



What is the difference between shotcrete and Gunite?

Answer: Shotcrete is an all-inclusive term to describe the spraying of concrete or mortar that may be accomplished through either a dry- or wet-mix process. Gunite refers only to the dry-mix process in which the dry cementitious mixture is blown through a hose to the nozzle, where the water is injected immediately prior to application. Because complete mixing of the water and dry ingredients is not possible in the nozzle, mixing is completed as the material impinges on the receiving surface, through manipulation of the nozzle. This requires a skilled nozzleman, especially in the case of thick or heavily reinforced sections. The use of a Hydro-Nozzle which introduces the water near 3 meters back in the hose which completes the hydration of the mix, reduces the impinging factor and also reduces dust levels. Large aggregate is seldom used with the dry-mix process.

Wet-mix shotcrete involves pumping of a previously prepared mixture, typically ready mixed concrete, to the nozzle. Compressed air is introduced at the nozzle to impel the mixture onto the receiving surface. The mixture usually contains minus 1/2 in. aggregate. Wet shotcrete as it is known, is normally used in a high production area, tunnelling projects etc. where ready mix trucks are available to feed the pump.

The use of the term "shotcrete" first occurred in Railroad Age magazine more than 50 years ago in place of the then proprietary word "Gunite," and has been used by the American Concrete Institute since at least 1967 to describe all sprayed concrete or mortar.