A *Shotcrete* feature:

SAFETY SHOOTER

by ASA Safety Committee Chair—Chris Zynda of Concrete Structures

Guilty through Association

Wall Forms and Rebar Safety Tip

I remember doing a job in San Francisco, CA, about nine or ten years ago. The job consisted of building a basement in an existing commercial area. There were buildings on both sides of the new proposed basement. The construction called for the new basement walls to be built on the property line with a 2-in. foam spacer—the perfect shotcrete job!

The basement walls were approximately 8 ft tall and 100 ft long on each side. We were contracted to install the 8-in.-thick concrete wall. We proposed shotcrete for all the walls, and it was approved. The forms and rebar were to be installed by the general contractor and our company was scheduled for the shotcrete work. We pre-sited the job and checked the forms and rebar. Everything looked okay—forms at both ends, braced foam filler against the existing building was glued and nailed, and the rebar was tight. Shotcreting was scheduled for the next day.

The shotcrete day was going great, and we finished all the walls by 4 p.m. Upon final inspection, the foreman noticed a crack developing between the 2-in. foam spacer and the existing building. It was also noticed that tractor work was continuing on the project. Suspecting the worst, the foreman directed everyone out of the basement and the tractor work stopped. Ten minutes later, 100 ft of the wall fell… all in one piece! Luckily, nobody was injured or trapped!

It turned out that the glue did not adequately hold the foam in place, and the dowels at the footing bent. The vibration from the tractor work shook the building, allowing movement of the foam and rebar. If the wall would have set for another 60 min. before the vibration, it likely would not have fallen for a lifetime.

I hope this true story helps to highlight some safety issues you may find at the job site that may be out of your control. Forms must be checked for stability, both backward and forward. Why forward? The rebar cage needs to be tied to something, usually to the back form. When the shotcrete wall is being built up, the placed shotcrete wants to sag forward, bringing the rebar with it. If the rebar moved, most likely, the form also moved. This is a very severe problem as noted in the job mentioned previously, in addition to having a wall built out of line. Remember, SAFETY FIRST! Check all forms and rebar for stability before shotcrete placement.