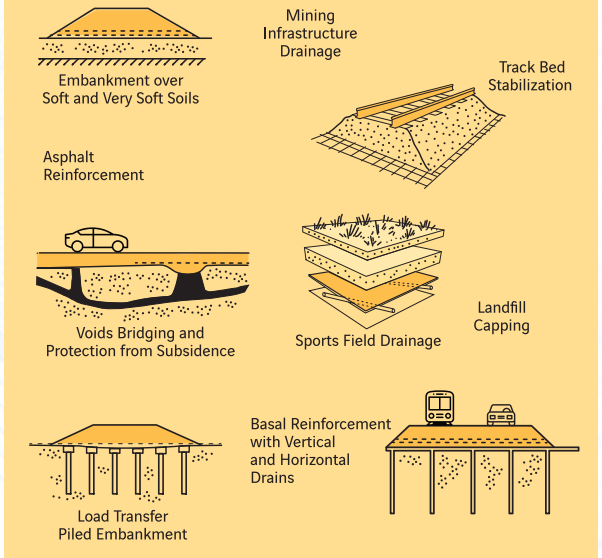
PROTECT
PREVENTING & PROTECTING INFRASTRUCTURES

APPLICATIONS



STRENGTHEN
REINFORCEMENT, STABILISATION AND DRAINAGE

APPLICATIONS



Market Sectors

By being at the forefront of innovation and path-breaking technology, Terre Armée India has forged an unrivalled level of expertise and experience to provide unique and bespoke solutions to a wide array of market segments.

- Roads & Motorways
- Railways
- Rivers & Waterways
- Ports and Harbours
- Water Management
- Airports
- Mining & Minerals
- Sports & Leisure
- Urban Development
- Energy, Oil and Gas
- Military
- Industry
- Waste Management
- Land Development and Buildings
- Disaster Management
- Dams and Reservoirs
- Coastal Restoration and Enviromental Protection

Industrial Capacity

Terre Armée's state of the art geosynthetics manufacturing facilities are located near Ahmedabad, Gujarat state, India.

The plant is operational since 2014 and produces a wide variety of soil reinforcement products like geostrips and high strength geogrids, which are being exported to more than twenty countries across the globe.

The geostrips are produced in various widths (50mm, 70mm and 90mm) with the widest range of strengths (25 kN to 200 kN) and high performance engineering polymers like high tenacity Polyethylene Terephthalate (PET), Polyvinyl Alcohol (PVA) and speciality Polyethylene (PE) resins. In addition, the facility produces high strength (up to 1800 kN/m) and wide width (up to 5.8m) geogrids for basal reinforcement applications. The extra friction enhancing high adherence geostrips and geogrids, designed to be used with low friction soils are also manufactured in this plant.

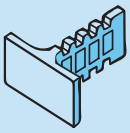
The plant is equipped with a modern testing laboratory with trained quality professionals to serve customers.

The products and the plant management are qualified by internationally accredited certification agencies such as ISO, CE and NTPEP.

We have a strong health and safety policy in place, with high ambitions towards environment sustainability and management.

Terre Armée continually strive to invest into advanced product designs and processes, and constantly upgrade the product specifications to achieve technical leadership while addressing a diverse range of demanding project needs.

Business Line: RETAIN

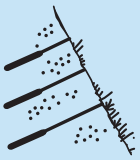


Precast Concrete Retaining Structures

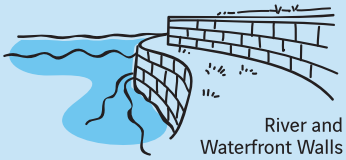
Repair and Restoration of MSE Structures

Wing and Head Walls

Modular Block Walls



Soil Nailed and Anchor Supported Structures

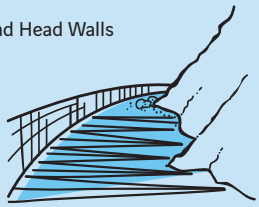


River and Waterfront Walls

Reinforced Soil Retaining Walls

Access Ramps and Interchanges

Airport Supporting Structures



Steepened Slope Construction

RETAIN

Retaining Structures and Soil Reinforcement

RETAIN

The RETAIN business line relates to technologies that involve earth retention and earth reinforcement applications. Being the inventor and pioneer in back-filled soil retention systems and earth reinforcement business, this business line targets projects and techniques involving externally built-up earth retention structures and in-situ improvement techniques. Our precast TechWall® and T-Wall® techniques can be applied to a wide range of land development, building and civil infrastructure projects. The soil reinforcement techniques can be applied to a variety of applications – from mechanically stabilized earth structures (Reinforced Earth® slopes and Reinforced Earth® walls), to reinforcement of cut and fill slopes through grouted soil nails, driven and stressed anchors and ground / rock anchors.

Each technique by itself is an engineered solution and the combinations of techniques in this business line open the possibility to address solutions in more complex, hybrid and technically challenging project environments. Our ability to interface these techniques with a diverse portfolio of solutions assists our customers to build and restore assets with our superior product quality and reliability, proven design, engineering detailing and scientific know how.

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Reinforced Earth® Wall

Reinforced Earth® structures combine engineered backfill with steel or synthetic tensile reinforcement and a modular concrete facing system. This ideal combination creates a durable and resilient earth retention structure. With **Reinforced Earth®** structures we can create several attractive architectural finishes.

Reinforced Earth® Steep Slope

Hilly terrains infrastructure are often prone to landslides, steep slopes, rockfall and debris flow. Terre Armée India offers bespoke **Reinforced Earth® Steep Slope** technique to build steepend slopes for slope engineering and geo-hazard solutions. **Reinforced Earth® Steep Slope** technique uses both mineral and vegetative facing finishes that appropriately blend with project requirements.

Precast TechWall®

TechWall® precast retaining walls and abutments are effective solutions when a standard footing is used or when site conditions rule out the use of Reinforced Earth® structures. **TechWall®** is developed as an engineered product with low lifecycle costs and long- term performance, which helps minimize overall construction duration and reduces site works.

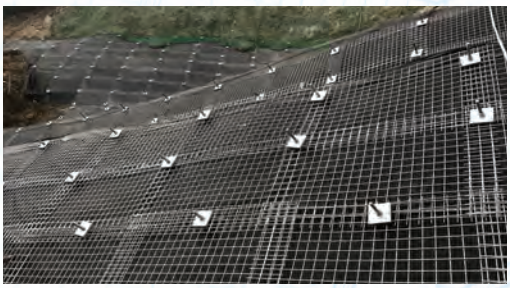
Precast T-Wall®

The **T-Wall®** system is a precast modular gravity type reinforced concrete retaining wall system. It is most suited for railway load supporting structures and construction of submerged retaining structures. The **T-Wall®** system decreases in stem length course by course – reducing materials, excavation and backfill as compared to other wall systems.

TerraAnchor™

TerraAnchor™ technology is an active soil reinforcement system used for permanent as well as temporary stabilization of existing slopes / structures by using high tensile steel as soil reinforcement (galvanized bars for permanent and strands for temporary). It is a driven and stressed soil anchoring system used with suitable facing.

TerraNail®



TerraNail® is an in-situ method of reinforcing existing soil/rock mass by installing solid or hollow fully threaded hot-dip galvanized high tensile geotechnical steel bars encased in grout. **TerraNail®** is typically use to stabilize existing slopes or excavations. It is also a reliable solution for landslide rehabilitation and active rockfall protection.

Composite Earth®

Composite Earth® technology adopts primary and secondary soil reinforcement systems for the design of Reinforced Earth® retaining walls. It aims to control the lateral deformation of the facing during construction and operation, including during seismic events. This is an effective way to design and construct tall and critical structures.

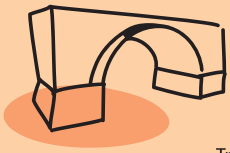
TerraLink®

TerraLink® technique allows building of earth retention structures connecting existing profiles stabilized by soil nails and/or anchors. It is a useful technique for construction of benches and for road widening projects with limited available space, and activates the best optimisation between cut and fill requirements.

Business Line: CROSS

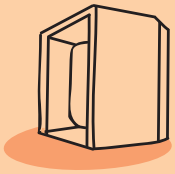
Culverts and Hydraulic Passes

Cut and Cover Structures

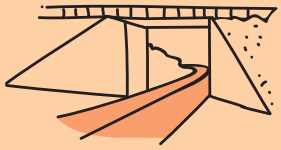


Single and Multiple Span Arch Bridges

Traffic and Cattle Underpasses



Precast Concrete Box Structures



Pure and Mixed Bridge Abutments

Integral Bridge Abutments

Tunnel Extensions and Portals

Vaults

Reclaim Tunnels

Precast Concrete Hydraulic Conduits

CROSS

Crossing Structures

CROSS

The CROSS business lines focus on technologies and applications related to crossing structures. Reinforced Earth® true and integral Bridge Abutments (TechAbutment®) are the preferred choice for bridge engineers, EPC contractors and private project developers.

Precast concrete arch (TechSpan®) and box (TechBox®) structures are used for the construction of minor bridges in single or multiple spans, hydraulic passes, material and water conveyance tunnels, vehicle, cattle and pedestrian underpasses, and cut and cover tunnels. As an expansion to the technique, these structures are also used as extensions to tunnel portals and construct hydraulically pushed tunnel envelopes. Both precast box (TechBox®) and precast arch (TechSpan®) structures can be used to act as rockfall and debris flow sheds and shelters, as a more reliable alternative for prevention and mitigation of geohazards. TechSpan® arches also have proven use as ammunition storage bunkers in military applications.

Finite element modelling realises the benefits of soil-structure interactions provides optimum structure geometry and size and thus savings in materials consumption. It is possible to achieve complete water tightness of these segmental structures using state-of-the-art products and installation methods.

TechSpan®

TechSpan® is a one of the most reliable, cost effective precast concrete arch systems available for cut 'n' cover structures. It is widely used in the construction of bridges, underpasses, conveyance and reclaim tunnels, portals, ammunition storage bunkers and rockfall sheds and shelters. Typically, 15-20 linear meters of **TechSpan®** can be installed in one work shift.

TechBox®

TechBox® is a state-of-the-art precast 'box' structure, typically a one- or three-segment system suitable for cut 'n' cover buried structures. The precast segments are brought to the installation site, when the site is ready for construction. It allows rapid on-site regulated installation. The soil cover required in **TechBox®** structures is lower than for arch structures.

TechCulvert®

TechCulvert® is small to medium sized single unit Precast 'Box' or two-pin Precast 'Arch' for hydraulic culverts and utility covers (like gas pipelines). **TechCulvert®** provides several benefits to project owners, like assured quality, savings in indirect cost, rapid construction and early traffic commissioning.

TechAbutment®

TechAbutment® is an alternative solution for RCC / piled abutments. A highly engineered technique, it has been adopted throughout the world successfully for over 40 years. It is a Reinforced Earth® structure designed to support bridge load as an alternative to conventional RCC abutments. This is used for bridges, underpasses, flyovers, ROBs and RUBs.

Tubo TechSpan®

Tubo TechSpan® is a prefabricated reinforced concrete tube with vaulted sections that has particular designs for small cross structures like road sewers, culverts, any other utility pass, etc. To install the **Tubo TechSpan®**, a trench is excavated at the installation location as per the dimensions of the Tubo TechSpan®. Waterproof structures can be built using these segmental units.

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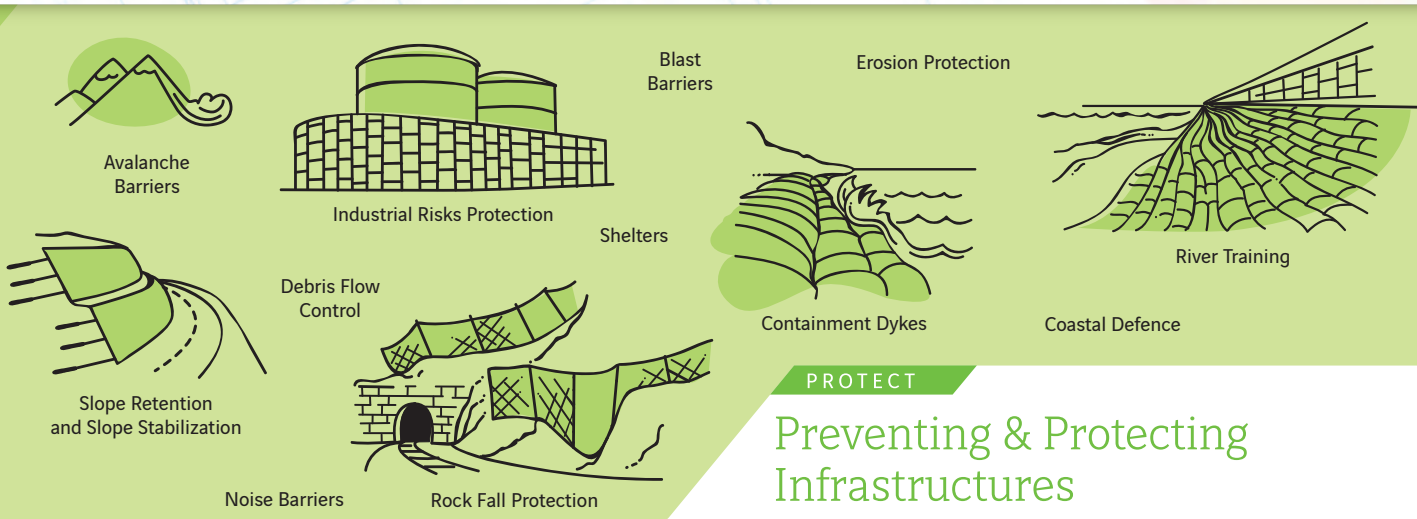
Business Line: PROTECT



PROTECT

Preventing & Protecting Infrastructures

PROTECT

The Protect business lines assist the owner and our customer to prevent and protect critical and sensitive infrastructures from natural and man-made (including industrial) disasters.

The approach is to integrate our existing product, process and engineering knowledge and know-how and offer our customer the best-in-class solutions based on project specific needs. In this business segment, we also work with the best-in-the-industry associates and our strategic alliance partners to establish best practices and proven time tested solutions.

Terre Armée offers a complete protection systems package against erosion, rockfall, unstable rock and loose rock slopes, landslides, debris flow and avalanches.

TechRevetment®

TechRevetment® is a pre-engineered factory costumed grouted mattress system used for permanent erosion protection works. This technology is used to protect embankments, protect bridge abutments against scour, for bed protection of major rivers and waterways, and for shoreline protection. This system can be installed at rapid speed and under water without the need for dewatering.

TerraMattress®

TerraMattress® is a corrosion free polymer based erosion control system designed to replace conventional rip-raps or wet stone pitching. This system is often used on slopes to construct boulder or soil in-filled semi-rigid crates and large bags to prevent water front induced erosion and provides protection against flash floods, moderate wave attacks and run-ups.

PROTECT

TerraGreen®

TerraGreen® is a custom designed erosion control mat / blanket useful for protecting dry and intermittently wet and erodible slopes. **TerraGreen®** as a stand-alone technique or mixed with other solutions like TerraNail® or TerraAnchor™ and high-tensile steel netting is often used to mitigate low to medium grade surface erosions and soil slips and slides.

TerraBund®

TerraBund® is a Terre Armée protection bund. It is a gravity structure built using soil reinforcement and flexible or semi-rigid facing systems. It is a passive protection system used typically as a geo-hazard solution against rockfalls, avalanches, debris flow and mud slides. **TerraBund®** can withstand more than 8000kJ of impact energy in the event of landslide or rockfall.

ReMain®

ReMain® is a specific selection of techniques used to maintain, strengthen and upgrade Reinforced Earth® structures. **ReMain®** is used for restoration and strengthening of existing structures (typically retaining structures, bridge abutments, wing walls and return walls). The durability, service life and performance of the affected structure can be significantly improved.

TechShelter®

Rockfall is an inherent hazard of mountainous terrains, which jeopardizes life, property and threatens the smooth operations of traffic lines. **TechShelter®** is a perfect custom-designed solution of pre-cast arch box (TechBox® and TechSpan®) for sheds and shelters to suite these site conditions. This is one of the most reliable, cost-effective system for cut 'n' cover structure.

PROTECT

Rockfall Barrier

Terre Armée offers both passive and active engineered structural solutions that mitigate rockfall risk and control levels of damage. **Rockfall protection barriers** are made of metallic, non-metallic and/or composite materials. It is primarily applied to arrest and catch rocks, boulders, shooting stones or debris that can be flowing or falling due to natural causes. The **rockfall protection barrier** is a support solution allowing to hold these disintegrating and falling elements, subsequently avoiding damages to infrastructure and preventing disruptions such as traffic blockages.

Slope Retention

Terre Armée offers engineered solutions for **Slope Retention** to retain the masses in situ and prevent erosion and shallow landslides. This systems is designed on a site to-site basis. Depending on the site characteristics and strength requirements, a large variety of net and netting products are available. Re-stabilization of the slope using mesh and natural vegetation is highly encouraged. Furthermore, netting can accommodate pre-existing vegetation such as tree trunks with minimal effort.

Debris Flow Barrier

Terre Armée offers engineered solutions to protect infrastructure, and assets from debris flows and debris floods. The threat of climate change raising the global temperatures, potentially causes a change in weather patterns, thawing of permafrost areas, increasing wildfires, debris flows, and shallow landslide activity. The use of flexible-net barriers can be an efficient alternative to the other traditional and costly mitigation measures such as dams and other rigid barriers.

Avalanche Barriers

Avalanche Barrier systems are designed on a site-to-site basis to protect infrastructure, utilities, buildings, reforestation, and lives from avalanches. Snow nets, snow rakes and steel snow bridges are installed in the initiation zones to prevent avalanches from forming. Static defense structures, snow catchment fences/ barriers are used which effectively reduces the run-out length of an avalanche.

PROTECT

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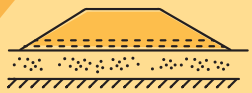
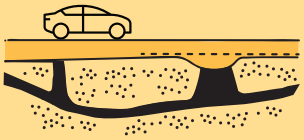
Business Line: STRENGTHEN



Embankment over Soft and Very Soft Soils

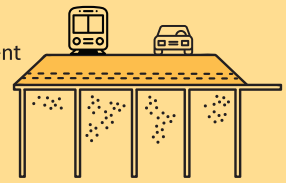
Mining Infrastructure Drainage



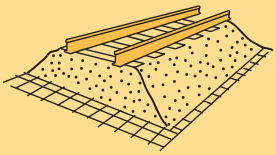
Voids Bridging and Protection from Subsidence

Landfill Capping

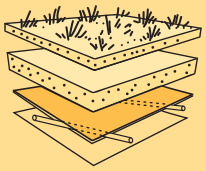
Basal Reinforcement with Vertical and Horizontal Drains



Asphalt Reinforcement



Track Bed Stabilization



Sports Field Drainage

Load Transfer Piled Embankment

Soil Reinforcement and Ground Stabilization

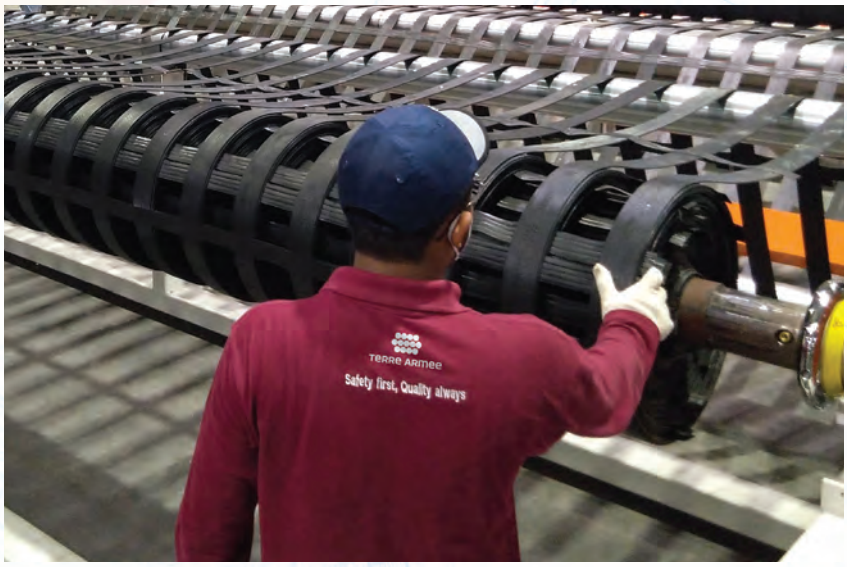
STRENGTHEN

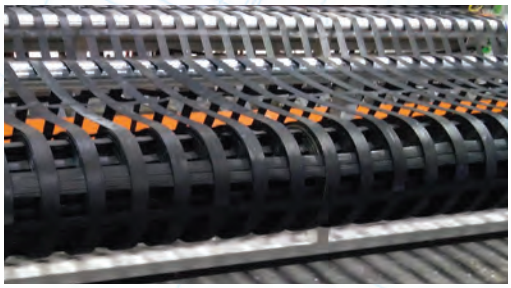
The STRENGTHEN business line relates to technologies that involve Soil Reinforcement and Ground Stabilization.

This business line also deals in projects involving subgrade stabilization and improvement works, engineered solutions like bridging voids and subsidence, capping and piggy bagging of landfills, reinforcing lagoon closures, reinforcing and stabilizing embankments on soft and very soft foundations, load transfer platforms over piles, controlled modulus columns and stone columns.

Our engineered solutions help improve foundation of soil using high strength, low modulus proprietary geosynthetics for Basal Reinforcement applications, bi-axial geogrids and woven geotextiles for ground stabilization applications alongside improvement of drainage systems with low creep, low intrusion and low deformation drainage geocomposites.

ArmaLynk™





ArmaLynk™ is a soil reinforcement geosynthetic, manufactured from high tenacity polyester yarns, extruded to form polymeric strips encased in polyethylene sheath, and welded together to cross strips to generate a stable and strong geogrid structure. **ArmaLynk™** is used for various basal reinforcement applications like embankment over soft soils, embankment over subsistence, void bridging and challenging ground stabilization of building roads, bridges, runways, railways, working platforms, and heavy-duty pavements.

ArmaGrid™

ArmaGrid™ is a uniaxial or biaxial geogrid made from either polyester or polypropylene or HDPE. It is used as soil reinforcement in various applicatons such as foundation improvement, trackbed stabilization, basal reinforcement etc. Terre Armée India uses in-house design capacity to select the type and strength of material based on the actual site condition.

STRENGTHEN

ArmaWeb®

ArmaWeb® is a 3-dimensional soil stabilization and erosion protection system. It is made of High Density Polyethylene (HDPE) and welded at junctions to form cellular confinement systems. **ArmaWeb®** offers higher performance and faster installation for various applications.

DRAINTUBE™

DRAINTUBE™ has unique benefits over other geocomposite drainage systems; such as no geotextile intrusion, no creep and no peel adhesion issue. These ensure long term performance in most difficult conditions. Each roll performs the functions of separation, filtration and drainage.

TerraFlow®

TerraFlow® Geocomposite consists of bi-planar High-Density Polyethylene (HDPE) geonet having non-woven polypropylene (PP) geotextile heat bonded on both sides. Bi-planar geonet is designed with two HDPE strands crossing each other at a constant angle to form a diamond structure to provide better planar waterflow under high loading. Tri-planar geonet consists of three HDPE strands to improve the lateral drainage and transmissivity.

TerraDrain®

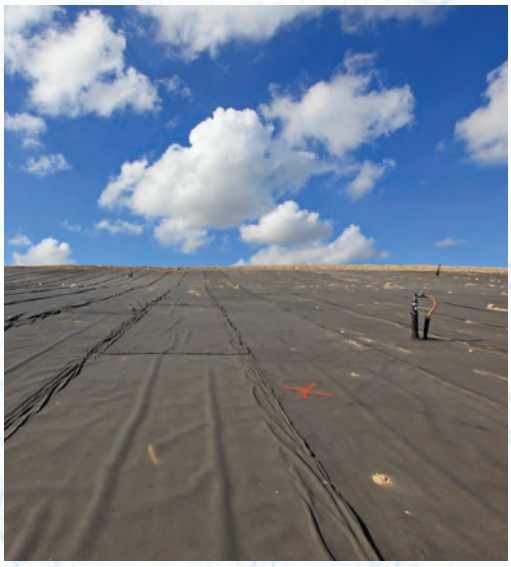
TerraDrain® is modular light weight, high strength and high impact cellular drain board wrapped with a custom designed geotextile and used for subsurface drainage. The drainage board and the non-woven geotextile used in **TerraDrain®** are manufactured from polypropylene. The open surface design and high internal void volume enables the rapid capture and transport of high amount of water.

STRENGTHEN

TerraLine®

TerraLine® Geosynthetic Clay Liners (GCL) are factory made hydraulic barriers consisting of very low-permeability bentonite powder supported by geotextiles and/or geomembranes. The engineering function of a **TerraLine®** – GCL is containment as a hydraulic barrier to water, leachate or other liquids and sometimes gases.

TerraTextile® (Woven + Non - Woven)



TerraTextile® is a specially made technical textile, either woven or non-woven. They offer excellent strength and hydraulic characteristics; and cater for a wide range of applications. **Woven TerraTextile®** is used for soil reinforcement, separation and filtration, secondary reinforcement, erosion control, ground stabilisation, silt fence etc. **Non-woven TerraTextile®** is very popular in applications such as filtration, separation, sub-surface drainage and transmission erosion control.

ROCKFALL BARRIER, Z-MORH,
JAMMU AND KASHMIR, INDIA

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