

## **302 CEMENT TREATED SUBGRADE**

The specification requirements and construction practices related to cement treatment are similar to those of lime treatment.

### **302-3 Construction Requirements**

The Special Provisions will specify the application rate for adding cement to the treated material. Cement must be applied by a mechanical device that can be adjusted to provide the correct spread within 10% of the amount specified.

Cement treatment differs from lime treatment in the following areas:

1. The amount of cement that can be spread is limited to an area that can be mixed and compacted in a half-day work shift. This restriction is related to the rate at which cement will hydrate and set up and should be strictly adhered to.
2. The words related to thoroughness of mixing are different, but both specifications promote uniformity. The cement specification warns of cement balls. They are to be eliminated by continuing the mixing of the cement until all the balls have been broken.
3. The cement treatment specification has a limitation of 2 1/2 hours of time that can elapse from the time water is added to the final compaction and trimming. This time restriction must be complied with and is related to the rate at which cement will set up.
4. There is no delay allowed for the application of curing seal on a cement treated subgrade. Prompt sealing is important to preserve the moisture needed for continued hydration. Also, rapid repair of a damaged curing seal or treated subgrade is stressed. Only light construction traffic is permitted on the curing seal. This means that it cannot be used as a haul road.
5. Lime is a greater safety hazard than cement. Lime requires a detailed safety program to be reviewed and approved by the engineer.

Cement treated subgrade is more sensitive to moisture. This means that not only is the curing seal important, but care must be taken to prevent over wetting during the mixing process.

#### **302-3.03 Mixing**

Do not allow the mixer to be overloaded. Mixers are most efficient when operated at the rated mixing capacity. Attempts to force a little more in because the windrows are too large are self-defeating. Either a non-uniform mix will result or the mixing time will be increased to more than it would have taken if windrows were properly sized.