

Using a dust control on an overhead grinder

Susan Shepherd, Silica and Noise in Construction Project



Grinding the concrete residue from forms on ceilings is often done by standing on scaffolds and ladders creating a severe ergonomic hazard due to working overhead. **S & F Concrete of Hudson, Mass.** has been using a “giraffe” for many years to lessen this ergonomic hazard. The “giraffe” is a homebuilt structure of welded tubing with wheels and a pivot arm to hold the grinder at the ceiling height. The laborer pushes the giraffe around the area and can pivot the grinder against the ceiling.

Grinding ceilings produces a tremendous amount of silica-containing concrete dust. The grinder operator wears a cartridge respirator which requires fit-testing and a complete respiratory protection program. Other workers are often not allowed in the area while grinding is being done. For these reasons, S & F Concrete along with their general contractor, Suffolk Construction, looked for a way to control this dust. **Mike Joel**, Safety Officer of Suffolk Construction, was the driving force behind resolving the dust problem. **Steve Monteiro**, superintendent for S & F, along with **Butch Zircolo**, Safety Officer for S & F, took a hands-on problem solving approach to dust control and succeeded.

They asked their tool salesman to help solve the problem. He found a number of dust collector-grinder systems to fit on the cart, and they finally settled on one with a powerful enough grinder to be efficient for the work. This was the Eibenstock Model 1225 vacuum cleaner, rated at 130 CFM/ 98 in. water lift) and Model EBS 125 grinder (5 in. grinding wheel @ 10,000 RPM load speed). The trio along with site workers adapted the grinder to fit on the giraffe.



The grinder did burn out more often than the old one, increasing the expense of doing the grinding, but has been very effective at reducing the dust in the area. Not only is the health of the operator protected, but other workers may now work in the area. The greater productivity and reduced scheduling problems have offset the cost of the equipment.

Air sampling from U Mass Lowell (UML) documented the effectiveness of the dust collection. The respirable dust measured 0.094 mg/m³ and the respirable crystalline silica was “not detectable.” This is a good example of a subcontractor and general contractor working together to solve a problem to the benefit of workers’ health.