

CASE STUDY

Powderly, TX Road Rehabilitation

Powderly, Texas



PROJECT OVERVIEW

PRODUCT:

Presto GEOWEB®

ENGINEER:

Brazos Environmental

CONTRACTOR:

Reynolds Asphalt

CHALLENGE:

The primary issue identified was the severe pavement distress, characterized by cracking and rutting, which necessitated a full-depth roadway reconstruction. This distress indicated underlying problems with the subgrade stability, leading to a compromised road surface that could not be simply patched or overlaid. The remote location of the project site further complicated the situation, making material access and transportation challenging.

SOLUTION:

To address these challenges, TXDOT, in collaboration with UTEP, Presto Geosystems,, and GeoSolutions, opted for an innovative geosynthetic solution using Presto's GEOWEB Geocell technology. The final design featured a 4-inch depth GEOWEB system filled with an aggregate base material over a prepared and compacted subgrade. The aggregate base course was 6 inches thick, with 2 inches left unbound, providing a strong sublayer before applying the asphalt wear course.

PROJECT GOALS:

The roadway project in Powderly, TX, focused on rehabilitating an existing farm-to-market asphalt road that was in significant distress. The project involved a complete reconstruction due to visible cracking and rutting, compromising the pavement's integrity. Given the road's remote location and low traffic conditions, the client sought an economical solution to ensure a durable and long-lasting repair.

SITE CONDITIONS:

Several constraints were identified during the planning phase. The most significant included the need for a cost-effective solution due to budgetary constraints, the necessity to improve subgrade stability to prevent future cracking and rutting, and the logistical challenges posed by the remote location. Due to these constraints, traditional cement treatment methods were considered but deemed less suitable.

OPTIMIZATION HIGHLIGHTS:

The project's highlights include the successful application of GEOWEB technology, which provided an economical and efficient solution to the subgrade stability issue. The construction process was completed on time and within budget, demonstrating the effectiveness of the chosen method. The use of ATRA® keys for securing the GEOWEB panels and temporary stakes to maintain material position during infill were notable techniques that ensured the integrity of the installation. Overall, the project resulted in a durable and resilient roadway capable of handling future traffic demands.

For more information, ask an expert: infogeo@ferguson.com