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2016 CALIFORNIA PLUMBING CODE PLASTIC SEWER PIPE INSTALLATION

Existing Code: Excavations shall be completely backfilled as soon after inspection as practicable. Precaution shall be taken to ensure compactness of backfill around piping without damage to such piping. Trenches shall be backfilled in thin layers to 12 in. above the top of the piping with clean earth, which shall not contain stones, boulders, cinderfill, frozen earth, construction debris, or other materials that will damage or break the piping or cause corrosive action. Mechanical devices such as bulldozers, graders, etc., shall be permitted to then be used to complete backfill to grade. Fill shall be properly compacted. Precautions shall be taken to ensure permanent stability for pipe laid in filled or made ground. [CPC 314.4]

New for 2016: Thermoplastic pipe and fittings for sewers and other gravity flow applications shall comply with the following: The excavated trench width shall be 1.25 times the outside diameter of the piping plus 12 inches, or the outside diameter of the piping plus 16 inches. (note: the latter measurement is always wider, and is the maximum width for the excavation.) Thermoplastic piping shall be bedded in not less than 4 inches of granular fill supporting the piping. The backfill for thermoplastic piping shall be compacted along the sides of the piping in 6 inch layers and continue to not less than 12 inches above the piping. Compaction shall be not less than 85 percent standard proctor density.

Piping must also be installed in accordance with applicable ASTM standards, resulting in an installation as shown in the illustration below.

Why this changed: The new language conforms to existing rules within ASTM Standards. The reason for controlling the width of the trench is to enable the plastic piping to gain side fill support from the compaction. If the trench is wider, the side fill support is difficult to maintain, and if it is narrower, there is not enough room to compact the side fill support in layers.

The reason for granular fill support is to enable the plastic piping to embed itself in the fill, and take advantage of the side fill support to prevent the pipe from flattening due to the load of the backfill on top of the pipe. Compaction is necessary to prevent the deflection of the pipe from the weight of the backfill.

Procedures: The bedding material can be sand or granular rock (not smooth river rock or pea gravel). Per ASTM D2321, the maximum size granule should not exceed 10% of the pipe diameter. The bell of the pipe joint should be embedded.

The first layer of backfill should be only to the springline (midpoint) of the piping. Work and tamp the haunching material in the area between the bedding and the bottom of the pipe. Do not allow compaction equipment to contact the pipe. **Do not backfill above the springline prior to inspection.**

At the Underground Plumbing inspection, the inspector will inspect the compacted backfill to the springline and will probe the bedding.

Subsequent backfill must be compacted in layers not exceeding 6 inches to a minimum cover of 12 inches above the pipe.

