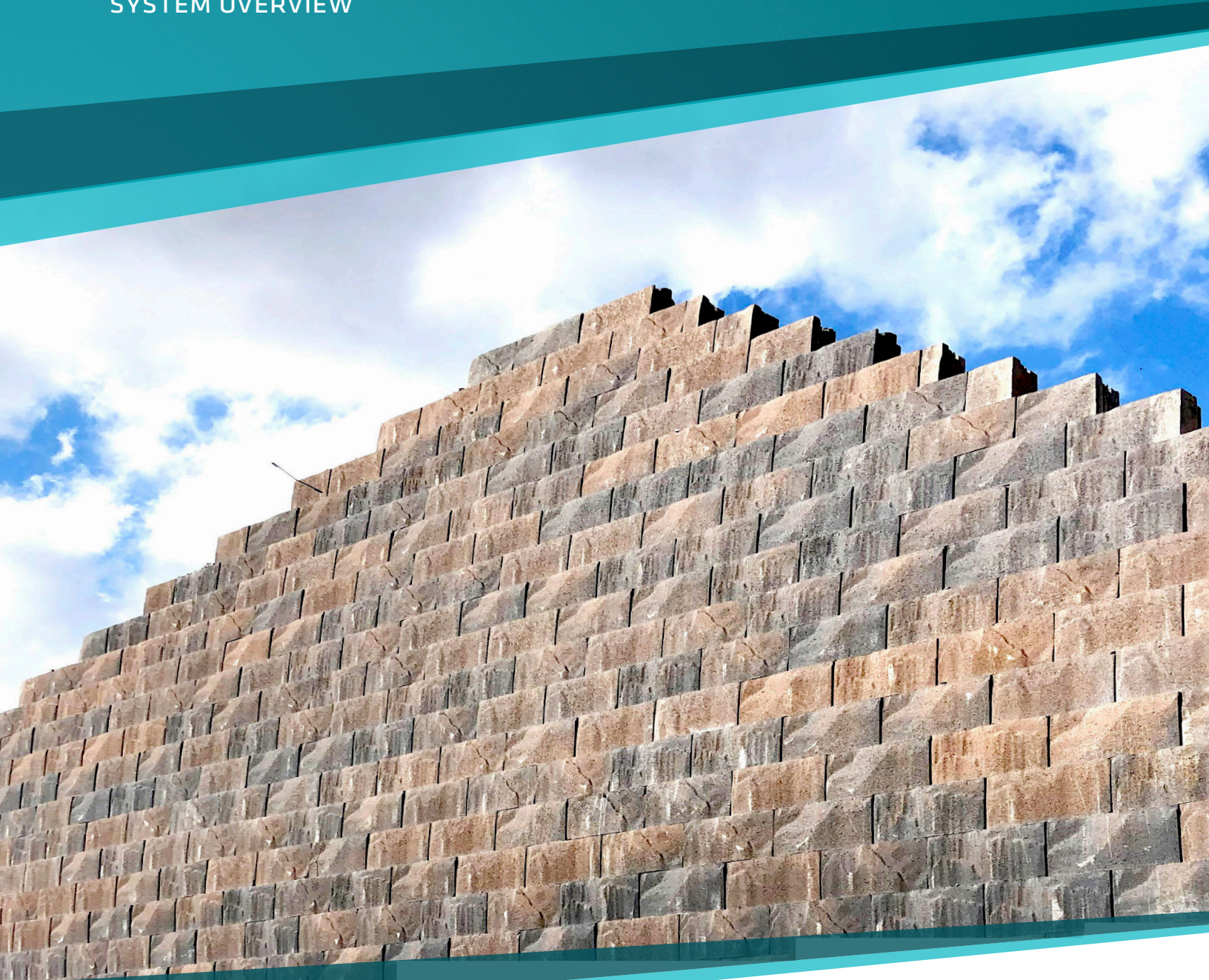
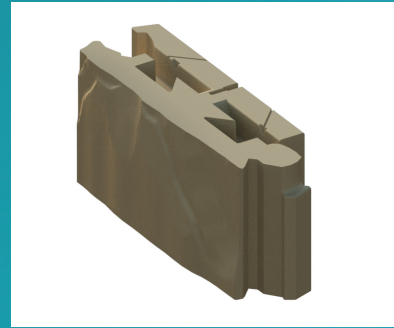


PALISADE™ 50 RETAINING WALL SYSTEM

SYSTEM OVERVIEW



- ▶ The Palisade™ 50 block weighs no more than 50 lbs., making it the lightest structural block currently on the market.



The Solution You Can Count On™

THE LIGHTEST-WEIGHT BLOCK FOR STRUCTURAL AND LANDSCAPE APPLICATIONS

Tensar's new Palisade™ 50 Wall System was developed on the concept that light-weight blocks are key to improving efficiency in production and installation. Each Palisade50 block weighs no more than 50 lbs, making it the lightest structural segmental retaining wall (SRW) block currently on the market.

These blocks allow for quick installation since the thin profile is easy to carry and handle. This system also eliminates the need for core fill, making it one of the most cost-effective and high-performing systems on the market.

With its natural rock aesthetic, Palisade50 blocks can also be used in landscape wall applications. The combination of surfaces create the perfect look for your project.

With the Palisade50 System, quality and performance no longer need to be sacrificed for a light weight block. Palisade utilizes Tensar's GeoHoop™ technology that mechanically connects Tensar's high-strength HDPE UX Geogrid reinforcement to the backfill for stability during construction

and long-term performance. This positive, mechanical connection greatly minimizes the potential for wall failure, even under the most severe conditions such as earthquakes.

For long-term durability, increased structural integrity and simplified construction, all at costs lower than most conventional alternatives, specify the Palisade50 Retaining Wall System for your next project.



Palisade™ 50 System Components

Component	Function
Palisade50 Facing Units	Light-weight block for both structural and landscape wall applications. Each block weighs up to 50 lbs. max per 0.89 SF unit, making it the lightest block on the market.
Polymeric Connectors	HDPE connectors designed to maintain block alignment and increase shear capacity to block.
Tensar UX Geogrids	HDPE structural geogrids internally reinforce fill materials. Inert to chemical, biological and stray current degradation, they can be used with non-select fill or even recycled concrete.
GeoHoop™	Pre-cut HDPE geogrid designed to mechanically connect to the Palisade50 block units and provide facing stability.
Full Engineering and Construction Services	Engineering design services (including stamped designs), construction drawings, on-site assistance and consulting services for each Palisade Wall project upon request.



Tensar® Geogrids

Tensar International Corporation's Grade Separation Solutions owe their long-term performance and durability to high-strength Tensar® Uniaxial (UX) Geogrids. With their stiff interlocking capabilities, these geogrids stand the test of time, performing better than other commercially available geosynthetics.



Palisade™ 50 System Components

Cap Unit
4" h x 12"/16" w x 7" d
Finish at top of wall and block with "grooved" end.

End Cap Unit
4" h x 16" w x 6" nominal
Top of wall finish at block with "tongued" end.

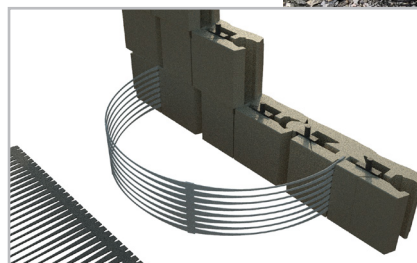
GeoHoop™
Mechanically connect block to backfill in order to provide facing stability

Tensar® Uniaxial (UX) Geogrids
Structural geogrid to reinforce backfill. Inert to chemical and biological degradation

Polymeric Connector
Maintains block alignment and increases shear capacity

Palisade50 Facing Unit
Four different block surfaces are combined to create natural looking rock aesthetics.

This rear view shows how the GeoHoop mechanically connects to the wall.



Palisade50 Blocks are lightweight and easy to handle, allowing crews to maintain the daily production rate.



More blocks per pallet saves space on jobsites, improves shipping costs and decreases truck traffic.



The Palisade50 Advantage

FOR THE INSTALLER:

- **Improved Productivity** – The Palisade50 Retaining Wall System allows for higher installation rate or the same rate with less labor due to the ease of handling of the lightweight block. Installation crews will be able to maintain production rate throughout the day handling the lightweight block.
- **Cost Saving** – This system eliminates the need for core fill, increases field crew productivity by using lightweight block, optimizes vertical geogrid spacing to 32 inches, and provides the flexibility to stack multiple rows of block prior to backfill and compaction.
- **Space Saver** – Having the space to stage and store materials is a typical jobsite challenge. The thin profile of Palisade50 block yields 64 units per pallet (57 SF of wall face area) reducing the number of pallets and space required in the staging areas and laydown yards on projects. Similarly, the overall amount of truck traffic entering the jobsite is reduced with more Palisade50 per load than conventional SRW systems.
- **Ease of Use** – The thin profile and lightweight Palisade50 block is easy to carry and handle during installation. It meets the OSHA regulations for 50 lbs carry weight limit per person and minimizes the potential for injury in the field.
- **Engineered Solutions** – Palisade50 Retaining Wall System offers natural rock aesthetics that are superior and cost-effective solutions for both structural and landscape retaining wall needs in industrial, commercial and residential markets. The system's GeoHoop technology can be used as an effective low-height gravity wall structure for lower-height walls and in cut situations.
- **Stability** – The unique tongue and groove design between adjacent Palisade50 block units combined with the GeoHoop technology resists installation forces and maintains wall alignment during construction.

FOR THE PRODUCER:

- **Production Efficiency** – With 4 blocks per cycle, the Palisade50 Retaining Wall System allows higher production efficiency vs traditional SRW block of 2 blocks per cycle. Additionally, no block split is needed for Palisade50 block, eliminating the block splitting step from the production.
- **Storage and Shipping** – The lightweight and thin profile Palisade50 blocks allow more units per pallet (64 units), reducing the number of pallets while increasing the SF capacity on a truckload vs traditional SRW block.
- **Material Cost** – Palisade50 block requires less concrete to produce and eliminates waste from block splitting through a reduction in the producers' cull rate.
- **Fewer skus** – Instead of having dedicated skus for landscape and structural wall applications, the producer has the option to reduce the skus or inventory carried with the Palisade50 Retaining Wall System.

FOR THE OWNER/ENGINEER:

- **Reliable** – The Palisade50 system relies on the superior durability of Tensar high-density polyethylene (HDPE) geogrid which is unaffected by aggressive soil conditions (high or low pH) and resists chemical, biological, and environmental degradation for long-term design performance of the wall. Tensar has successfully designed and installed over 30 million SF of our MSE structures worldwide over the past three decades.
- **Positive Mechanical Connection** – Utilizing the GeoHoop technology, the Palisade50 facing unit is mechanically connected to Tensar's high-strength HDPE geogrid reinforcement and the reinforced backfill for stability during construction and for long-term system performance, even during extreme natural events such as earthquakes.
- **Minimize Budget/Maximize Performance** – No longer sacrifice quality for cost. The Palisade50 Retaining Wall System is one of the most cost-effective and high-quality systems in the market.



The Palisade50 System utilizes GeoHoop technology to create a positive, mechanical connection between the block face and geogrid reinforcement, ultimately producing a smarter and more cost-effective design.

Standard Palisade50 System Design

PLEASE NOTE: The following information is provided for general illustration purposes only and does not constitute engineering advice. Final designs should be executed only by a qualified professional engineer providing sealed drawings, calculations and detailed installation requirements.

USING THE CHARTS

The generalized design charts on page 6 address three different design scenarios with wall elevations ranging from 4 ft (1.2 m) to 14 ft (4.2 m) and increasing in height incrementally by 2 ft (600 mm). The design scenarios alter the backfill soil type and loading conditions. Understanding these different scenarios is important for selecting the most appropriate solution for your specific design.

- **Wall Batter** – The Palisade50 Wall is designed to have 5° batter
- **Soil Types** – The two backfill soil types are a sand material (32°) and a silty sand or clayey sand (28°) that meet a minimum gradation and plasticity recommendation provided by National Concrete Masonry Association (NCMA)

► Loading Conditions – The three loading conditions are:

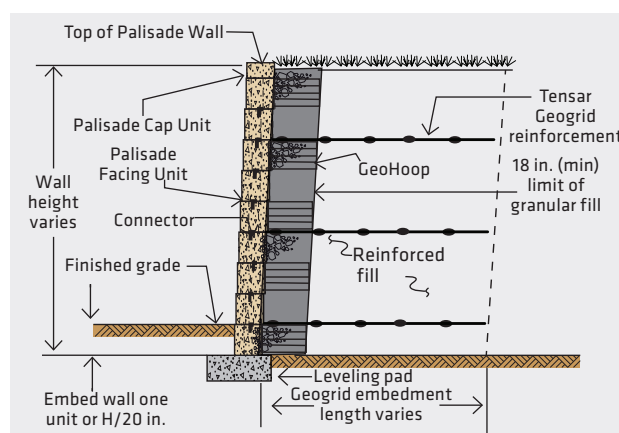
1. A horizontal surface at the top of the wall with no surcharge load
2. A horizontal surface at the top of the wall with a uniform surcharge of 180 psf
3. A 3H:1V slope on top of the wall

Once the most appropriate design has been selected, the charts will provide the suggested geogrid type, embedment length and geogrid spacing. All lengths listed are measured from the wall face to the last transverse bar* on the Tensor® Geogrid and are uniform throughout the given elevation of the wall.

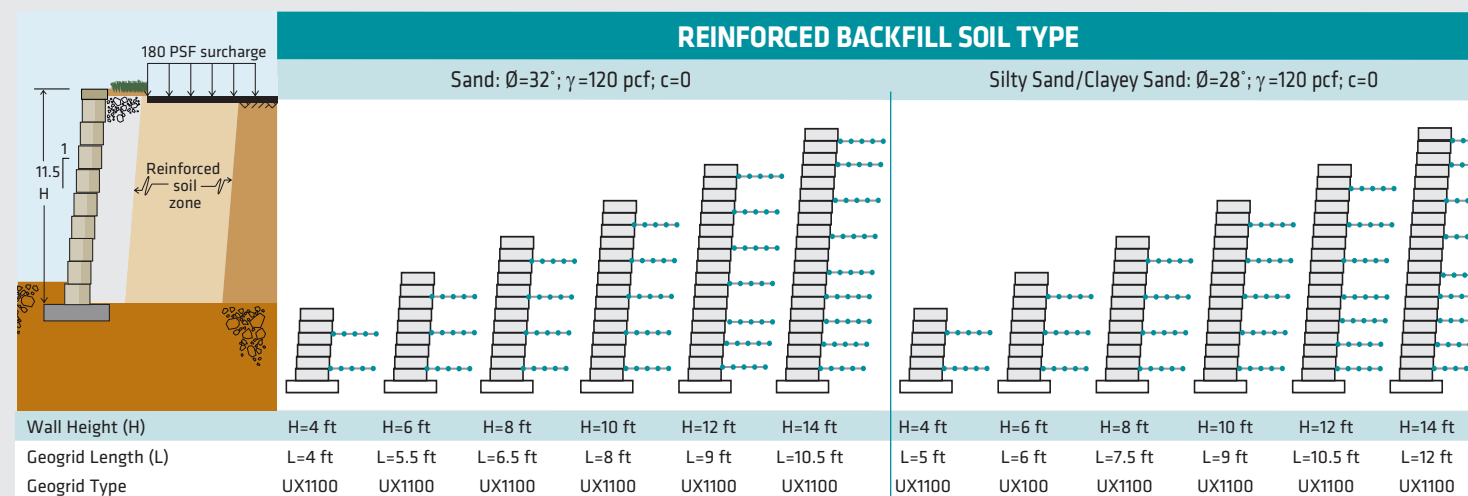
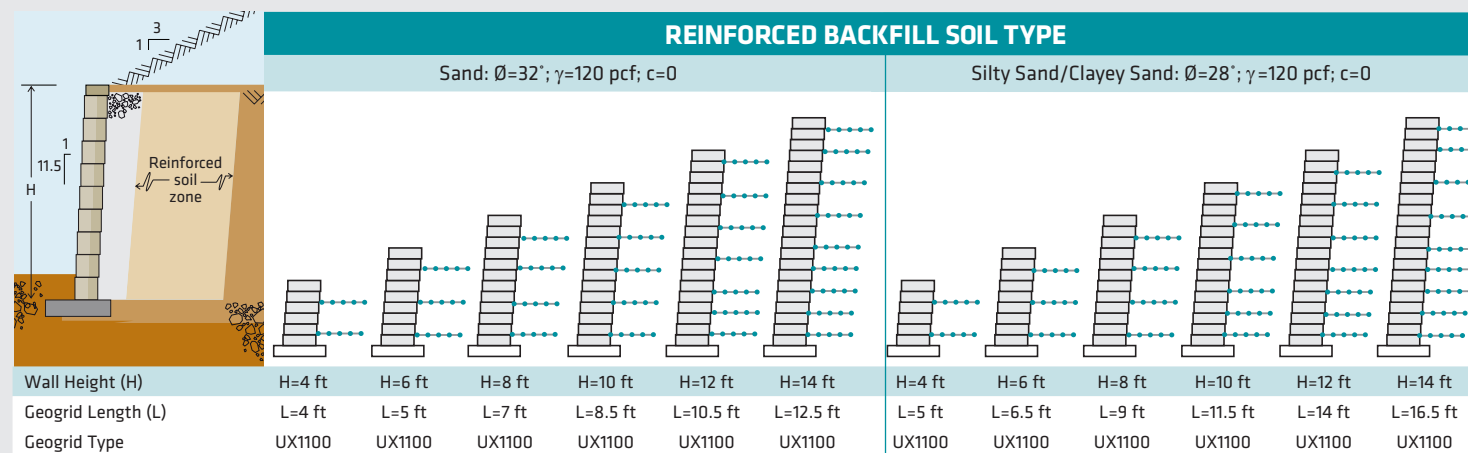
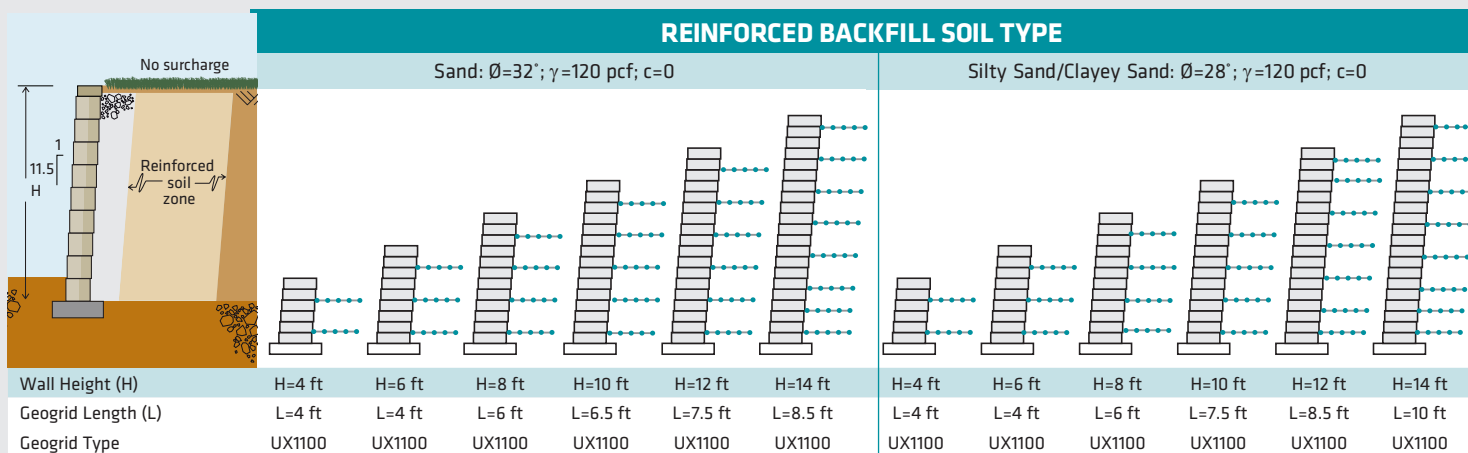
The design charts assume that the walls are constructed in accordance with the Palisade50 System's standard specification and installation guidelines. Other requirements and limitations based on actual site conditions may also apply.

**The transverse bar is the solid section of the Tensor® UX Geogrid, approximately 3/4 in. wide, located parallel to the face of the retaining wall and in a repeat pattern at a 16 in. to 20 in. spacing (depending upon the type of UX Geogrid being evaluated).*

Typical Cross Section - 5° Batter



Palisade50 Design Charts



NOTE: All *Tensar Uniaxial Geogrids* shown are *UXMSE Geogrids*.

- › Tensar has developed products and technologies that have been at the forefront of the geotechnical industry for the past three decades.



Tensar International Corporation

Tensar delivers engineered systems that combine technology, design and products. By utilizing Tensar's approach to construction, you can experience the convenience of having a supplier, design services and site support all through one team of qualified sales consultants and engineers. When you partner with Tensar you can expect:

SITE ASSESSMENT

We can partner with any member of your team at the beginning of your project to recommend a Tensar Solution that optimizes your budget, financing and construction scheduling.

DESIGN ASSISTANCE/SERVICES

Experienced Tensar design engineers, regional sales managers, and distributors will develop budget estimates and proposals to help you evaluate your best construction options and determine the most cost-effective approach.

SPECIFICATION

Our value-engineered solutions feature stamped drawings with precise construction details. Changing site conditions can be quickly addressed in the field or in our Engineering Department.

SITE SUPPORT

Tensar regional sales managers and our distribution partners can advise your designers, contractors and construction crews to ensure the proper installation of our products and prevent unnecessary scheduling delays. can partner with any member of your team at the beginning of your project to recommend a Tensar Solution that optimizes your budget, financing and construction scheduling.

EXPERIENCE YOU CAN RELY ON

Tensar is the industry leader in soil reinforcement. We have developed products and technologies that have been at the forefront of the geotechnical industry for the past three decades. As a result, you know you can rely on our systems and design expertise. Our products are backed by the most thorough quality assurance practices in the industry. And, we provide comprehensive design assistance for every Tensar system.

For more information about Tensar products and systems, visit **TensarCorp.com**, e-mail **info@tensarcorp.com**, or call **800-TENSAR-1**. We are happy to supply you with additional system information, complete installation and design guidelines, system specifications, design details, conceptual designs, preliminary cost estimates, sealed construction drawings, summaries of completed projects, software and much more.

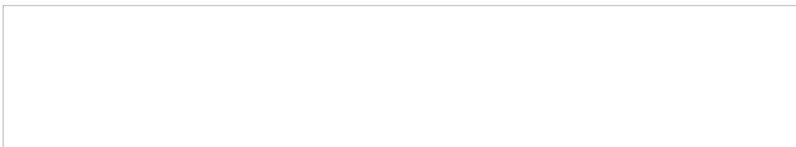




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