

Lesson 1: Construction Safety

This unit presents an exploration of building construction. Bureau of Labor statistics for 1997 show that the construction and agriculture (including forestry and fishing) industry divisions both have high fatality rates relative to the level of employment in those industries. Because these industries have such high rates of injury and illness, the first lesson of this unit focuses on safety. Being aware of and following good safety practices is absolutely imperative to protect everyone involved in the construction of a structure. It is important to stay alert, pay attention, and think ahead to avoid injury.

A few general considerations may help prevent or reduce the seriousness of injuries. Suitable protective equipment and clothing should be used as necessary. Long pants, long sleeves, and thick-soled shoes or work boots are highly recommended. For some jobs, a hard hat, work gloves, eye protection such as goggles or safety glasses, and hearing protection like ear plugs may also be required. Workers should try to avoid hazardous jobs while alone or isolated from others in case an injury occurs that requires assistance. Keeping a first aid kit at the site may also help in dealing with any injuries that do occur.

Heights and Safety

Working with heights is often unavoidable in construction. Falls from heights contribute significantly to the number of injuries and fatalities that occur in construction. While heights do present some special safety concerns, the risks can be minimized by observing the following safety tips.

- Ladders or any other equipment, such as scaffolds or lifts, must be well maintained and in good working order. Never use faulty equipment.
- The base of a ladder or the legs of a scaffold must be properly seated. They must be evenly set on a solid, non-slippery surface.
- Use any applicable safety equipment, such as safety belts and boots with non-skid soles.

Structural elements are all the materials that go into a construction project. They will vary with

Building construction	Specialization in:
Remodeling and renovation	Foundation work
Estimator	Framing
Bricklayer	Drywalling
Heavy equipment operator	Insulating
Terrazzo builder	Roofing
Building supply retailer	Siding

- Use extra caution when carrying materials. Keep loads small enough to be manageable.
- Be aware that roofs can be slick, especially early in the mornings when dew may be present. Move slowly and carefully.
- Do not attempt to work at heights if experiencing any dizziness or disorientation.

Safety with Construction Equipment and Tools

Construction projects may involve the use of a wide array of equipment and tools. Some of them, such as a hammer, are very simple to use, while others, such as propane torches, require more knowledge to operate correctly. However, most equipment and tools can cause injuries if they are handled carelessly. To use construction equipment and tools effectively and efficiently, remember the following tips.

- Keep tools well maintained and in proper working order.
- Use tools for their intended purpose. Most tools are designed for specific purposes, and their use for other jobs is frequently unsatisfactory or dangerous.
- Follow the manufacturer's instructions for the use of equipment and tools. Also, take heed of any safety recommendations.
- Fatigue will dull the senses and can contribute to carelessness, which can be hazardous when working with equipment and tools. Take breaks as needed. Construction work requires your full attention at all times.

Safety and Structural Elements

each project. Some examples would be lumber, steel, concrete, and plumbing and electrical

Building Construction

supplies. To handle these materials safely, remember the following guidelines.

- Unloading materials at a work site can present a variety of hazards. Materials may be large and heavy. Care should be taken when loading and unloading. Avoid standing where materials (or the equipment handling them) could be a hazard in the event of a mishap. Always try to find a position that would be safe from an unexpected spill--at the end of the material if it is stacked very high or, with concrete being delivered, facing the truck while it unloads.
- Care and good technique are necessary when lifting construction materials. They should be moved in some other way if possible, such as pushing, rolling, or sliding. If materials must be lifted, the best way to do so is to bend at the knees, keeping the back straight, and lift the object by straightening the legs. The process should be reversed when setting materials down. To turn, the feet should be moved to a new position; twisting at the waist should be avoided to prevent back injuries.
- Some materials, such as concrete, may be caustic and should be handled wearing protective clothing and boots.
- Electrical hook-ups are often necessary at construction sites. They should only be assembled by someone who is very knowledgeable and qualified to establish

such service. Sufficient grounding and devices that provide protection from current (such as circuit breakers) must be in place.

- Materials and waste materials should be kept organized and out of the way while working. Leaving materials in an area of activity creates a situation where workers can trip.

Summary

While following the tips on working with heights, equipment and tools, and structural elements given in this lesson will improve safety at a construction work site, the most important step in preventing injury may be paying close attention to what is happening. An awareness of what is going on will allow a worker to avoid hazards and thus reduce injuries on the site.

Credits

National Institute for Occupational Safety and Health (NIOSH). "The National Ag Safety Database (NASD)." <http://www.cdc.gov/niosh/nasd/nasdhome.html> (5 Oct. 1998).

Bureau of Labor Statistics. "National Census of Fatal Occupational Injuries, 1997." <http://stats.bls.gov/special.requests/ocwc/oshwc/cfoi/cfnr0004.txt> (13 Oct. 1998).