



Reference material – Underground service

The terms and definitions below pertain to both gas and electric underground service.

Base and shading material (for gas trench only) Imported material consisting of; natural sand, manufactured sand, existing native material or a combination of these materials, may be used for base and shading material provided it complies with gas standard G7405 and is of a quality that will comply with compaction requirements of governmental agencies. Standard G7405 specifies that the material must have a mixture of particle sizes smaller than 1/2 inch. (Underground Standard 3370.3).

Base installation for gas For gas installation, 3 inches of base material is required on the bottom of the trench to prevent damage from rocks, sags or pockets.

Shading installation A minimum cover of 4 inches of compacted shading material (4 inches after compaction) shall be required above the gas pipe and electric conduit. A minimum cover of 12 inches of compacted shaded material will be required if, in the opinion of the Trench Inspector, there is an excessive amount of rocks and clods in the backfill material. The shading material must be installed and compacted at each level before installing the next utility. The shading material must be installed before the trench is backfilled to prevent damage from rocks, clods, etc. Gas pipe shall never be concrete or slurry (concrete with no gravel added) encased and shall have the proper base, shading, backfill and compaction.

Backfill material The material used for backfilling the trench above the shading material and extending upward to the sub-grade shall be free of rocks or clods larger than 6 inches in any dimension. The coarse material shall be well-distributed throughout the finer material. The amount of rocks or clods shall be limited, in the opinion and discretion of the Inspector, to allow for bar testing for gas leaks.

Compaction Extreme care shall be taken to ensure that shading material is adequately compacted both underneath and around gas pipe and fitting to prevent excessive stress and shearing forces. Hand tamp around fittings where mechanical compaction cannot be used. Compacting with a hydrahammer or similar equipment shall not be allowed on trenches where polyethylene pipe has been installed. When mechanical compaction is used, a minimum of 18 inches of cover is required before compacting. Compaction by method of water jetting is not allowed. Shading and backfill shall be in accordance with governmental agencies and shall have a minimum of 90 percent relative compaction. All base, shading and backfill material must be approved by an SDG&E® Inspector.

Mandreling After conduits are installed, they must be mandreled by the conduit installer to check the inside diameter and provide a path free of obstructions. In each conduit run, use a mandrel equivalent to the size of the conduit being mandreled. The mandrel must be sized to the smallest inside conduit diameter for the total length of the run. If the mandrel will not pass through an obstruction, the conduit must be replaced or repaired at that point by the installer.

Pulling tape The conduit installer must provide 3/4 inch pulling and measuring tape in each conduit. The pulling tape must be approved by SDG&E and have a minimum average tensile strength of 2,500 lbs. and be woven polyester high strength, continuous filament and pre-lubricated with footage marking. The pulling tape shall be pulled in behind the mandrel. When the pulling and measuring tape is installed, it shall be one continuous length without knots for the accurate measurement for conductor installation and the pulling of the conductors or winch lines. Pulling tape tails of 24 inches shall be secured at the end of conduit.

Project Management			Service Order Teams					
South	North	Orange County (Electric Only)	South (Metro)	Beach Cities	Northeast	North Coast	Eastern	Orange County (Electric Only)
San Diego	Escondido	San Clemente	San Diego	San Diego	Escondido	Carlsbad	El Cajon	San Clemente
858-636-6805	760-432-5805	949-361-8061	619-230-7800	858-581-7544	760-480-7745	760-476-5621	619-441-3969	949-361-8066
For project size Residential > 600 amp Commercial > 225 amp			For project size Residential < 600 amp Commercial < 225 amp and Gas < 1,200,000 BTUs					

If you have any questions, call us at **1-877-789-9866** or visit sdge.com/builder-services.