



## Pre-Job Safety Checks

By Mark Corner

Today's shotcrete placement, equipment, and personnel have evolved over the years, bringing a number of new safety items and topics. Every project is unique and possesses unique hazards that need to be addressed. Even before the shotcrete machine is started, we are responsible, as professional shotcreters, to plan for placing quality shotcrete and maintaining safety at all times while working on jobsites. One of the most important aspects is pre-job safety planning for the project to protect the worker from injury and mitigate damage to the equipment or site.

Job organization is an essential part of the pre-job safety process. The responsibility falls to the foreman of the job to correctly identify the hazards and communicate them to the crew and workers on-site. The equipment and other shotcrete placements should be laid out to meet the safety requirements. The foreman should also ensure that all equipment is properly maintained and working smoothly, while being aware of necessary precautions and

providing for unseen disruptions.

### PRE-JOB SAFETY

As we know, safety starts with the individual. In shotcrete processes, we have to consider many aspects of planning jobs and keeping safe. The following are some key points in my Pre-Job Safety checklist.

- Before operating any type of machinery, the crewman should be very clear on how the machinery operates. Sure, reading manuals can be boring, but you know what's worse? Lying in a hospital bed because you used a shotcrete pump with no training. **STAY SAFE, READ MANUALS.**
- Communicate with key personnel such as the Project Contractor and other subcontractors, making sure everyone is aware who is responsible for identifying hazards. Also, we must always be informed of and follow local laws and regulations. All shotcrete



Fig. 1: On-site safety talks provide timely communication during a project.

projects are unique and have their own set of hazards that must be addressed. These discussions should take place before the start of the project. They can include procedures to respond to weather limitations, special site conditions, and work limitations (for example, evening work should ensure that proper lighting is provided). Restrictions that local laws place on noise and hours of work need to be communicated clearly and work planned accordingly. Even the physical setup of the equipment should be planned to allow the pump or gun operator a visual line of sight with shotcreters or radio communication provided when visual access is not feasible.

- Safety talks or tailgate meetings are a key element in the daily operations. This is the opportunity to pinpoint hazards for the day. This may include potential hazards that may be encountered and/or may have changed due to changes in weather or other trades working close to the shotcrete placement. Let everyone ask questions and ensure everyone understands the answers and the potential hazards you address. Ensure employees are aware of the location of safety stations and know how to use them in the event of an emergency. A safety plan is a great idea for the work crew as well as a daily reminder of procedures in the event of an emergency. On most commercial job sites or in mining, you are required to participate in a “line-up” or meeting to go over the day’s production processes and discuss who is working in the area and potential hazards. Hazards are identified and documented before work starts. Each employee will record the day’s events as well as any hazards encountered, turning that into a report at the end of the shift (Fig. 1).
- Ensure each worker is competent. More and more project owners are now requiring ACI certification for shotcreters.
- Equipment arrival on-site: During initial setup, the equipment should be checked for any defects and all safeguards verified in place. Inspect all components before start-up and confirm the proper hose and fitting are being used with special attention to the level of wear in the fittings or hoses, which could be a potential hazard during operations. Identifying the hazard early can eliminate injury and lost time.
- Jobsite production may require using equipment such as scissor lifts, man lifts, or scaffolding. Ensure this equipment is adequate for the job, is in compliance with local laws and regulations, and is serviced according to manufacturer’s recommendations. Ensure your shotcrete equipment is adequate for the job and properly serviced. Prompt service is essential to keep expenses down time to a minimum (Fig. 2)!



Fig. 2: Man lifts allow for quick, convenient access to hard-to-reach spaces.

In summary, a well-planned job with a focus on safety will bring profit to your company, and your customers will appreciate a job done on-time and on-budget. Spending the proper time every day pre-planning and ensuring the job is safe will benefit all.

## RESOURCES

1. How to Safely Use Shotcrete,” Concrete Pump Supply, Dec. 2013, <http://www.concretepumpsupply.com/blog/how-to-safely-use-shotcrete/>.
2. “Personnel, Duties, and Safety Precautions for the Shotcrete Gunning Crew,” based on Chapter 3 of Gunitite: A Handbook for Engineers by T.F. Ryan, published by The Cement and Concrete Association, 1978, London, UK, 3 pp.
3. ASA, “Safety Guidelines for Shotcrete,” American Shotcrete Association, Farmington Hills, MI, 2014, 20 pp.



**Mark Corner** is a Manager at Interconcrete Limited based in Sudbury, ON, Canada. Corner is a member of ASA and the Ready Mix Concrete Association of Ontario Technical Committee and his certifications include ACI Concrete Field Testing, CCIL Field and Laboratory Category II, ACI wet and dry, vertical and

overhead shotcrete, and EFNARC Shotcretertt. He has knowledge in underground shotcrete processes, has assisted in setting up mines with wet-shotcrete processes including delivery from surface via slick lines, and has designed and developed shotcrete mixtures.