



Ankara–Konya High-Speed Rail Line Slope Erosion Control Using Fortex Composite Mat

On the slopes at KM 55 of the Ankara–Konya High-Speed Rail Line, environmental conditions such as heavy rainfall, wind, and daily temperature fluctuations have caused persistent erosion.

This erosion both weakens slope stability and leads to contamination of the ballast along the track.



Challenges Encountered:

The slope surfaces had been exposed for an extended period, resulting in surface degradation due to erosion and steeper slope angles than originally designed.

This situation required the application to be carried out on-site in a robust and durable manner.

Industry: Geosynthetics Applications
Application: Erosion Control
Location: Ulukışla, Karaman, Türkiye
Product:  **ForTexMat**
Erosion Control Products

Case Studies

Solution

These challenges were effectively addressed through the **technical advantages of FortexMat 60/60 PC Composite Brown Mat** and the engineering support provided during the project:

- Initially, a demonstration section was installed and the product performance was monitored for approximately 1.5 years. The performance observed in the demo area was satisfactory, leading to a full-scale application covering a total area of **120,000 m²**.
- Thanks to its UV resistance, FortexMat withstands the harmful effects of sunlight and provides long-term slope protection.
- Its **high tensile strength and composite structure** protect the slope surfaces from erosion, prove the product's performance on-site, and prevent erosion from disrupting the service and operation of the high-speed rail line.
- Due to surface degradation and wind effects, the composite mat was reinforced with additional surface anchors to ensure stronger adhesion to the slope.

As a result, the slopes receive long-term protection, ballast contamination is prevented, and the operation of the high-speed rail line continues without interruptions.



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