

A Shotcrete feature:

# SAFETY SHOOTER

## Safety Hazards Can Hang Overhead...Protect Yourself with Hopper Guards!

by guest author Dennis Wrixon



*Shotcrete machine with open hopper guard*



*Shotcrete machine with enclosed hopper hood*

**T**he growing use of shotcrete in mining, tunneling, and other construction markets has led to the increased use of bulk tote bags to transport preblended materials from the manufacturer's production facilities to job sites. While this system of shotcrete delivery has numerous advantages (improved productivity, reduced dust levels, lower costs), safety must always take precedence.

Empty bulk tote bags are often returned to the shotcrete manufacturer to be refilled and returned to the job site. Although returned bags go through an intense examination and sorting process to ensure they are reusable, all four lifting straps should be examined to ensure they are not damaged or frayed. If bag straps are damaged, the bag should be discarded.

Suspending a 1-ton or larger bulk tote bag of shotcrete over the steel rim of a shotcrete machine hopper and then asking an operator to untie the cords at the bottom of the bag is not unlike asking a shear operator in a machine shop to reach into the machine without the proper safety guards installed. In the case of the shotcrete machine, a sudden movement of the material handling machine or a broken support strap on the bulk tote bag with the operator's arms under the bag could lead to the loss of a finger, hand, arm, or worse. It is for this exact reason that the suppliers of shotcrete equipment and materials to the mining industry, particularly in Canada, have developed safety guards for their machine hoppers.

The first guards were simple open support rings that fit into the hopper and allowed the operator a protected space into which he could reach to untie the bag.

Improvements to the initial open guards lead to the development of the enclosed hopper safety hood. The hood provided a safe means of untying the bulk bag but also supplied the added benefit

of capturing any nuisance dust that escaped from the hopper. The enclosed hopper hood is now standard equipment for most underground mines in Canada.

It should be noted that the guards and hoods are not meant to be “supports” for the bulk bags. The bulk bag must remain suspended by the lifting machine at all times until fully discharged. The full weight of a bulk bag resting on a hopper guard or hood will adversely affect the operation of the machine and will create serious instability with such a large weight sitting unsupported high off the floor.

The use of hopper guards and hoods is relatively unknown outside of the North American mining industry. If your shotcrete is supplied in bulk tote bags and you are not using one of these pieces of important safety gear, contact your shotcrete equipment supplier. The safety of your crew is at stake!



**Dennis Wrixon** obtained his degree in Economics from Laurentian University in Sudbury, ON, Canada. After several years working underground in the mining industry in Canada, he got involved in the mining equipment business in 1981. In 1989, he started his own company, Minequip Ltd., specializing in shotcrete and grouting equipment sales and service. He has continued to work exclusively in this field in both Canada and the U.S., with applications in mining as well as tunneling. Currently, Wrixon is working for DSI Mining Canada where he is responsible for the coordination of the company's sales activities in the shotcrete, grouting, and sprayed membrane materials and equipment business throughout the Americas.