



State Transportation Innovation Council (STIC)

2015 Fact Sheet



Safety Edge

Reducing Accidents, Increasing Road Durability, Saving Lives

Safety Edge is a paving technique that eliminates sheer pavement edge drop-offs, the culprit in serious and often fatal accidents. When a driver steers off the edge of a near-vertical drop-off of a roadway, he or she often has difficulty getting back on the road or may oversteer into the other lane, both of which often result in crashes. Safety Edge involves adding a wedge-shaped attachment to paving equipment so that the edge of the roadway is paved to create a 30-degree angle rather than a vertical drop-off. This seemingly small change not only allows vehicles to return to the roadway smoothly and easily at higher speeds, it also creates a more durable edge that is less prone to cracking, deteriorating, and breaking off.

How does it work?

Crews mount a wedge-shaped shoe to their paving equipment. The commercially available shoe can be installed to existing equipment in a matter of minutes. The attachment acts as a screed extension, and as the asphalt is extruded, it molds the material into a 30-degree angle. While paving, the shoe is monitored and adjusted to keep the bottom edge of the device in contact with the road shoulder surface. After a brief learning curve, crews quickly develop the skills to effectively employ the technique during paving. Throughout pilot projects using various paving attachments to cast the angled edge, PennDOT determined that adjustable attachments worked the best and helped to provide the smoothest angle for eliminating dangerous drop-offs.

What are the benefits?

- Helps to decrease fatalities and serious injuries resulting from crashes when vehicles veer off the edge of a roadway and can't recover.
- Involves minimal time and cost to install onto existing equipment.
- Is easy to master and use on paving projects.
- Improves the density of the roadway edge and reduces the likelihood that it will crack, deteriorate, or break off.
- Is eligible for liquid fuels funds.
- Reduces liability exposure.

NOTE: Safety Edge is similar to the Longitudinal Notched Wedge Joint, which allows traffic to safely change lanes when one lane is temporarily paved higher than the adjacent lane. It is also similar to drop-off protection treatments, such as sloped material placed to protect construction drop-off conditions, which allow an errant motorist to safely return to the travel lane. Whereas the Notched Wedge Joint and drop-off protection treatments are only temporary during construction, Safety Edge is a permanent solution that will provide protection for the life of the pavement.



FHWA photo

The State Transportation Innovation Council (STIC) has selected Safety Edge as an innovative technique for eliminating treacherous pavement drop-offs, especially on two-lane rural roadways. The Federal Highway Administration has also included Safety Edge as part of its Every Day Counts program, which is an initiative designed to identify and deploy innovation that shortens project delivery, enhances safety, and protects the environment.

Safety Edge in Pennsylvania

PennDOT has been implementing Safety Edge on Pennsylvania roadways and has been encouraging municipalities to use this low-cost, easy-to-master paving technique. To date, Safety Edge has been incorporated into 392 construction projects throughout every PennDOT district in the state; another 86 are planned. Safety Edge has been incorporated into PennDOT specifications for placement of bituminous concrete pavements.



State Transportation Innovation Council (STIC)
(717) 214-8685 RA-pdPennDOTSTIC@pa.gov
www.moderndot.pa.gov

