


TO:  Director, Preliminary Plan Review Bureau	<h1>ENGINEERING INSTRUCTION</h1> <p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION</p>
	SUBJECT: WINTER EARTHWORK OPERATIONS  Subject Code: 7.30
Distribution: <input checked="" type="checkbox"/> Main Office <input checked="" type="checkbox"/> Regions <input type="checkbox"/> Special  APPROVED:  Deputy Chief Engineer (Construction)	Code: <u>EI 76-44</u> Date: <u>6/16/76</u> Supersedes: EI 75-96

Satisfactory compaction of most materials can only be achieved when the temperature is 32°F or higher. Compaction of both unclassified material and granular material becomes increasingly difficult as air and material temperatures approach freezing. This fact has been verified repeatedly through both laboratory and field testing. The increased difficulty is caused by the water in soil reacting less and less as a lubricant until it actually becomes ice, at which point compaction is totally inhibited.

The only exceptions are coarse materials that do not require water for compaction. Compaction of these materials is achieved by point to point mechanical interlocking that does not require particle lubrication.

Generally all embankment, subbase, and trench backfilling operations, with the exception of rock embankment construction, should cease on October 31. Specific criteria to control the work should be included in any written waiver granted by the Regional Director permitting the placement of material requiring compaction after this date.

Trench backfilling is a particularly critical operation. The proper compaction of the material is generally required to guarantee adequate support for the pipe and to minimize post-construction differential settlement of overlying pavement courses. In some cases, the backfill of trench excavations can be allowed to proceed in temperatures below 32°F, when the backfill material is sufficiently coarse, the material on which the backfill is to be placed is not frozen, and the material being placed is not frozen. These conditions require close control at the project level.

The specifications do not allow soil or rock materials to be placed when frozen nor do they allow material to be placed on frozen material. Under no circumstances should these requirements be violated.

