

Oklahoma I-35

WHERE TOUGH AND SMOOTH GO HAND IN HAND



The “smoothest pavement in the world” carries a heavy load.

I-35 is a 1,500-mile-long NAFTA (North American Free Trade Agreement) strategic corridor on which heavy goods are carried between Canada, the United States, and Mexico.

I-35 already carries a greater percent of the truck traffic from Mexico into the United States than any other interstate, a true “river of trade” for the Americas. Rapid growth projections have driven states along the route to construct major highway improvements.

The Oklahoma Department of Transportation is in the process of widening I-35 from four to six lanes plus frontage roads through Oklahoma City. They have chosen continuously reinforced concrete pavement (CRCP) to handle the non-stop truck and automotive traffic.

CRCP provides superior performance. That's why ODOT, and other DOTs throughout the country, are routinely using CRCP to replace aging pavement or to build new.

Best-Value Pavement

CRCP is, simply, concrete pavement that is reinforced with steel bars. The reinforcing steel controls the width of the transverse cracks and holds them closed. The transverse cracks do not impair the structural integrity of the pavement.

The reinforcing creates a pavement that is considerably stronger than any other pavement type. Because of its greater durability, longer life expectancy, and minimal maintenance requirements, CRCP provides the best long-term value, by far, of any pavement.

Slipform paving of the I-35 mainline.



“CRCP is an outstanding pavement and we believe that it has a definite place in the state’s pavement inventory.”

– Tim Borg
ODOT Assistant to
the Chief Engineer



Not only is the pavement incredibly durable, but the superior smoothness that can be achieved and sustained (see “Ten Times Smoother,” back) translates to major benefits for those who use it. Studies have shown that built smooth, CRCP will remain smooth.

Ten Times Smoother

ODOT designed the I-35 pavement section in accordance with standard design procedures, using 10-inch-thick pavement, reinforced with 0.7 percent steel. The subgrade consists of a 12-inch-thick layer of ODOT Type "A" aggregate base overlain by a 4-inch-thick layer of open-graded base.

ODOT has adopted stringent smoothness criteria, tied directly to the contractor's award fees. Based on measurements by a California profilograph, if the accumulated total vertical deviation ("profile index") is less than 6 inches per mile, the contractor receives a 2 percent incentive award and an additional 3 percent award if the profile index is less than 3 inches per mile.

Duit Construction Co., Inc., the contractor on the I-35 widening between SE 33rd Street to SE 39th Street, achieved a remarkable average 0.55 inch per mile profile index, over 10 times smoother than the ODOT criteria. Wittwer Paving achieved similar results on the I-35 segment between SE 39th Street and SE 59th Street.

For the outstanding smoothness and quality achieved on I-35, Duit Construction won the 1999 Excellence in Concrete Pavement award for divided urban highways from the American Concrete Pavement Association.



- 10-inch thick concrete pavement
- Reinforced with 0.7 percent steel
- 4 inch-thick layer of open-graded base
- 12 inch-thick layer of ODOT Type A aggregate base
- Rebar placement by tube-fed method

Labor Conquers All Things

Both Wittwer Paving and Duit Construction incorporate Oklahoma's state motto, Labor Omnia Vinci (Labor Conquers All Things), directly into their operations. Building best management practices and instilling deep pride in their workforce translates directly into super-strong and super-smooth pavement.

For example, making sure that the stringline, which is the primary guidance system for most paving equipment, is set precisely and



protected from damage during paving has the greatest potential to affect smoothness. A continuous supply of concrete, crucial in maintaining a consistent paving speed, also has a direct impact on smoothness.

Constantly monitoring the concrete buildup in front of the paver also creates smoothness. If the concrete gets too high in front of the paver, a "wave" propagates, resulting in a slight mound behind the paver. Conversely, too little concrete creates a low spot.

Both contractors put quality control into practice by giving a significant percent of the incentive award received on projects back to their employees. The contractors know that pavement smoothness starts with their personnel.



And State DOTs know that building a quality CRCP ultimately pays off in more satisfied customers and decreased costs.

