

SOLVENT-FREE PASS-R RAP IS A HIT

By Shane McDade, Texas Road Recyclers

The recycled asphalt pavement (RAP) overlay that was recently performed for TxDOT's Abilene District – on FM 2287, near the town of Cross Plains in Callahan County – represents a joint effort on the part of the Texas Department of Transportation (TxDOT) Abilene District; TexOp Construction, LLP; Western Emulsions, Inc. and Texas Road Recyclers (TRR) to continuously improve both the quality and environmental safety of the RAP recycling process. This solvent-free emulsion also promises a longer 'shelf life,' or window of workability than RAP solvent-free emulsions.

A New RAP Design

Like most recycled RAP jobs, the Abilene job began with TRR sampling material to be recycled for mix-design purposes. Unlike most previous RAP jobs, however, the asphalt emulsion used for the Abilene mix design was free of solvents that can be unsafe to workers and detrimental to the environment. Although solvent-free emulsions have been used occasionally in the past to recycle RAP, it was always for immediate RAP use, before the asphalt emulsion used as treatment had a chance to 'break' and become ineffective as a binding agent. For RAP that was to be stockpiled for future use, solvents were used in the emulsion to keep the asphalt 'live' for as long as possible.

The asphalt emulsion used in Abilene was developed by Western Emulsions, Inc. as an environmentally safe alternative to solvent-based emulsions when stockpiling RAP. Al



TxDOT Abilene District crew overlaid several miles of FM 2287 near Cross Plains with PASS-R, a new design of solvent-free recycled asphalt pavement (RAP) developed by Western Emulsions, Inc.

though the exact formulation is a patented trade secret, it was designed around stable (safe) rejuvenates rather than unstable (unsafe) solvents, along with polymers, for increased durability in the finished RAP product. The emulsion is marketed under the brand name PASS-R.



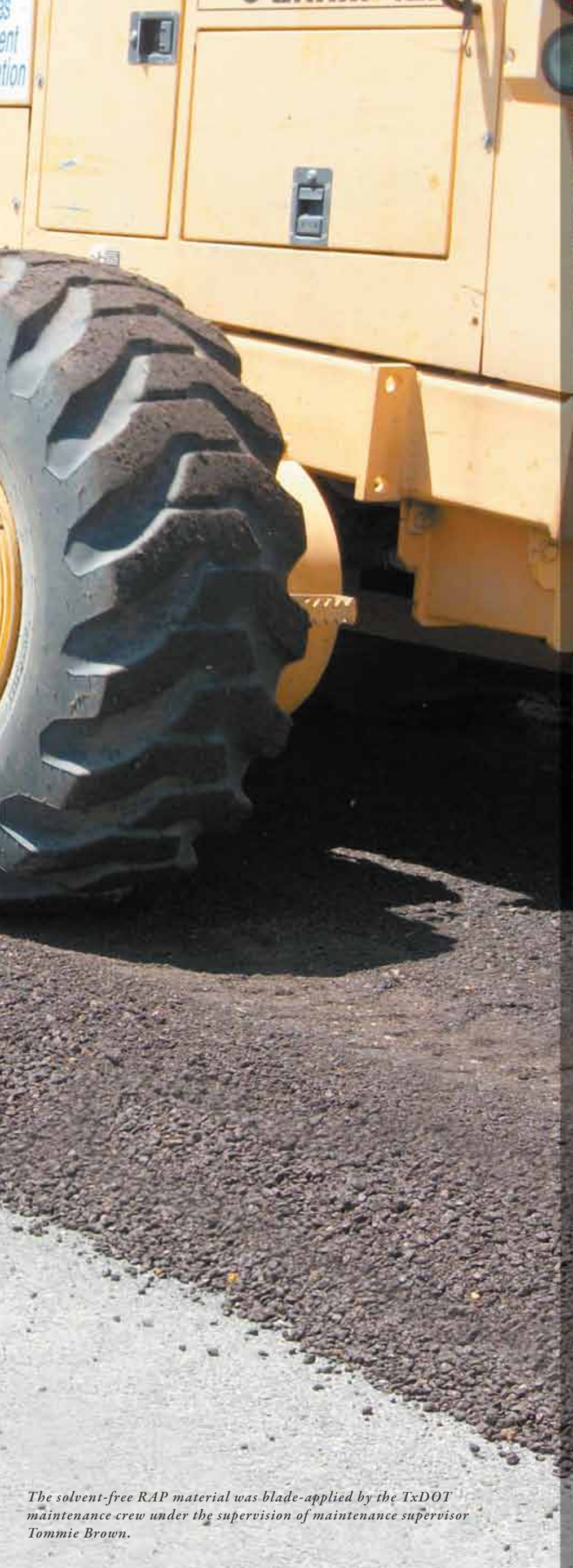
Owner – TxDOT Abilene District

General Contractor – TexOp Construction, LLP

Asphalt Emulsion – Western Emulsions, Inc.

Mix Design and QC – Texas Road Recyclers

Solvent-Free PASS-R RAP Is a Hit in Abilene



PASS-R's use for RAP recycling in Texas began with Western Emulsions' partnering with TRR to determine the product's suitability for use in RAP recycling. After initial laboratory testing proved promising, a field trial was run during a job in Parker County.

The field trial was performed during TexOp Construction's ongoing RAP job in Parker County, and was approved by John Roth, commissioner for Parker County Precinct 3, and Elton Glidewell, maintenance supervisor. The field trial was successful: The RAP produced an excellent coating and, with time, resistance to breaking in the stockpile.

After PASS-R was certified by TxDOT at the state level as suitable for use in TxDOT projects, its use for the TxDOT Abilene project was approved by Alan Hufstutler, P.E., area engineer for the Abilene area office. Hufstutler is an advocate of environmentally responsible emulsions.

Production

TexOp Construction began production on the Abilene RAP job on August 3rd. The RAP was processed through a Kolberg Pioneer JCI model 52 crushing plant and Astec ProSizer screening plant. The advantage of the ProSizer is that it resized the RAP to more closely resemble virgin aggregate, so it could incorporate more uniformly into the new mix.

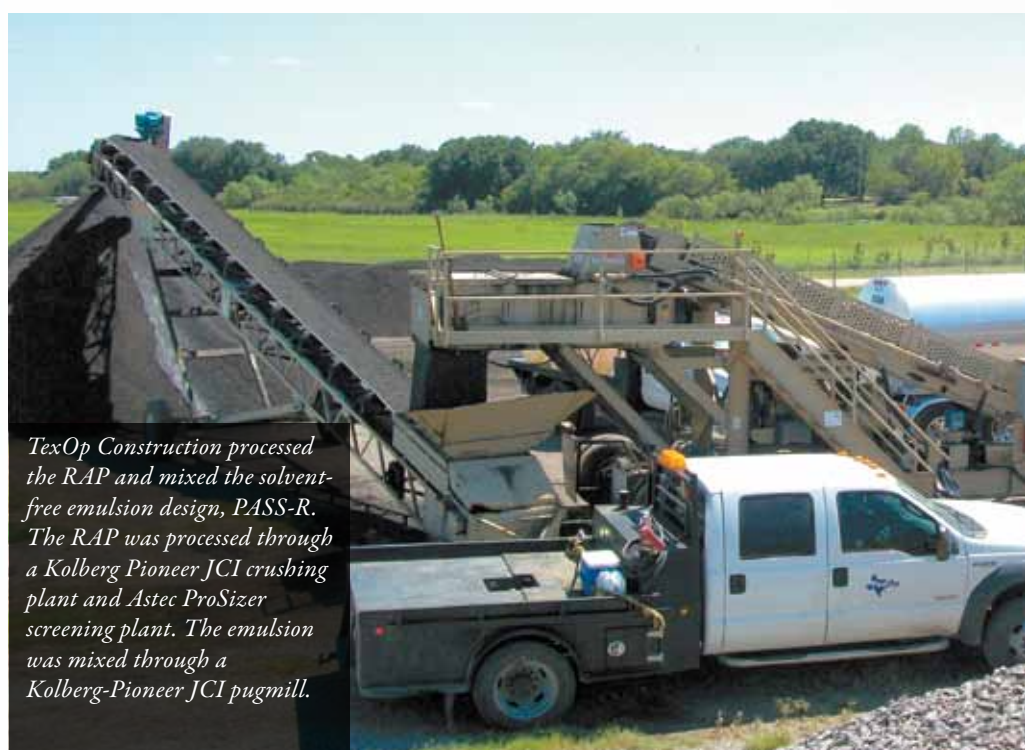
TexOp mixed the emulsion through their Kolberg-Pioneer JCI pugmill, which had been relocated to a site near Cross Plains. Production went well, and initial evaluation of the material showed coating that is far superior to previous emulsions used for RAP Recycling.

On August 4th, the material was blade-applied by the TxDOT maintenance crew under the supervision of maintenance supervisor Tommie Brown. The material bonded well and created a new paved surface.

"They are using a very good mixing process," said Alan Hufstutler. "The material has a really good gradation and was easy to place. We like it a lot."

On a section of FM 2287, the TxDOT crew began placing the new solvent-free emulsion within 24 hours of processing. That overlay project continued for almost two weeks. Hufstutler added, "We are going to keep some back to see how long it will give us as far as shelf life. We plan to use the material on various blade-patching maintenance on various roads in addition to this overlay." 🚧

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TexOp Construction processed the RAP and mixed the solvent-free emulsion design, PASS-R. The RAP was processed through a Kolberg Pioneer JCI crushing plant and Astec ProSizer screening plant. The emulsion was mixed through a Kolberg-Pioneer JCI pugmill.