



How Gunite Works

Shotcrete/Gunite is a process of applying concrete to a structure. It is commonly used to build pools as well as bridges, homes, tunnels, water tanks, sea walls, and bridge and dam repairs to name but a few. Gunite has been in use since the early 1900's with excellent success.

Shotcrete comes in two basic forms... "dry process or dry gun" and "wet process".

The dry gun method or dry process shotcrete (also known throughout the industry as "gunite") uses a rig in which sand and regular cement are mixed and compressed. This mixture is then blown through a hose by way of extreme compressed air to the nozzle where water is added at the tip of the hose and then blown pneumatically into the rebar enforced walls and floor. Only the necessary amount of water is added for hydration resulting in superior strength over conventional concrete.

FYI: The term "Gunite" - which is a process rather than a material - is a former trademark and now a generic term that has not been recognized by the GCA (gunite contractors assn.) ASA (American Shotcrete Association, or the ACI (American concrete institute) since 1967.

The wet process, also referred to in the pool industry as "shotcrete", uses premixed concrete. This mixture is pumped to a nozzle and pneumatically placed "shot" in the walls and floor of the structure VIA an air powered nozzle. Computers are used to control the concrete mixture by using a pre-defined design that can be adjusted at the site.

(According to NSPI standards) We shoot a standard 12" to 14" continuous bond beam and regress to 6-8" walls and floor.

Dry method pneumatically applied concrete (Gunite) is superior in strength to poured or redi mix concrete for several reasons. Only the amount of water necessary for hydration is added to the sand and cement mixture to make Gunite. There is not the excess water found in conventional poured concrete. The excess water found in poured concrete occupies space, and when it finally leaves the curing or hydration process, small voids are left.

So it can be said that dry method "Gunite" is more dense than of poured concrete. In fact, 14 yards of gunite equal about 10 yards of redi mix concrete or shotcrete mix. Denseness is an important factor in the superior strength of Gunite and its high resistance to the passage of water.