



Highway Maintenance Manual

Chapter 06 Winter Maintenance

Section 20 Snow Removal Materials

Subject 15 Abrasives

Bureau of Highway Maintenance

December 2025

1.0 Abrasives

Locally available materials, particularly sand and by-products of commercial operations suitable for such purposes may be employed to enhance traffic safety when conditions preclude salt or use of other remedies.

(a) Use

Abrasives pre-wetted with a de-icing agent may be employed when the pavement temperatures are low enough that the sodium chloride is not effective. When abrasives are used it is recommended that they be pre-wetted and only used in low-speed trouble spots and intersections. Sand should not be used on roadways where speeds in the sanded locations exceed 45 mph.

(b) Gradation

Abrasives should be of a fairly uniform size. All particles should essentially be less than $\frac{1}{4}$ inch in size. It is best to have abrasives with as high fractured particle content as possible. The following gradation gives optimum results.

Sieve Size	% Passing
#4	96-100
#10	60-80
#40	30% Max.
#200	0-5

(c) Application (Typically 600-1,000 pounds per lane mile when mixed with 5% salt. If mixed with more salt the application rate should be reduced appropriately.)

Abrasives may be applied to predetermined areas when conditions warrant. Abrasives should be applied in quantities and at intervals necessary to provide suitable traction. Predetermined areas may include certain grades, curves, intersections, structures, and isolated areas where hazards exist. Such areas should be identified with cooperation and consultation of field maintenance personnel and the service provider prior to or under actual storm conditions. When conditions warrant using abrasives, they should be pre-wet with a de-icing agent to assure better adherence to the roadway.

(d) Preparation

A stockpile of chloride treated abrasives may be prepared in advance of winter conditions. [TRANS 277](#) requires that a sand/salt stockpile that contains more than 5% salt must be under a waterproof cover (or inside a building). Sand/salt stockpiles containing 5% or less salt must be under a waterproof cover from April 1st through October 31st.

Stockpiles should be placed at strategic locations, within a maintenance facility, where contamination of ground water and surface water is prevented. Sighting of stockpiles is subject to the Department of Natural Resources Administrative Rules for groundwater protection. (Refer to [TRANS 277](#).)