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CASE STUDY: NOVALINER 24

OKLAHOMA DEPARTMENT OF TRANSPORTATION PROJECT

The Details

- **Type of project:** Construction of a 7-mile stretch of road along I-35 near Ardmore, Oklahoma
- **Size of project:** Approximately 630,000ft² of NovaLiner 24
- **Traffic Information:** Heavy traffic (I-35 is a Major highway running north and south)
- **Duration:** Approximately 2 years

The Challenge

The I-35 is a major highway running North & South from Laredo, Texas all the way up to Duluth, Minnesota. A seven mile stretch of the highway near Ardmore, Oklahoma is prone to undulations in the pavement owing to expansive clay beneath the road surface. As the moisture content of the clay increases the clay tends to swell which causes a non-homogenous expansion and contraction.

This area (known as the Ardmore basin) experiences frequent changes in moisture content depending on weather conditions and the situation is compounded by wild temperature variations between 0°F in the winter (-18°C) and 110°F (43°C) in the summer.

These undulations have a detrimental effect to the road surface and as a consequence, the I-35 has required several repairs in this area since its construction in the late 1960's.



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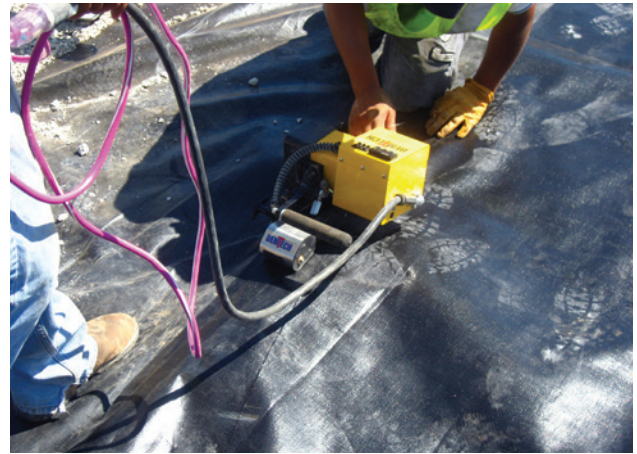


The Solution

Because the I-35 is a heavily travelled major roadway for both passenger vehicles and heavy trucks, the Oklahoma Department of Transportation was looking for a long term solution to maintain the problem soils that had necessitated multiple repairs over the years. The use of a moisture barrier, to control the swelling in the clay subgrade, was ultimately selected based on the principle that by shielding the clay, the geomembrane would minimize the opportunity for significant moisture changes in the pavement subgrade.

The Aquamaster NovaLiner 24 exceeded the original specification and had several cost advantages over alternative materials. It was selected as the premier geomembrane because of its:

- Strength Properties
- Water Impermeability
- Lighter weight
- Portability
- Puncture resistance,
- Soil stabilization on slopes
- Cost savings



Design Involved

To maximize moisture control Aquamaster geomembrane was laid down on a base of lime stabilized subgrade and would be covered with a layer of crushed stone. Continuously reinforced concrete pavement with a drainable base were placed upon the crushed stone.

The geomembrane was brought to the site in prefabricated panels that were between 48' to 60' wide and 200' long and covered approximately 630,000 SF. The panels were heat seamed together to insure a water tight membrane. The use of prefabricated panels ultimately saved time and money by reducing the number of seams that had to be welded in the field.

NOVA LINER

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