

# RUMBLE STRIP BASICS

You've probably seen them, those rows of grooved patterns along the edges of some roadways. You may have heard and felt them as well, if you have ever driven over them. You are not likely to forget the sensation – the low-pitched buzzing sound as your vehicle's tires cross the strips, and the awakening vibration that you feel. Rumble strips are an effective safety tool used to address head-on and fixed-object crashes occurring on two-lane rural roadways.

According to the National Highway Traffic Safety Administration (NHTSA), 43% of all traffic fatalities occur on roadways in rural areas and 56% of all traffic fatalities on rural roadways involve a roadway departure. Center line rumble strips alert drivers that they are drifting into oncoming traffic. Edge line rumble strips warn drivers that their vehicle is drifting off the edge of the roadway onto a shoulder or unpaved area.

**Rumble strips are a cost-effective deterrent to roadway departure crashes, saving lives.**

For more information about rumble strips in Delaware:

Go to [safety.deldot.gov](http://safety.deldot.gov) to find additional articles and supplemental info.



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of Transportation

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# RUMBLE STRIPS

A proven,  
effective way  
to improve  
highway safety  
and save lives.



# RUMBLE STRIPS SAVE LIVES

A roadway departure crash is a non-intersection crash which occurs after a vehicle crosses an edge line, center line, or otherwise leaves the roadway. National safety statistics show that roadway departure crashes account for more than half of all fatal crashes. In Delaware, roadway departure crashes account for nearly 28% of all fatalities.

Because the majority of roadway departure crashes are due to drowsiness, impairment, or inattention, when a vehicle rolls across rumble strips, the noise and vibration serve as an alert for the driver to return their attention back to the road before a crash occurs.

A National Cooperative Highway Research Program (NCHRP) report has shown that edge line rumble strips provide statistically significant reductions in single-vehicle, run-off-road injury crashes: 10-24% reductions on rural freeways, and 26-46% reductions on two-lane rural roads. Studies of edge line rumble strips in Michigan and New York documented drift-off-road crash reductions of 38-79%.



## Benefits of Rumble Strips

- ✓ Reduce number of head-on collisions
- ✓ Low cost to install and maintain
- ✓ No noticeable degradation of pavement
- ✓ Can be installed on new or existing pavement
- ✓ Maintain effectiveness over time

## Noise Impacts

Some concerns have been expressed that the noise generated by vehicles riding over rumble strips will become a disturbance to residents living nearby. The noise of a vehicle riding over rumble strips is comparable to that of a passing dump truck. As long as the majority of drivers are operating their vehicles safely, noise generated by rumble strips should be infrequent and brief in duration.

In addition, DelDOT guidelines discourage rumble strip installations near high-density residential areas and encourage use of rumble strips along freeways and rural roads. Breaks are normally provided in locations where the white edge line pavement marking is broken. See below for more information on a noise reducing rumble strip design.

## Installation of Rumble Strips

Rumble strips are produced by making a series of shallow grooves in the pavement at regular intervals. They are extremely economical to install with little or no ongoing maintenance costs. In addition, their installation has little to no impact on traffic.

Edge line (or shoulder) rumble strips are placed on the shoulder, just outside the lane edge to warn drivers when they are running off the road. Center line rumble strips are placed on the double yellow center line of undivided highways to warn drivers when they are drifting into the oncoming traffic lane.

Shoulder, edge line, and center line rumble strips should not be confused with rumble strips that are located within the travel lanes, for example, approaching a toll plaza or stop sign, which are used to warn drivers of a changing condition.

## Bicycle Friendly Design

A typical rumble strip is about 16" wide, 1/2" deep and placed approximately 12" from the edge of the travel lane. However, DelDOT has standardized the use of a bicycle-friendly design on all new edge line rumble strip installations along conventional roadways. The bicycle-friendly design reduces their overall width, proximity to the white edge line, and allows for regular gaps for cyclists to cross over, when necessary. These adjustments allow for greater ease of travel for bicyclists without reducing the effectiveness of the rumble strips.



## Mumble Strips

Conventional rumble strips produce both vibration and noise to alert drivers. That noise can be problematic for people living adjacent to the roadway. DelDOT has recently introduced "Mumble Strips," or sinusoidal rumble strips. These rumble strips are designed to reduce the noise impact to adjacent residents by using a wave-like design, which has been proven to reduce increases in exterior noise, but provide the same safety benefits as traditional rumble strips.

