Federal Highway Administration
Every Day Counts
Innovation Initiative

How Does Safety Edge Compare to Conventional Paving?

Conventional Paving: Vertical Edge Drop-off

In the conventional asphalt paving process, approximately 80 percent of compaction is achieved by the screed, then a series of rollers is used to provide some additional compaction. However, at the edge of the pavement, the asphalt material is not well compacted and lays somewhat loosely at about a 45-degree angle. This loose material cools faster than the rest of the asphalt and typically breaks off.

Before the project is complete, the shoulder material is brought flush with the top of the pavement, so that drivers are not exposed to a drop-off initially.

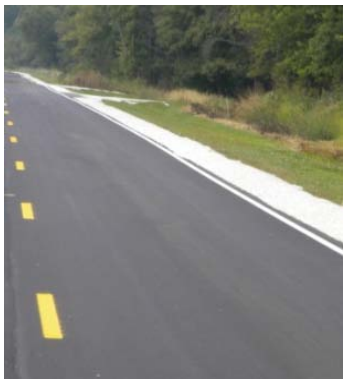
After a few months, the shoulder begins to settle and the edge is exposed. Erosion also works on this material to wash it away. On narrow pavements, or in certain locations like curves or mailboxes, the unpaved shoulder may be worn down by tires as well. The loose asphalt at the edge is lost with the shoulder material and the hard pavement edge is nearly vertical, with a rounded top. This edge can cause tire-scrubbing in a roadway departure.

ADVANTAGES: We've always done it this way—no training needed.

DISADVANTAGES: Where edge is exposed, drivers may encounter tire-scrubbing and lose control, potentially resulting in a crash. The pavement edge is more likely to ravel and break off.

Paving with the Safety Edge: Mountable Drop-off

There is one change with the Safety Edge—a shoe is attached to the paver to consolidate the edge material into a tight 30-degree shape as it comes off the screed. Compactive rolling of the rest of the pavement proceeds normally, as no additional compaction is necessary.



As with conventional paving, the shoulder material is brought flush with the top of the pavement before the project is considered complete. Again, drivers are not initially exposed to a drop-off.

Shoulder material will settle, erode, or be worn down by tires, similar to conventional pavement. However, the edge holds its shape (if a proper shoe provided the intended compaction at laydown), so there is no lost material in the process. More importantly, the 30-degree edge that is exposed does not induce tire scrubbing. Drivers who have dropped a tire over this edge are very likely to be able to return to their lane without losing control as they attempt to steer back onto the pavement.

ADVANTAGES: Safer for drivers attempting to steer back onto pavement. Costs are low to none, depending on project parameters. The pavement may last longer.

DISADVANTAGES: Requires training and a small, relatively inexpensive piece of equipment.

Contact Information:

To learn more about EDC, visit:
http://www.fhwa.dot.gov/everydaycounts

For training or more information on this Every Day Counts Initiative, please contact your local FHWA Division Office.

U.S. Department of Transportation
Federal Highway Administration

SafetyEDGE
Your Angle for Reducing Roadway Departure Crashes

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