



TOOLBOX TALK



TOPIC DISCUSSED:

SHOTCRETE



Shotcrete, a method of projecting concrete onto vertical or overhead surfaces at high velocity, is commonly used in construction. It consolidates concrete using the impact generated during application and forms an exceptional bond with most substrates. Notably, shotcrete offers rapid setting capabilities, ideal for complex shapes and forms.



QUESTIONS:

1. True or false – There is only one method to apply shotcrete.
2. What are some of the benefits of shotcrete?
3. Name at least three hazards associated with shotcrete.

TAKE A LOOK AT THE FOLLOWING:

WHAT IS SHOTCRETE?

Shotcrete is a mixture of aggregate and portland cement, conveyed by compressed air to the nozzle of a spray gun, where water is added. The wet mixture is then sprayed in place and may be carved or troweled almost immediately.



APPLICATION METHODS

There are two ways that concrete can be placed using this method:

WET-MIX

Ready-mixed concrete, at times with reinforcing fiber, is

PUMPED

from a hopper through a *HOSE TO THE NOZZLE.*

COMPRESSED AIR

is injected as a worker sprays the concrete onto the prepared surface.



DRY-MIX

DRY CONCRETE

ingredients (gravel, sand, and Portland cement) are conveyed by compressed air from a hopper through a *HOSE TO THE NOZZLE.*

WATER

is added at the nozzle, where workers then spray the concrete mixture onto the prepared surface.



[HAZARDS INVOLVED]



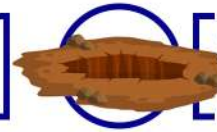
Noise induced hearing loss as the Compressor and generates above 85Db noise.



High pressure is used, which could lead to pipes bursting and grout spraying onto workers.



Back strain when not using the correct posture and buddy system to move hammers and rods.



Over excavated area can lead to soil collapse.



Labour intensive - moving pipes, carrying and inserting rods and doing repetitive work.



Rebound "grout back splashing from the face of the wall" can cause superficial wounds if proper PPE is not worn.

WHAT ARE THE BENEFITS?

Widely used in new construction and repairs, ideal for **CURVED** and thin structures.

Requires less formwork than traditional concrete methods,

= **COST-EFFECTIVE.**

