

DuPont™  
**Typar® SF**  
GEOTEXTILE

**CASE STUDY: Railway renewal in Turkey**



**Project title**

Railway renewal in Turkey

**General information:**

**Date of project:** 2002 – 2006

**Location:** between Susurluk and Bandırma in Turkey.

**Project description:** this railtrack has been constructed over poor soil leading to deformations and high maintenance costs. Rail track renovation and the simultaneous installation of a geotextile separator and filter provided the solution.

**Owner:** Turkish Railway Department.

**Contractor:** Tekno İnşaat Makinaları San. Ve Tic. A.Ş.

**DuPont™ Typar® SF Benefits:** low elongation with a high degree of strength with very thin geotextile.

**Style:** DuPont™ Typar® SF 85.

**Size:** 20 km long.

## Installation

- The renovation of the railtrack was facilitated using a special railtrack renovation machine. This machine lifts the rail track including the sleepers and remove the top layer of contaminated ballast. Then DuPont™ Typar® SF is unrolled, new and cleaned ballast is dropped on top of the geotextile. The track is placed back onto the ballast layer and more ballast is added, which will be compacted in a separate step.
- Thickness of new aggregate (ballast) layer on top of the geotextile: approx. 30 cm.
- Ballast: Diameter 50 - 100 mm.

## Comments:

DuPont™ Typar® SF was considered to be the best option not only because of its unique combination of properties, which results in the high damage resistance (high energy = high damage resistance). But also because it is so thin. The geometry of the renovation equipment dictates the amount of space available for the geotextile roll. The thinner the geotextile is, the more meters are on a roll of 30 cm. With a speed of 80 m/h the renovation process is slow.

For each geotextile roll exchange more time is lost. Using DuPont™ Typar® SF reduces the number of interruptions due to its minimal thickness and thus accelerates the installation. Not only does DuPont™ Typar® SF fulfill the required properties despite its "thinness", this unique feature here even is an advantage!

## Selection:

- The entire DuPont™ Typar® SF range is CE certified by ItBU (Institut für textile Bau- und Umwelttechnik) as a notified body.
- DuPont™ Typar® SF has previously been successfully installed in this type of installation.
- DuPont™ Typar® SF has previously shown/proven an excellent long term performance with a high damage resistance.
- Reference article: the use of spunbonded geotextile in railway track renewal St. Petersburg-Moscow; E.S. ASHPIZ, University of Transport Engineers, Moscow, Russia, R. DIEDERICH & C. KOSLOWSKI, DuPont de Nemours, Luxembourg, IGC Nice 2002.



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