



(Left) bare soil should not be left unprotected; (Right) high-performance durable ECBs protect the surface and provides a matrix for vegetation to take root



Erosion Control Nº 447

Ahmedabad-Udaipur Broad Gauge Railway

📍 Udaipur, India

CONSTRUCTED IN 2019

Benefits

50m high

railway embankment soil
erosion controlled by coir
blanket

Reduced detachment of topsoil

before vegetation grows

Promotes and supports vegetation growth

giving resistance to erosion

Railway Runaway

The Ahmedabad-Udaipur line is a railway route in the Western and North Western zones of Indian Railways. It plays an important role in providing connectivity to North India and Eastern India.

CLIENT'S CHALLENGE

This rail corridor passes through the Aravalli hills of Northern Gujarat and the Udaipur division of Rajasthan. The high mountains and deep valleys across this route require high embankments to support the railway track formation. The side slopes of these embankments were constructed at 2:1 (horizontal to vertical) with intermittent berms. They were prone to surface run-off causing soil erosion during monsoon rainfall, which required protection.

TENSAR SOLUTION

While the slope stability of the 50m high embankment was assessed by the design and built contractor, Tensar proposed erosion control measure using coir blankets. Composite erosion control blanket comprising a 650gm/m² coir blanket combined with double PP (polypropylene) netting (19mm x 19mm opening) and technical supervision during installation were provided, in line with North-Western railway requirements. It ensures effective erosion control caused by rain splash and surface runoff, as well as supporting vegetation root growth even after the coir matrix has degraded.