

Official Mn/DOT Standard of Engineering Practice for the use of Shredded Tires in Roadways (pursuant to MN Statute 115A.912, Subdivision 4).

Some variation to this standard of practice is appropriate depending on the size, location and importance of the project. Such approved variations shall not be a means to lessen the quality or “cut corners” on a project.

Undisturbed soil borings are recommended for settlement estimates and other uses. PH readings of surrounding soils and water, if in question, are taken to verify that the range is between 5 and 9. Most MN soils are within this range.

A plan and/or recommendation is then prepared detailing expected quantities, location and other pertinent information. More information may be found at Chapter 115A.912 <http://www.revisor.leg.state.mn.us/stats/115A/>

In all cases a geotextile encapsulation layer is required to isolate the chips, prevent sinkholes from forming in the overlying cover material and in some cases to help shed or filter water. Mn/DOT standard Geotextile Types 4 and 5, Spec. 3733, have worked well. Lesser grades are not recommended.

In no case (except under rare and special circumstances and with consultation of the State Geotechnologies Engineer) shall a mixture of tire chips and sand, soil or other borrow material be permitted. This defeats the purpose of having a lightweight fill, is difficult to separate should removal ever be necessary and is regarded as creating an illegal dump within a public roadway facility.

Adequate cover and time is needed to preconsolidate or get the compression (creep) out of the chip volume and ensure a subgrade modulus high enough for pavement durability. Settlement plates are often helpful. For major roads 5 to 6 feet of cover has worked well. Unpaved low volume unpaved roads have been built with as little as 18 inches of cover, but conclusive evidence of satisfactory performance is lacking. In any case a waiting period of one month is helpful.

Chip stockpiles and the embankment itself should have some means of a fire control plan. Requiring the material to be covered within two weeks or enclosed in a chain link fence is recommended practice. For large quantities, on site fire lanes and smaller stockpiles are recommended.

Other rubber materials besides tires may be recycled for use pending both Geotechnical Engineering and Environmental approvals.

The Mn/DOT Geotechnologies Engineer, Environmental Compliance Unit and the MPCA may approve use below the watertable pending site-specific review and permissions. Research to resolve the placement issue in wet areas is now underway.

Local approval from county Waste Management Boards, County Boards, Cities, etc, may also be required.

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Shredded tire standard.doc (revised 2/15/2005)