

- b) This device automatically adjusts the application rate in accordance with the truck speed
 - 1) The spread rate per mile remains constant while the “pounds per minute” indicator fluctuates with the speed

5. Zero velocity spreaders

- a. As mentioned earlier, solids tend to bounce off the roadway
 - i. The higher the traveling speed of the truck, the more pronounced these negative effects become
- b. Zero velocity spreaders were designed to counteract certain effects
 - i. The faster the vehicle travels, the faster the material is applied in the opposite direction
 - ii. The net effect is that the material hits the road at zero speed, as if it had been dropped by hand by a person who was standing still

H. Plowing and Removal

1. Intent of plowing

- a. To remove as much snow and loose ice as possible from the pavement surface before applying chemicals
- b. Plowing is all that is necessary if the pavement and snow are both cold and dry and the snow is not adhering to the pavement

2. Plow types

- a. There are many types of snow removal equipment available
 - i. The most common snow removal equipment used at ODOT are trucks equipped with plows
- b. Snowplows are available in a variety of types
 - i. Front plows
 - ii. Underbody plows
 - iii. Wing plows
- c. Trucks can be equipped with one or several plows
- d. Various cutting edges are also available
 - i. Carbide
 - ii. Steel
 - iii. Synthetic polymers

- iv. Rubber
 - e. Some plows are equipped with shoes to protect the cutting blade from obstructions in the pavement (raised manholes, bridge joints, or steel plates)
 - i. Some locations prefer to omit the shoes and run the blade directly on the pavement surface
 - f. Plows may contain a hydraulic or mechanical counter balance which reduces pressure and blade wear



Figure 12-16 Dump truck with a front plow



Figure 12-17 Dump truck with a front plow and a wing plow

- g. Typical areas of consideration for plow selection
 - i. Plow length, height and tripping mechanism
 - ii. Hitching mechanism
 - iii. Angle adjustments, moldboard material and type
 - iv. Cutting edge composition
 - v. Shoes

3. Other removal equipment

- a. Other types of equipment frequently used for snow and ice removal
 - i. Graders
 - ii. Front-end loaders
 - iii. Snow blowers
 - iv. Belt loaders

4. In addition to plowing the pavement surface, consideration must be given to loading and removal of snow when storage is a problem