

Studded Tire Update

Studded tire use in Washington

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I-90 Spokane showing 14 years of studded tire wear on concrete pavement





Washington Studded Tire Damage Estimate

Statewide

Concrete Roadways:

\$10 to \$16 Million per year

Asphalt Roadways:

\$7.8 to \$11.3 Million per year

Combined Damage Estimate:

\$17.8 to \$27.3 Million per year

Based on 2012 estimate for wear rates applied statewide

WSDOT rutting threshold for rehabilitation is ½ inch



SR 904 north of Cheney –
15 years of stud wear.



I-90 east of Spokane



Center of lane



Center of wheel rut



Fog line



13 years of service on I-45 in Houston, TX with 178,000 ADT – Studs are not allowed in Texas

7 years of service on SR 395
with 6,800 ADT

No tining in
wheel path

Tining remains on
pavement edge



WSDOT Research

Studded and Studless Traction and Safety – Published 2002

Conclusions

- Studded tires produce their best traction on snow or ice near the freezing mark and lose proportionately more of their tractive ability at lower temperatures.
- The traction of studded tires is slightly superior to studless tires only under an ever-narrowing set of circumstances. Best case for studded tires is on clear ice near the freezing mark.

WSDOT Research

Studded and Studless Traction and Safety – Published 2002

Conclusions (Cont.)

- On bare pavement, studded tires tend to have poorer traction performance than other types of tires.
 - Especially true on concrete roadway
 - Little stopping difference for asphalt roadways
- Tractive performance of studded tires is sensitive to stud wear and lose their tractive ability over time.
- Pavement rutting caused by studded tires can cause dangerous conditions of tramlining, hydroplaning on accumulated water in ruts, excessive roadway spray and premature damage to roadway markings.

WSDOT Research

Studded and Studless Traction and Safety – Published 2002

Conclusions (Cont.)

- Other
 - Cost considerations (studded verses non-studded)
 - Fuel consumption (greater with studs)
 - Suspended particulate matter
 - Perceived Safety when using studs

Other Options

Studless Tires

- Maintains flexibility in cooler temperatures
- Deeper tread depths for snow on snow traction
- Wider range of traction ability on snow and ice



Tire Siping



2015 Legislation

- SB 5610
 - Provides for a \$75 annual studded tire permit
 - Passage would tend to discourage the purchase of studded tires and perhaps lead to a studded tire ban over time
- HB 1653
 - Provides for a \$100 annual studded tire permit
 - Like SB 5610 passage would tend to discourage the purchase of studded tires and perhaps lead to a ban on studded tires over time
- HB 1995
 - Provides for a one time \$5 per tire fee at the time of purchase SB 5610
 - Likely would not discourage studded tires due to the one time nature of the bill