TransTech
TRANSTECH SYSTEMS, INC.

TransTech's Products Increase Road Safety

How Can This...

(SWM) Shoulder Wedge Maker

And This...

(NWJM) Notched Wedge Joint Maker

Prevent This?

This vehicle left the roadway and re-entered out of control and hit a school bus head-on.

Shoulder Wedge Maker

- **Shapes Mat Edge with a 30 Degree Slope**
- **Provides more gradual vehicle transition on and off the pavement during emergencies**
- **Meets AAA recommended slope criteria**

Notched Wedge Joint Maker

- **Provides safety off the mat during construction periods**
- **Provides notched and wedge joint shaping for increased density of the joint**
- **Easy to adjust on the run**

TransTech safety products **will...**
Save money by reducing construction time, material and labor.
Easy to install and fits most highway class pavers

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Build Your Roads Safer & Better (And Save Money While Doing It!)

The Issue

On highways without paved shoulders:
The shoulder edge tends to degrade and adversely affect the road quality. The shoulder edge drop-offs create a safety hazard for vehicles leaving the driving lane.

The Safety Issue

With standard drop offs, cars leaving the driving lane may lose control as the vehicle leaves the pavement. Once off the pavement, reentry is extremely difficult without over steering and again loss of control.

The Road Quality Issue

Since there is no pre-compaction at the lane edge, it has a tendency to crumble under use. Natural elements erode the edge of the pavement thus narrowing the lane.
The natural elements of rain, snow and wind have the effect of exposing the untreated edge even when backed by aggregate or soil. With stone or soil the weathering agents erode the fill and expose the near vertical edge. Water infiltration with freeze and thaw cycles will crack and crumble the road edge. This will narrow the driving area.

Potential Liability

Road Injury Prevention & Litigation Journal reported that narrow shoulder, excessive slope, and edge drop-off make Louisiana DOTD liable for driver's paralyzing injuries.

The reported award for this accident was in excess of $3.3 million. This is not a-typical. This is actually the norm. Main issues in this case were:

- 2-inch to 3-inch shoulder drop-off
- Credibility of experts who present contradictory conclusions
- Measurements at site taken eleven months after crash admissible
- 3:1 angle of slope on shoulder considered hazardous
- Shoulder narrower than four-foot standard

It is reported that tort costs for these types of accident run in excess of $4 billion a year. Yes that's billion with a "B".

Suggested Remedy

Several studies, including a 1994 AAA Foundation for Road Safety publication titled The Elimination or Mitigation of Hazards Associated with Pavement Edge Drop-offs During Roadway Resurfacing and a 1982 Texas Transportation Institute paper titled Pavement Edges and Vehicle Stability – A Basis for Maintenance Guidelines, suggest the use of a fillet wedge less than 45° on the shoulder edge may allow vehicles to traverse the road edge with little or no loss of control.
The affect of the fillet is to prevent the phenomenon known as tire scrubbing from occurring. The ramp so to speak gives supported tread area for the vehicle to maneuver onto the road surface.

The Solution

To address road quality, use a shoulder wedge maker on the paver that creates an edge with higher compaction.
To address safety, use a shoulder wedge maker on the paver that creates an edge with a fillet wedge with an angle of less than 45°.

The point here is to use these suggested devices during the paving process rather than in a subsequent operation, thus saving money, time and labor. This requires that the extruding device be an integral part of the paving device.

The Program

TransTech Systems Inc. and the New York State Department of Transportation entered into a contract to demonstrate three shoulder wedge devices previously tested in FY2003. The purpose was to demonstrate the use of each device, evaluate the results, and select the best design for future testing.

Conclusion

The TransTech Shoulder Wedge provided ease of use and created a shoulder wedge that had a good finish and good durability and met the FHWA and AAA slope criteria.

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Simple Solutions to Not-So-Simple Problems

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