

The mechanically stabilised layer provided a flexurally stiff foundation to the runway extension

## **TriAx<sup>®</sup> takes off at Tartu**

A mechanically-stabilised layer using TriAx<sup>®</sup> geogrid provided a strong foundation for a runway extension at Tartu Airport.

### **CLIENT'S CHALLENGE**

Excavations for a runway extension at Estonia's second international airport revealed very weak and variable saturated ground. Client Tartu Airport needed a solution that provided a strong foundation for the runway pavement; one that could be implemented quickly and easily.

### **TENSAR SOLUTION**

Tensor's TriAx geogrids were incorporated in a granular mattress placed on the weak ground to form a mechanically stabilised layer, providing a flexurally stiff foundation to the subbase and the runway pavement structure above.

## **Tartu Airport runway extension**

Subgrade stabilisation

 Estonia

### **BENEFITS**

**Innovative approach**  
to dealing with difficult  
ground conditions

**Fast construction**  
ensured the runway  
opened on time

**Flexurally stiff  
foundation**  
to prevent differential  
settlement



The TriAx geogrid was incorporated into a granular mattress beneath the runway pavement structure.

## PROJECT BACKGROUND

Tartu Airport, which serves Estonia's second city in the southeast of the country, was first opened in 1946. Plans to expand and update the airport, to support economic development of the region, involved extending the runway by 420m to allow it to handle larger commercial aircraft.

Investigations indicated ground conditions were poor beneath the extension area, with weak clayey soil (with a CBR 1-3 %) and a seasonally artesian water table. However, when construction began, excavations revealed the situation to be far worse than first thought, with the subgrade too weak and saturated to build the runway as originally planned.

There were also concerns that the seasonal changes in groundwater level would result in water entering the pavement structure, lowering its overall bearing capacity in time.

Contractor Tref, working on behalf of client Tartu Airport, needed a solution that would give sufficient support to the runway pavement and mitigate against differential settlement; one that could be built with minimal delays to the construction programme.

Tensar proposed installing TriAx geogrids in a granular mattress placed on the weak ground. This mechanically stabilised layer created a strong foundation for the runway pavement structure and minimised the risk of differential settlement, by providing support over areas of weaker ground.

The Tensar solution was quick to install, allowing construction of the runway extension to finish on time.

Contractor:

**Tref Ltd**

Distributor:

**OÜ Roadservice**

Client:

**Tartu Airport Ltd**

**Tallinn Airport Ltd**

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