

Safety on the Job Site – Everyone’s Responsibility

Health and safety can sometimes be viewed as an inconvenience and an unnecessary expense. National figures, however, estimate that job-related accidents amount to 6.5 cents of every construction dollar. Implementing a company safety program, on the other hand, averages only 0.6 cents for every construction dollar. In addition to saving lives and reducing work related injuries, it’s easy to see that safety programs also provide a substantial opportunity for a company to save money. The challenge for many small companies is how to implement a safety plan with limited resources. One way to get started is the OSHA (Occupational Safety and Health Administration) Four Point Workplace Program.

Introduced in 1989 the Four Point Workplace Program helps employers and employees create a worksite free from occupational hazards. This program is outlined in the OSHA bulletin, 2209-02R 2005 Small Business Handbook. The four point program consists of:

1. Management Commitment and Employee Involvement
2. Worksite Analysis
3. Hazard Prevention and Control, and
4. Training for Employees, Supervisors and Managers

Paver installation companies in the United States and Canada should consider developing a workplace safety program that follows these four points. A safety and health plan based on these four elements may not guarantee full compliance with all OSHA standards, but these voluntary programs still recognize and promote effective safety and health management. Following this voluntary program can improve a company safety program that might already be in place, improve the operations efficiency and ultimately reduce insurance claims and other related costs.

The key to the success of a safety and health plan is to view it as a part of business operations and to make it part of day-

to-day operations. A key consideration is to make it part of the company culture. As this happens regularly by the company owners and foremen, safety and health awareness will become second nature to everyone in the company.

Two important web sites provide resources for employers and employees. The U.S. Department of Labor, Occupational Safety and Health Administration site is <http://www.osha.gov/> and the Canadian Centre for Occupational Health and Safety site is <http://www.ccohs.ca/>. These sites should be browsed for safety information and resources.

Implementing a Company Safety Program

The first point in the OSHA four point program is “Management Commitment and Employee Involvement.” Employees need to see leadership from the owner or manager that demonstrates preventing employee injury and illness. As the owner or manager of the company, some of the actions that can be taken by company leaders include:

1. Forming a joint employee-management safety committee
2. Developing a written company policy on the importance of worker safety and health and post this in a prominent location
3. Developing written health and safety objectives with employees

Job Title:	Job Location:	Analyst: J. Safety	Date
Task/Job function: 405 (from company chart of job functions)	Task Description: Employee takes marked pavers from pile and uses stationary diamond table saw to cut pavers		
Hazard Type: Stationary masonry saw on job site	Hazard Description: <ul style="list-style-type: none"> • Employee could cut fingers or hands with saw • Employee could have small pieces of concrete fly into eye • Employee lungs could ingest dust 		
Consequence: Serious injury to fingers, hands or eyes. Possible silicosis of the lungs	Hazard Controls: <ol style="list-style-type: none"> 1. Ensure guard is installed over table saw blade during cutting. 2. Wear eye protection. 3. Wear protective gloves. 4. Wear appropriate mask over nose and mouth 5. Confirm operation of dust control system on saw 		
Rational or Comment: Masks should be replaced daily. Replace filters on saw dust control system per X hours of use.			

Figure 1. Sample Job Hazard Analysis Form – This can be copied and used by paver installation companies. Source: <http://www.osha.gov/Publications/osha3071.html>

4. Staying active on all health and safety initiatives to demonstrate ongoing commitment
5. Ensure managers and supervisors follow all safety requirements that employees must follow
6. Include the employees in the safety inspections and in safety training
7. Include safety as part of every job responsibility
8. Ensure there are adequate resources for your employees to implement written safety measures and programs, including money, training and authority
9. Follow up on the progress regularly and reward those who do well and correct those who do not
10. Review safety objectives annually and make necessary adjustments as required



Figure 2. Dust mask

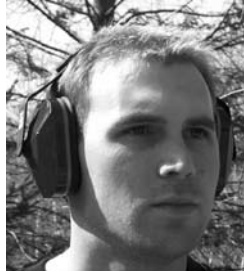


Figure 3. Ear Protection



Figure 4. Gloves for hand protection



Figure 5. Tape to protect fingers



Figure 6. Knee pads



Figure 7. Knee protection and seat



Figure 8. Eye protection

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Conducting a Hazard Analysis

Everyone in the company needs to understand where hazards occur in the workplace and their causes. This starts with conducting a work site analysis and determining a list of common jobsite hazards. The main objective of this exercise is to eliminate hazards. Where this isn't possible, the company management should establish procedures to control them. Conducting a Hazard Analysis includes:

1. Identifying and isolating specific tasks related to your company's operation
2. Identifying the risk of injury from such things such as vibration, dust, temperature, electrical, impact and lifting
3. Determining a way to eliminate the hazard or control the injury risk
4. Assign hazard control to the proper person on the job site and/or management

A simple form can be developed by you to implement your own Hazard Analysis. An example is shown in Figure 1 with completed sections for a paver table saw. All employees involved in every task, from the crew laborer to job site foreman to the owner should be involved in this process.

Information obtained from a job hazard analysis is of no use unless hazard control measures recommended in the analysis are incorporated into regular job tasks. Managers should recognize that not all hazard controls are equal. Some are more effective than others at reducing injury risk. Employees should continually assess the effectiveness of control measures for each situation.

OSHA describes the order of precedence and effectiveness of hazard control as follows:

1. Engineering controls
2. Administrative controls
3. Personal protective equipment (PPE).

Engineering controls include the following:

- Elimination/minimization of the hazard – Designing the facility, equipment or process to remove the hazard, or substituting processes, equipment, materials or other factors to lessen the hazard;
- Enclosure of the hazard using enclosed cabs, enclosures for noisy equipment, or other means;
- Isolation of the hazard with interlocks, machine guards, blast shields, welding curtains or other means; and
- Removal or redirection of the hazard such as with local and exhaust ventilation.

Administrative controls include the following:

- Written operating procedures, work permits, and safe work practices;
- Exposure time limitations (used most commonly to control temperature extremes and ergonomic hazards);
- Monitoring the use of highly hazardous materials;
- Alarms, signs and warnings posted at work and on the job site where possible;
- Developing a buddy system to protect fellow employees from hazards
- Ongoing safety training.

Personal protective equipment is acceptable as a control method in the following circumstances:

- When engineering controls are not feasible or do not totally eliminate the hazard;
- While engineering controls are being developed;
- When safe work practices do not provide sufficient additional protection; and
- During emergencies when engineering controls may not be feasible.

Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently. In reality, if the hazard cannot be eliminated entirely, the adopted control measures will likely be a combination of all three items instituted simultaneously.

Typical Hazards on a Hardscape Installation Project

In addition to the more common job site hazards, paver and hardscape installation job sites also have some of their own unique hazards. Some of these include:

- Back injuries from lifting heavier concrete products
- Back injuries from repetitive motion of paver and SRW installation
- Muscle pulls from digging and lifting
- Finger abrasion from handling concrete products
- Skin rashes or burns from job site chemical spills and splashes
- Eye injuries from saw cutting
- Lung and respiratory injuries from long term exposure to saw cutting dust
- Heat exhaustion
- Impact injuries from moving equipment
- Vibration related injuries from compaction equipment
- Hearing injuries from working with noisy, high decibel equipment such as saws and compactors
- Knee injuries from repetitive kneeling

Personal Protection Equipment

Typical protection equipment includes respirators, hearing protection, protective clothing, safety glasses, and hardhats. Some safety equipment has been developed especially for paver installers. These are illustrated in Figures 2 through 8 with other equipment used for safety in other construction operations. Some construction operations are noted where this safety equipment would be useful. ❖

The May 2006 magazine issue announced that at the ICPI Board of Directors approved advanced levels of certification. Details will be announced to all ICPI Certified Concrete Paver Installers as courses are developed. The next level of certification will include hourly requirements for continuing education

credits and this column will continue to offer one hour credits to those who successfully complete the questions. Earned credits can be applied to hourly requirements for advanced certification levels when the new programs are announced.

To complete the questions below, visit www.icpi.org and follow these links: Contractors, Certification, and Online Training. This test is labeled *Exam 10* and is offered with all other exams at no charge to ICPI members until the May 2007 issue. After that issue exams will be offered for \$20 to ICPI members and non members. Answers entered online will generate a certificate immediately upon successful completion and ICPI will maintain an automatic record of your continuing education credit.

Faxed answers will not be accepted. If more hourly credits are needed, see others offered on the web site.

1. *OSHA describes which of the following as the first order of precedence and effectiveness of hazard control:*
 - a. Administrative Controls
 - b. Personal protective equipment
 - c. Engineering controls
 - d. All of the above
2. *Which of the following is an example of an engineering control?*
 - a. A written operating procedure for cutting with a chop saw
 - b. Supplying all personnel with personal eyewear protection
 - c. Providing a protective guard on a table saw
 - d. None of the above
3. *The first step in conducting a hazard analysis on a job site is;*
 - a. Identifying and isolating specific tasks related to your company's operation
 - b. Reviewing the safety objectives of the company with all employees
 - c. Development of written health and safety objectives for all employees
 - d. All of the above
4. *An excellent resource for small companies to begin implementation of a safety program is:*
 - a. ICPI Tech Spec 3 Edge Restraints for Interlocking Concrete Pavements
 - b. The OSHA Four Point Workplace Program
 - c. The ServiceMagic web site;
<http://www.servicemagic.com/>
 - d. None of the above

5. *Introduced in 1989 the Four Point Workplace Program helps employers and employees create a worksite free from occupational hazards. This program is outlined in the OSHA bulletin, 2209-02R 2005 Small Business Handbook. The four point program consists of:*
 - a. Management Commitment and Employee Involvement
 - b. Worksite Analysis
 - c. Hazard Prevention and Control
 - d. Training for Employees, Supervisors and Managers
 - e. All of the above
 - f. a and b only
6. *An example of an administrative control is:*
 - a. Posting warning signs prominently on your job site
 - b. Providing safety gloves for all employees on a job site
 - c. Eliminating a job site hazard by changing or modifying a process on the job site
 - d. All of the above
7. *When developing a company safety program, which of the following is an example of an action for "Management Commitment and Employee Involvement"?*
 - a. Development of a written company policy on the importance of worker safety and health and posting this in a prominent location
 - b. Ensure managers and supervisors follow all safety requirements that employees must follow
 - c. Include the employees in the safety inspections and in safety training
 - d. Include safety as part of every job responsibility
 - e. All of the above
8. *Use of one hazard control method over another higher in the control precedence may be appropriate for providing interim protection until the hazard is abated permanently.*
 - a. True
 - b. False
9. *All employees involved in every task, from the crew laborer to job site foreman to the owner should be involved in the process of developing job hazard analysis forms:*
 - a. True
 - b. False
10. *Personal protective equipment is acceptable as a control method in which of the following circumstances:*
 - a. When engineering controls are not feasible or do not totally eliminate the hazard
 - b. While engineering controls are being developed
 - c. When safe work practices do not provide sufficient additional protection
 - d. During emergencies when engineering controls may not be feasible
 - e. All of the above