

NCPI MODIFIES A SLURRY BEDDING SYSTEM

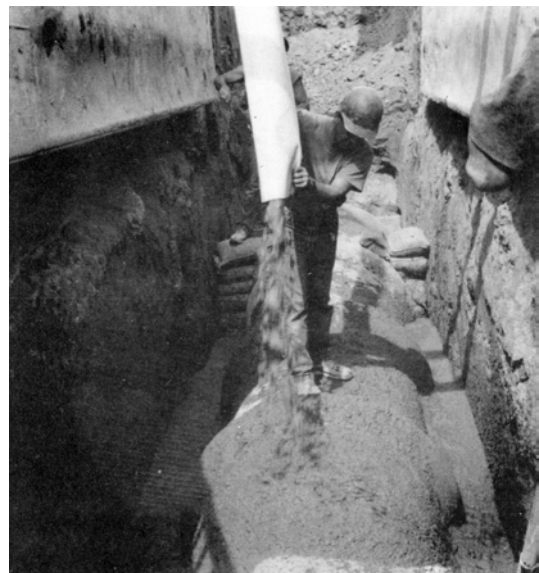
(Supercedes Tech Note TN 5-2)

In 1995, after nearly two years of testing and evaluation, NCPI introduced a new bedding system known as CONTROLLED DENSITY FILL (CDF). CDF, considered to be slurry, was specified to have a compressive strength of 100 psi to 300 psi at 28 days. Desired attributes of slurry bedding are ease of installation, reduced cost over traditional concrete arch or cradle bedding, and later excavation of the envelope around the installed pipe without the use of jack hammers or other heavy excavation equipment.

The CDF bedding proved to be very useful in very deep or shallow burial applications.

CDF has been used throughout the United States for pipe bedding. It has been called by various names and the specified compressive strength also varied from one locality to another.

In order to bring some uniformity to the use of slurry bedding for pipe, the American Society for Testing and Materials (ASTM) sponsored a Technical forum in St. Louis, Missouri. Attendees, with a broad background of experience, included representatives from the U.S. Corps of Engineers, the U.S. Bureau of Reclamation and consulting engineers.



CDF Pour in Riverside County, CA

After careful deliberation, a consensus was reached to call the material CONTROLLED LOW STRENGTH MATERIAL (CLSM) with a specified compressive strength of 50 psi to 100 psi at 28 days.

The CLSM bedding system is one of simplicity. Only one person is required to be in the trench to guide the CLSM from the chute directly on top of the pipe. The pipe is uniformly supported on a flat bed of crushed stone or other suitable material and the CLSM flows equally into the areas on both sides of the pipe, out to the trench walls and up to the top of the pipe. Care shall be taken to prevent any side-thrust movement of the pipe. Once poured, the CLSM rapidly develops density and low shear strength properties which prevent flotation of vitrified clay pipe.

Backfilling may be started as soon as the CLSM supports the backfill without intermixing. This can be as little as one to two hours.

The CLSM trench load design has been incorporated into ASTM C 12 Standard Practice for Installing Vitrified Clay Pipe Lines.