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## NATO Lithuania

### Lithuania

Tensar mechanically stabilised layers ensured a reconstructed local road was capable of carrying heavy military equipment over very weak ground.

#### CLIENT'S CHALLENGE

A local road in central Lithuania had become cracked and damaged over time and needed replacing. As it was also used by military traffic, the new road had to meet NATO standards, with a trafficking capacity of more than 1,000kN – a significant challenge, given the weak and variable underlying clay soils.

#### TENSAR SOLUTION

Tensar TriAx geogrid was incorporated into the new unpaved road's granular sub-base and its top surface of crushed dolomite, to create mechanically stabilised layers that meant the new pavement was capable of supporting the heavy vehicles. Tensar's mechanically stabilised layers also doubled the operational life of the new road, compared with traditional solutions.

### B E N E F I T S

- **Increasing trafficking capacity** of a local road over weak and variable clays
- **Enabling** the road to carry military vehicles weighing more than 100t
- **Doubling operational life**, compared with traditional solutions

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#### PROJECT DETAILS

Application

**Road reconstruction  
Subgrade stabilisation | No. 405**

Client

**Šiaulių district municipality**

Tensar Distributor

**Mosas**

Main Contractor

**Limega**

Design Office

**JSC ATAMIS**

## PROJECT BACKGROUND

Because the new unpaved road was going to be used by both local traffic and military vehicles weighing more than 100t, it had to meet NATO's Military Load Classification 120, ensuring it could support a maximum load of 1,086kN.

This was a significant challenge – ground investigations revealed the underlying clay soils were variable and very weak, with an average CBR of just 1.8%, making them unsuitable for carrying such heavy vehicles. And, because Lithuanian design guidelines use a CBR of 12%, it was going to be difficult to design, and check, a conventional 'dig and replace' approach.

Instead, Tensar and its Lithuanian partner Mosas developed a road pavement design that incorporated Tensar TriAx geogrid in both the road's sand and gravel sub-base and in its top surface of crushed dolomite. These mechanically stabilised layers provided sufficient support for the very heavy loads and also mitigated the risk of damage through differential settlement of the weak soils below. A separation geotextile was placed on top of the ground to prevent fine grained material mixing with the road's subbase.

Tensar and Mosas' design overcame the challenge of following the standard guidelines that were unsuitable for the very weak subgrades, while delivering a long-lasting road capable of supporting the heavy military traffic for years to come.



*The local road, which was sometimes used by military traffic, had become cracked and damaged due to settlement of the underlying weak clay soils. Photos of the road before and after reconstruction.*

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