

A Shotcrete feature:

SAFETY SHOOTER

Don't Get Buried

By Chris Zynda, Director of Shotcrete Operations, Joseph J. Albanese, Inc.,
ASA President and Safety Subcommittee Chair



My company recently started work on a 164 ft (50 m) long-course competition swimming pool with an attached diving well at Stanford University, Palo Alto, CA. The pool is 82 yd (75 m) long by 90 yd (82 m) wide by 3.6 ft (1.1 m) deep and transitions into a 13 ft (4 m) deep diving well.



The vertical excavation was limited to 5 ft (1.5 m) with a sloped top. Pool excavation started in the deep end and proceeded to the shallow end. The excavation surface included both bench and sloped banks



The pool's gutter is a trough that is incorporated into the bond beam at the top of the pool shell. Since the entire deep end was built with this design, there was a need for a sturdy and elaborate forming system. A sturdy form is needed to hold the mass of the concrete, as well as a reinforcing bar to keep the filled formed system from falling forward. The forming system consisted of a 3/4 in. (19 mm) plywood shin with 2 x 4 studs at 2 ft (0.6 m) on center



A double waler system was used to increase the sturdiness of the form works



An improperly secured form and/or reinforcing bar can result in movement of the formwork system and reinforcing bar toward the nozzleman with a pressure in excess of 0.12 psi (0.02 MPa). The mass of the reinforcing bar, plumbing, and shotcrete are included in the pressure calculation



This is what will happen if the form is not sturdy