

SAFETY SHOOTER



Overspray and Safety

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I can't remember how many times I have been asked, "What do you do?" My answer is, "We spray concrete." The reply always seems to be the same. "You spray what?" Yep, we spray concrete. This includes pools, parking garages, shear walls, channels, ditches, rock features, etc. But sometimes the list includes cars, existing structures, equipment, and people (unintentionally, of course). "People" would include the shotcrete crew, other trades, and the general public (sorry to say, I have sprayed them all). The danger in spraying people comes in many forms. The force of the spray, aggregate particles, and burns from cement-skin contact are just a few of the ways overspray can be harmful to humans. The military calls this collateral damage. Our mission is to limit or eliminate collateral damage.



Fig. 1

Changes in the way we form can help control overspray. What I find best to use in all my forming systems is to run my top-of-wall form 6 to 8 in. (150 to 200 mm) higher than the needed elevation. I use this idea on all top-of-wall and end-of-wall shut-offs and then install a pour strip for the elevation (refer to Fig. 1). This will not control all the overspray, but it will pick up the force of the shotcrete nozzle so visqueen (plastic) can be used to complete the protection for overspray and dust (Fig. 2).



Fig. 2

When the job is done (same day), it is time to look for overspray on objects that were not intended to be sprayed, including crew and other trades. The general public will usually report an overspray incident as soon as it happens. Trust me, you don't want to see anyone carted away in an ambulance because they got sprayed with the force of the spray from the nozzle. It's not pretty and can be very dangerous.

The next day is not the time to check the job for overspray from the prior day of shotcreting. Overspray seems to stick to everything. This stickiness is helpful in some respects because it is one of the key benefits of the shotcrete process in bonding layers of shotcrete to shotcrete, poured concrete, masonry, and other materials. Overspray can be viewed as cement spray paint, hence my original job description: we spray concrete. It seems that in checking for overspray, the day after you will find it everywhere where protection has not been provided.

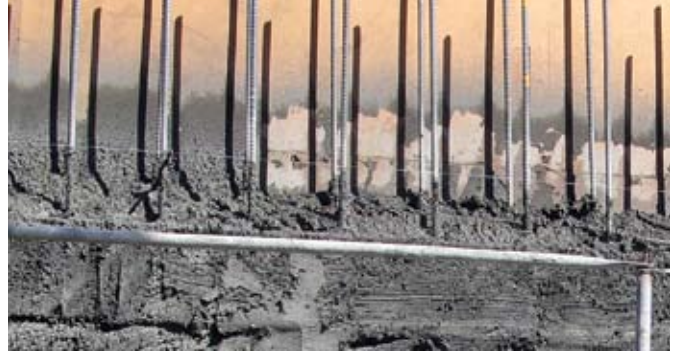
Overspray is costly. Controlling overspray is important to controlling job costs related to removing shotcrete from unintended targets. But more importantly, protecting humans is the first priority. Nozzlemen must survey the work area and identify potential overspray targets. Crews must be using all of their personal protection equipment. Other trades must be advised to stay clear of the shotcrete placement. The job site must be secured so the general public cannot accidentally enter the work area. Like most things in life, prevention is much less costly than the cure.



Looks like a small bird's nest but it is not. Unfortunately it is heavy overspray that will need to be removed



Thin overspray on a pipe. Don't think that because it is thin that it will be easier to remove. Sometimes the thinner layers are harder to clean



A joint scraped with a nice stiff broom to remove the laitance in preparation for the next lift. Notice the overspray on the form. Partially cleaned, this does not look bad, until you strip the form



The overspray makes the wall appear unfinished and in need of repair. The vertical strips are metal imbeds used for durability. This is a bin for recycled material