

## Introduction of Slurry Spreader

The patent-pending slurry spreader shown in Figure 1 was designed and constructed as a cooperative arrangement between the Brigham Young University Department of Civil and Environmental Engineering, Salt Lake City Corporation, and the Portland Cement Association.

The primary purpose of the slurry spreader is to distribute stabilizing slurries for pavement base layer construction. Stabilizing slurries are mixtures of portland cement, fly ash, lime, proprietary products, and/or other mineral or chemical admixtures with water or another diluent.

The use of slurries in pavement construction is especially practical in urban areas because the application of slurries generates no fugitive dust. Many agencies have expressed interest in this construction technique for urban pavement reconstruction.

The cement slurry spreader has already been used on 10 full-depth reclamation projects involving cement stabilization, in particular. Use of the spreader has been shown to reduce variability in cement-treated base construction relative to applying cement slurry without the spreader.

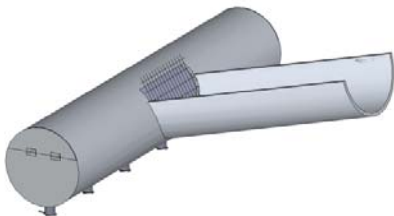


Figure 1: Slurry spreader design.

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## Application of Cement Slurry Using a Slurry Spreader

### A New Technique for Urban Pavement Reconstruction

## Design of Slurry Spreader

The spreader is designed to connect directly to the chute of a standard ready-mix truck and is light enough that one or two persons can lift and install it, as depicted in Figure 2.

The prototype consists of a horizontally-oriented pipe affixed perpendicularly to a modified length of chute. The unit is constructed with steel materials to ensure durability.

The slurry enters the pipe through a hole cut into the pipe at its junction with the modified length of chute. A removable screen shown in Figure 3 can be placed at this location if desired.

The bottom of the spreader is equipped with six independently adjustable nozzles, shown in Figure 4, from which the slurry exits. The sides of the slurry spreader have hinged covers that can be opened to facilitate inspection and/or cleaning of the interior of the unit.



Figure 2: Securing the spreader to a ready-mix truck.



Figure 3: Installing the removable screen.



Figure 4: Adjusting the nozzles on the spreader.

## Use of Slurry Spreader

Once the spreader is positioned on the ready-mix truck, the nozzles may be adjusted to account for differences in hydraulic head in the slurry box due to pavement cross-slopes, and the side flaps should be closed.

The ready-mix truck driver lowers the chute and spreader when he or she is ready to distribute the slurry. When the slurry begins exiting the spreader, the driver backs down

the project corridor at a ground speed appropriate for placement of the specified amount of slurry. The speed should be varied as needed to meet specifications. The spreader should distribute the slurry evenly across the surface of the prepared base course as illustrated in Figure 5.

The spreader is easily cleaned using the water hose from the ready-mix truck. Figure 6 shows the use of a sand pit to capture the slurry residue.



Figure 5: Applying cement slurry with the spreader.



Figure 6: Cleaning the slurry spreader.