



**MINING**

UNDERGROUND AND SURFACE SYSTEMS

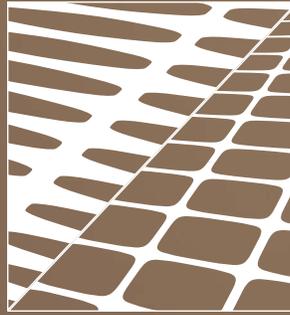
# MINING UNDERGROUND AND SURFACE SYSTEMS

SYSTEM OVERVIEW



**Tensor**<sup>®</sup>

➤ **Tensar® Mining Systems** are designed to enhance value, maximize return and reduce overall costs for your mining projects.



### **Tensar® Mining Systems**

Our Mining Systems owe their strength and durability to **Tensar® Mining Grids**. Versatile, lightweight and corrosion-resistant, Tensar Mining Grids stand the test of time, outperforming conventional metal reinforcement solutions in a number of underground applications.



## Solutions for Underground Mining and Tunneling Construction

A leader in innovative and cost-effective alternatives to traditional construction methods, Tensar International Corporation (Tensar) offers a number of solutions to support the unique requirements of mining and tunneling construction. Tensar® Mining Systems include a family of polymeric grid products designed to enhance value, maximize return and reduce overall project costs.

These reinforcement products include durable Tensar® Mining Grids, Tensar Roof Mats and Minex™ Rock Mesh. Strong yet lightweight, Tensar Mining Grids are ideal for pillar wrapping, rib control and highwall screen installations. Tensar Roof Mats help secure mine and tunnel roofs and ribs for safer and more efficient mining operations. And Minex Rock Mesh is equally versatile for faster, safer longwall screen moves as well as hard rock roof and rib applications. Its composition and weight significantly reduce back, hand and facial injuries while handling, and it cuts installation time by 75% over chain link or welded wire mesh. All three polymer products are corrosion-resistant, designed and manufactured for easy installation.

### **UNDERGROUND APPLICATIONS**

#### **Rib Control**

Tensar BX3326 and BX3316 Mining Grid products provide effective rib control for soft minerals, with Minex Rock Mesh tackling the most demanding hard rock and tunneling applications. Both BX products comply with MSHA CFR 30, Part 7 criteria for permanent applications.

#### **Straps**

When securing ribs in soft minerals or hard rock, Tensar UX3326 rib straps are the ideal complement to Tensar Mining Grid products. Strap widths and lengths are custom cut from Tensar UX3326 Roof Mat material; placed over Mining Grid and Minex Rock Mesh, rib straps greatly increase the bolt plate-bearing surface to dramatically enhance the strength of the underlying mesh.

Tensar UX rib straps have a longer design life as compared to the typical seven-year service life of metal straps in acidic conditions. And with no metal straps or plates coming in direct contact with the mining grid, the problem of cutting into and weakening the grid is eliminated.



*Tensar Mining Grids and UX Roof Mats provide effective rib and roof control for the most demanding applications.*



*Tensar UX Rib Straps, when combined with Tensar Mining Grid and Minex Rock Mesh, enhances the strength of the underlying mesh.*





*Minex™ 400 x 400  
KN Mesh Screen*

### **Roof Control**

Tensor® UX3326 Roof Mats provides the strength and stiffness of 8-gauge welded wire panels with the benefits of a light-weight polymer product. And when compared with 4 in. x 4 in. gauge wire panels, mats have been NIOSH-tested at 87% of pull-through strength. With their greater surface area coverage, Tensor Roof Mats dramatically reduce the occurrence of rock fall-through. And like Tensor Mining Grid, Tensor Roof Mats meet MSHA CFR 30, Part 7 criteria.

In hard rock where CFR 30, Part 7 standards are not required, Minex Rock Mesh may be used for roof control.

### **Longwall Screening**

Known throughout the industry as the leading longwall screen technology, flame-retardant Minex Rock Mesh has reduced longwall moving from weeks to days, saving hundred of thousands of dollars. The mesh features weight characteristics similar to Tensor Mining Grid, but with eight times the strength and increased flexibility. With strength bands knitted directly into the mesh, Minex Rock Mesh has largely replaced wire rope reinforcement (NM200X20011R).

### **Highwall Screens**

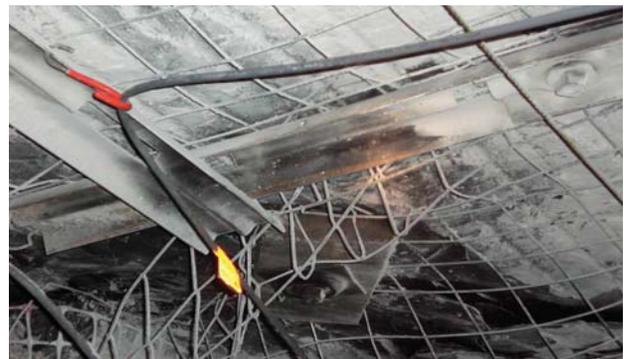
Tensor Mining Grids are used to cover steep highwall faces to control falling debris at mine entrances. Since large sections of grid can be pre-sized and taken to the top of the cut for installation, they're easier to handle and install than chain link. Strong, lightweight and corrosion-resistant, mining grids provide a superior alternative to wire mesh.

### **Road Reinforcement**

When soft bottom conditions require effective base reinforcement, the Spectra® Roadway Improvement System, featuring Tensor® TriAx® Geogrid, is the solution. A layer of TriAx Geogrid covered with the appropriate aggregate distributes wheel loads over a wide area to increase bearing capacity and extend service life. TriAx Geogrid also reduces the aggregate thickness required. And unlike poured concrete pads, no special equipment is needed for installation. Tensor Geogrids have routinely supported 50 ton loads underground as well as 150 ton load surface applications.



*Tensor Roof Mats have greater surface area coverage which dramatically reduces the occurrence of rock fall through.*



*8-gauge wire mesh.*



*Triton® Geotextile Tubes can contain even fine grain materials. Their unique construction allows them to outperform conventional tube systems.*

## **ABOVE GROUND APPLICATIONS**

When reinforcement needs are above ground, rely on Tensar's innovative roadway improvement, grade separation and foundation improvement systems.

### **Haul Roads**

Engineered to reinforce soft soils and distribute heavy loads, the Spectra® Roadway Improvement System improves the performance of flexible pavements as well as unpaved haul and temporary roads.

### **Grade Separation**

For Grade Separation and earth retention, we offer a range of geogrid-reinforced, wall and slope systems. Tensar® Geogrids are corrosion-resistant, enabling the use of locally available fill for even lower construction costs.

### **Platforms**

For working platforms over weak compressible soils, the Dimension® Foundation Improvement System, an economical alternative to conventional methods, features a geogrid-reinforced composite of soil or aggregate that forms a stiffened platform over weak, compressible soils.

## **Waste Dewatering**

Dewatering and containment of mining waste requires a special solution of its own. Triton® Geotextile Tubes provide an economical, environmentally friendly alternative to traditional technologies. Strong and durable, Triton Geotextile Tubes can contain even fine-grained materials. And with their unique construction, they typically outperform conventional tube systems.

We are happy to supply you with additional information on our geogrid products, installation guidelines, system specification, design details, conceptual designs, preliminary cost estimates, case studies, software and much more. Call **800-TENSAR-1**, e-mail [info@tensarcorp.com](mailto:info@tensarcorp.com) or visit [www.tensarcorp.com](http://www.tensarcorp.com).



*Mesa® Retaining Wall Systems are geogrid-reinforced, integrated systems that can be used to effectively address challenging grade changes at mining sites.*



*The Spectra Roadway Improvement System is engineered to reinforce soft soils and distribute heavy loads for both paved roads and unpaved haul roads.*



# Tensar®

Tensar International Corporation  
2500 Northwinds Parkway, Suite 500  
Alpharetta, Georgia 30009

800-TENSAR-1  
[tensarcorp.com](http://tensarcorp.com)

*Distributed by:*