

# TENAX 3D-GRIDS

THE FIRST REAL 3D GEOGRID



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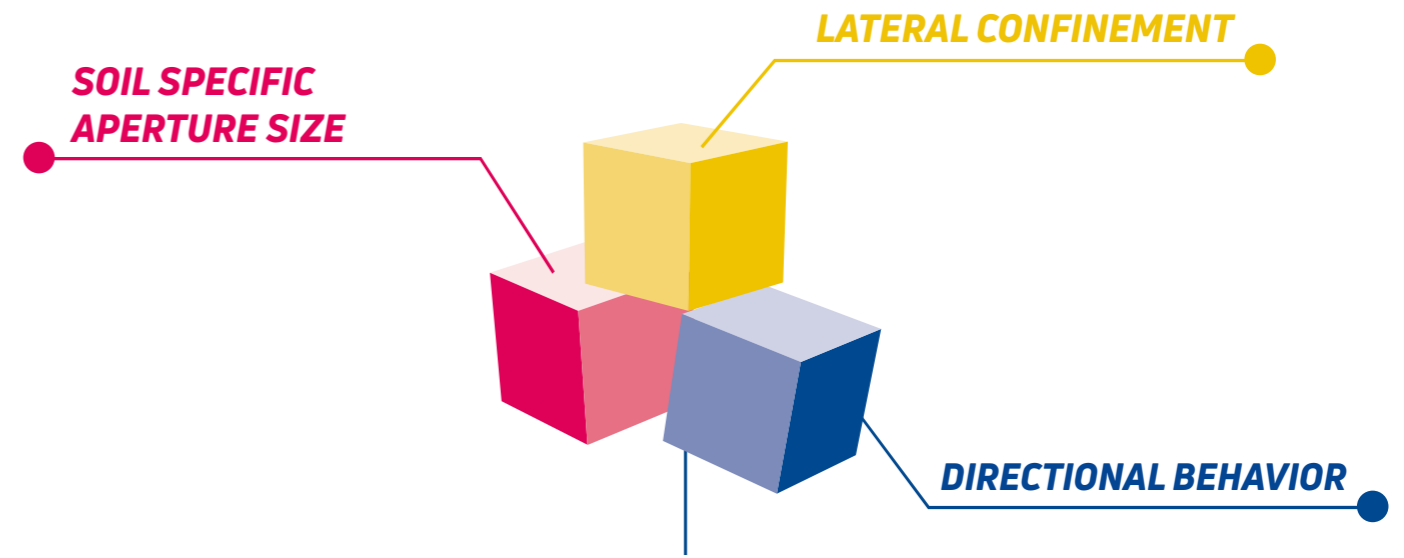


**RISE  
FROM FLATNESS**

## TENAX 3D-GRIDS

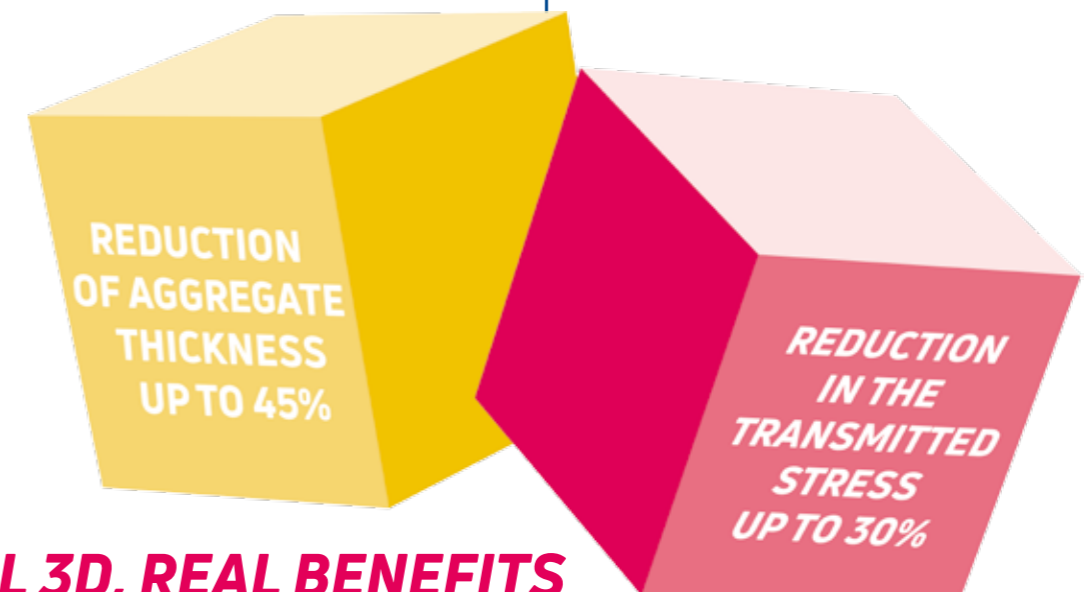
AN ADVANCED APPROACH TO ROAD STABILIZATION

3D-Grids provide advanced gripping of soil by:



LEADING TO BETTER  
SOIL INTERLOCKING  
AND GENERATING

**IMPROVED  
PERFORMANCE**



**REAL 3D, REAL BENEFITS**

# TENAX 3D-GRIDS

## HEIGHT MAKES THE DIFFERENCE

US PATENT N. US8,206,060 B2

EUROPEAN PATENT N.2236668

CHINA PATENT N. ZL201010157334,1

ITALIAN PATENT N. 1393817

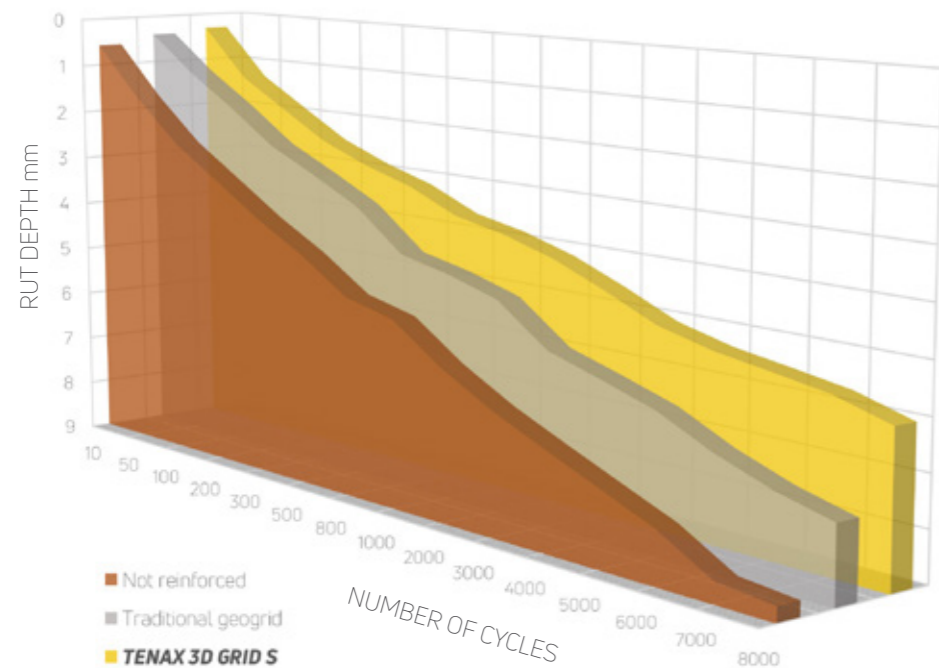
RUSSIAN PATENT N. 2520597



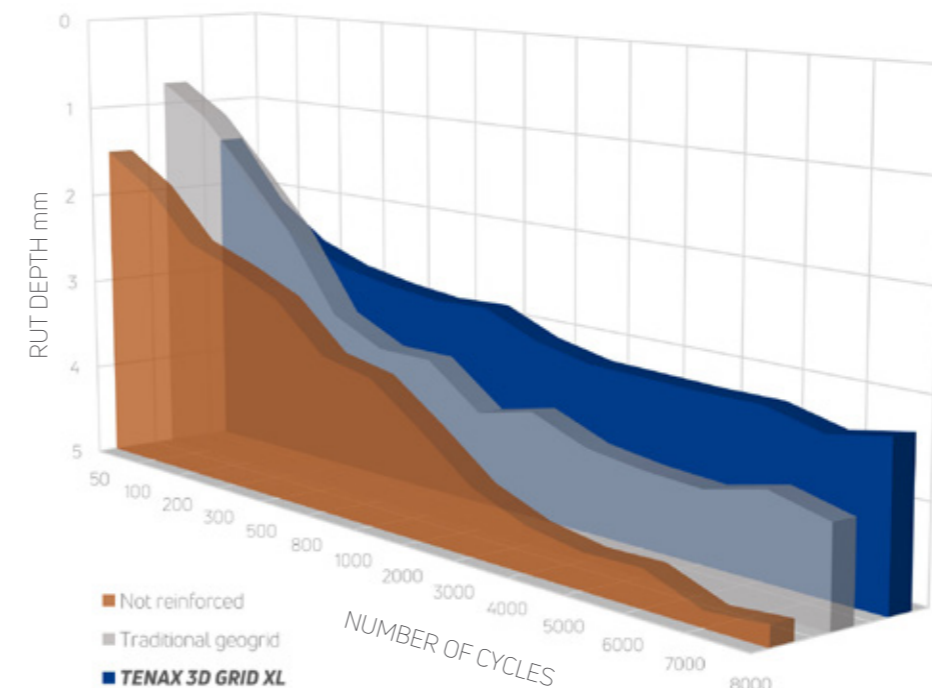
TENAX 3D GRIDS are a significant advancement over traditional flat or planar base reinforcement: geogrids by adding height, creating a real third dimension.

Higher profile ribs and junctions, when developed with TENAX technology, allows high levels of lateral confinement. When combined with the soil specific aperture sizes improves interlocking between geogrids and soil, resulting in unique products specifically designed to improve stress distribution, thereby reducing rutting and aggregate base layer thickness for roads and railways.

TENAX 3D GRIDS behavior was tested in collaboration with the Transport Science Department of the University of Tennessee.



**RUT DEPTH**  
**-20%**  
 COMPARED TO TRADITIONAL GEOGRIDS  
**-31%**  
 COMPARED TO NOT REINFORCED SOIL



**RUT DEPTH**  
**-17%**  
 COMPARED TO TRADITIONAL GEOGRIDS  
**-31%**  
 COMPARED TO NOT REINFORCED SOIL

## TENAX 3D-GRID S

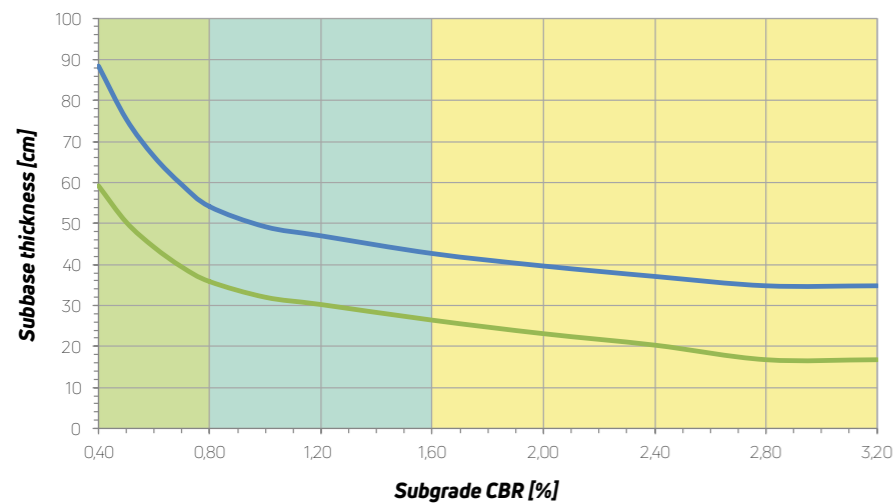


Ideal for reinforcing medium-small sized granular soils, having an aperture of 30x30 mm.

## TENAX 3D-GRID XL



These geogrids are characterised by significant dimensions in all three main directions. The particularly thick, concave longitudinal rib section, combined with the 60x55 mm aperture size of the geogrid, allows optimum interaction with coarse granular materials.

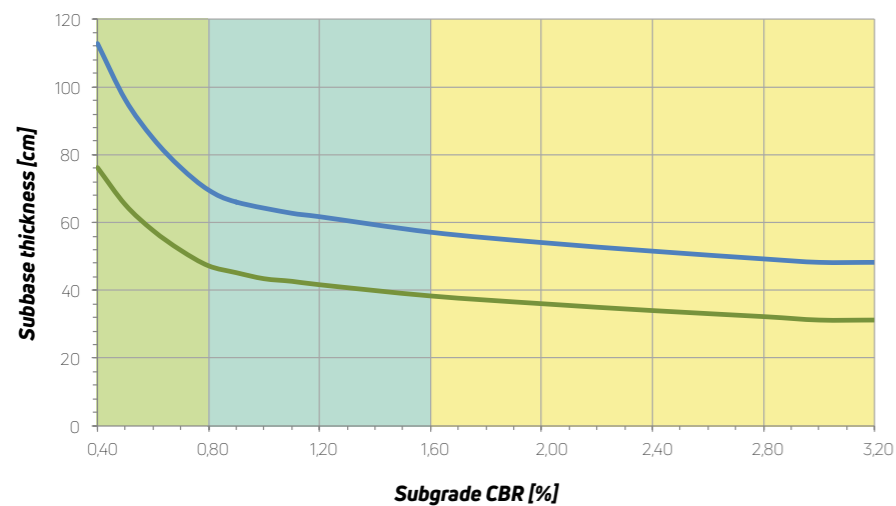


**7.5 cm rut, 80 kPa, 1200 passes, subbase CBR 20%**

UNREINFORCED

3D GRID S

Subgrade consistency  
 Soft  
 Medium  
 Stiff



**3.8 cm rut, 80 kPa, 1200 passes, subbase CBR 20%**

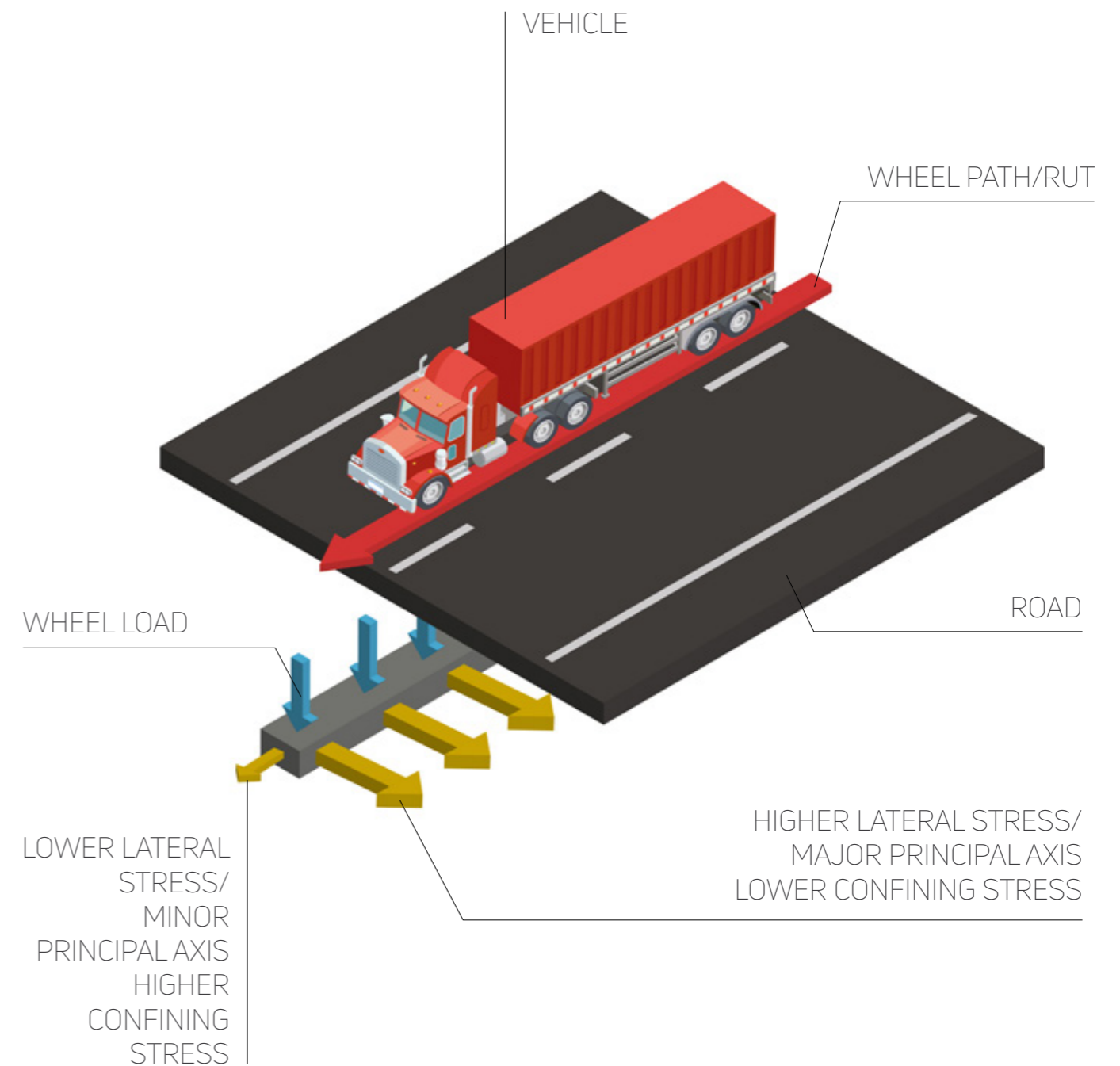
UNREINFORCED

3D GRID XL

Subgrade consistency  
 Soft  
 Medium  
 Stiff

## TENAX 3D-GRIDS

DESIGNED FOR EVERY TYPE OF SOIL



Wheel loads on a road are distributed along a channelized geometry (longitudinal direction) and can be analyzed considering plain strain conditions. The state of stress is directed mostly in vertical and transversal lateral direction, so traditional flat geogrids, characterised by a bi-directional behavior, are not optimized for road and railways applications. TENAX 3D GRIDS have been tested in cooperation

with the Transport Science Department of the University of Tennessee: an extensive campaign was carried out using the APA (Asphalt Pavement Analyzer), a specific apparatus to assess the performance of road pavements. The test confirmed that TENAX 3D GRIDS have **a better performance compared to the traditional flat or planar geogrids**.