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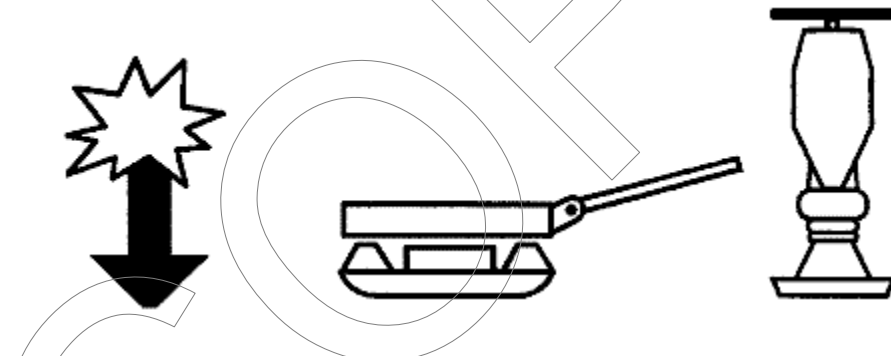
### 6-4 BACKFILL ENVELOPE CONSTRUCTION

#### Mechanical Compaction Equipment

Hand Tampers and Hand-Held Power Tampers: Compacting the haunching layer may require a small tamping mechanism to obtain the specified compaction in a confined area. A hand-held pole or two-by-four can be used to compact the haunching. Tampers for horizontal layers should not weigh more than twenty pounds (89N) and the tamping face should be limited to an area no larger than 6" by 6" (0.15 by 0.15m).

Rammers or rammer plates (Figure 6-3) use an impact action to force out air and water from between soil particles to consolidate the fill. This equipment works well on cohesive or high-clay content soils. Care should be taken not to use rammer-type compactors directly on the pipe.

Figure 6-3 – Rammer Compactors



Static Compactors (Figure 6-4): Consolidation with static compactors occurs as a result of the rolling weight of the equipment itself. Sheeps-foot rollers employ projecting feet to concentrate the weight of the machine. Static compactors are most valuable when used on non-cohesive backfill away from the pipe. Other methods of compaction should be used near the pipe.

Figure 6-4 – Static Compactors

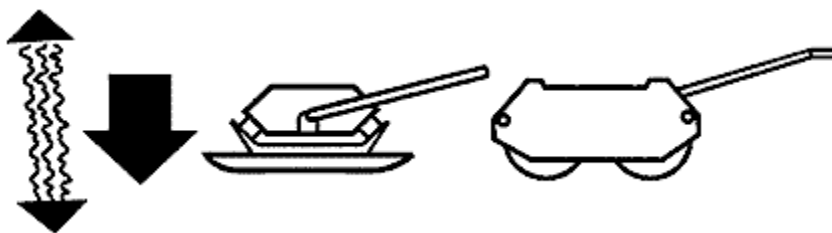


Vibrating Compactors (Figure 6-5): The motion of vibrating rollers or plates “shake” the soil particles into a more dense arrangement and work best with non-cohesive fills. Depending on the size and weight of the machine, vibrating



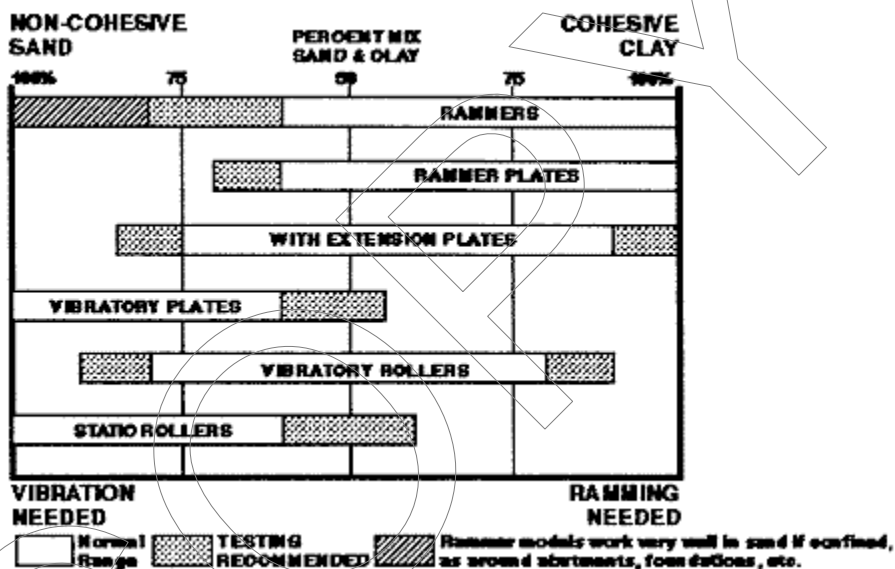
compactors may be used close to the pipe. As always, care should be taken not to impact the pipe directly with a great deal of force.

Figure 6-5 – Vibrating Compactors



Selecting the right equipment for the fill material is the key to achieving the most efficient compaction. For soil mixtures, the component having the highest percentage will dictate what type of compaction equipment is needed. Table 6-3 guides in the selection of compaction equipment.

Table 6-3 – Compaction Equipment Selection Guide



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- BLUE SEAL
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