

Carmel Central School District

Personal Protective Equipment Plan and Training

2006 – 2007

Overview

Methods of controlling potentially harmful exposures to hazardous substances or forms of energy found in the workplace environment typically are classified into three broad categories: engineering controls, administrative controls, and personal protective equipment (PPE). Properly implemented engineering and administrative controls can greatly reduce or eliminate the hazard at the source. In contrast, when PPE is the primary control method, the hazard is still present. The particular protective device provides a barrier between the hazard and the worker. Improper use or failure of the device means the worker is exposed to a direct threat to their health and safety.

Safety Equipment Use Policy

It is the policy of Carmel Central School District for employees to wear the prescribed personal protective equipment (PPE) when exposed to potentially dangerous conditions or hazards not controlled by engineering or administrative controls. By using the proper PPE, you are protecting yourself from injury. The Carmel Central School District will provide the necessary PPE for use in performing daily work assignments. It is the employee's responsibility to wear this protective gear. This equipment includes, but is not limited to:

- Hard Hats
- High Visibility Vests
- Rain Gear
- Gloves
- Goggles
- Hearing Protection
- Welding Clothing
- Eye Protection
- Respiratory Protection
- Special Application Tools
- Protective Clothing
- Life Preservers

Request for equipment not immediately available should be directed to your Supervisor. Failure to use available and required PPE is the employee's responsibility and ignoring this requirement will not be tolerated.

Other protective equipment is provided in order to protect employees from unnecessary exposures. This includes barricades, cones, warning signs, warning lights, and many other items. Consult with your Supervisor for more information.

Hard Hat and Vest Policy

All employees must conform to the Carmel Central School District Hard Hat & Vest Policy. This policy applies to all employees, supervisors, and managers, including visitors. The provisions of this policy are:

- Employees exposed to overhead hazards or hazards from flying objects are required to wear approved hard hats at all times in all locations, including indoors.
- Hard hats must be worn in the way it is designed and intended for by the manufacturer.
- Employees working or otherwise located within the highway right-of-way are required to wear approved hard hats AND approved vests, shirts, or jackets.
- Shirts and jackets may not be cut or altered and must be replaced when faded beyond appropriate appearance.
- Without exception, employees flagging must wear approved safety vests and hard hats.
- Hard hats and vests will not be required for operators inside a **completely enclosed cab** (truck or equipment) constructed of steel frame and glass, or inside an automobile. **They must be readily available when leaving the truck or equipment.** If the supervisor believes that the enclosure will not afford adequate head protection in the event of an accident, a hard hat will be required.
- Vests and belts **WILL NOT** be worn while working in trees, or operating a chain saw or brush chipper. Supervisory discretion will dictate the appropriate use of vests and belts while operating machinery with accessible moving parts.
- Hard hats and safety harness will be required while working in the bucket of a boom truck.
- There may be isolated and specific situations of limited duration where the wearing of protective gear poses a hazard itself. When such a situation exists, supervision has the authority to except this procedure as necessary, only for such limited duration.
- Failure to wear available protective gear when ordered to do so is insubordination and misconduct. Violation may result in disciplinary action.

Eye Protection

Protective eye and face equipment is necessary where there is the danger of injury from flying objects and liquids, welding flash or other sources of potential eye injury. Protective equipment must protect against the specific hazards it is designed for, be reasonably comfortable, fit snugly, and not interfere with movement, be durable, and be kept clean and in good condition.

All safety glasses must have side shields and must meet or exceed the requirements of American National Standard (ANSI) Z87.1 or Z87.1+ of 1989 for protective eyewear.

Lenses designed to ANSI Z87.1+ offer more impact resistance than those designed to ANSI Z87.1. Both corrective lenses and non-prescription lenses are available with this new designation.

Protective eyewear for employees who wear corrective glasses must be one of the following:

1. Eyeglasses with protective lenses that also provide optical correction. These lenses must meet the requirements of ANSI Z87.1 or Z87.1+.
2. Goggles to be worn over regular glasses.
3. A face shield to fit over regular eyeglasses.

Types of Specialty Eye Protection

Welding & Cutting

Welding, cutting and brazing require welding helmets or face shields, weld shielding should be used to protect nearby employees against welding arc and from flying objects.

Helmets and face shields and other eye protection must be made of a material that insulates against heat and electricity and is flame resistant. Helmets must be provided with filter and cover plates designed for easy removal. All parts of welders' helmets must be constructed of a material that will not readily corrode or discolor the skin.

All glass for the welding lenses must be tempered safety glass that is substantially free from flaws. Lenses must have a permanent distinctive marking which readily identifies the source and shade in accordance with ANSI Z87.1.

Chemical Splash Goggles

Chemical splash goggles and face shields are available to protect the eyes and face against chemical splash hazards. Chemical splash goggles may be ventilated with indirect or hooded vents **only**. These special vents prevent a chemical splash from penetrating ventilation ports in the goggles.

Chemical splash goggles are designed with a corrosive-resistant molded frame and fit snugly against the face and protect the eyes from chemicals, acids, caustics, and fine dusts. For optimal protection, these goggles must be worn in conjunction with a face shield.

Impact Protection

Glasses and goggles with clear hardened glass or hard plastic lenses offer protection against moderate impact hazards. These lenses must be marked with the ANSI Z87.1 or Z87.1+ marking to ensure they are considered safety lenses. Side shields **must** be a part

of such eyewear. Side shields may be attached to the temples or molded with the lens of none-prescription safety glasses. The molded lens type offer better protection against glare and splash than the traditional style.

Goggles designed especially for impact-resistance to flying chips, particles and sparks usually have ventilation ports to prevent fogging. Although they will prevent the entry of particles and provide impact protection, they will not exclude fine dusts or liquids from entering the goggles.

Various types of face shields are available to be worn alone or over prescription glasses. Other face shields are available which can be attached to hard hats. These can be easily removed or flipped-up out of the way when not needed.

Contact Lenses

The use of **contact lenses as a means of eye protection is prohibited**. Contact lenses do not provide eye protection to the wearer. Their use without additional eye/face protection is not permitted. When a wearer of contact lenses suffers a chemical splash in the eyes, delay in removing the lenses and properly irrigating the eyes complicates eye treatment. Contact lenses should not be worn in dusty environments. Employees who use contact lenses must inform their supervisor so that appropriate action can be taken in an emergency. Any wearer of contact lenses must wear additional approved eye protection.

Emergency Eye Washes and Safety Showers

Emergency Eyewashes and Safety Showers are two essential pieces of emergency equipment. One or the other should be available in facility locations where there is the potential for an eye injury from the splashing of corrosive or irritating liquids. These facilities must be capable of providing 15 minutes of flowing clean water.

Portable units are available for field applications where the potential exists for a splash type injury. These portable units feature either hand pressurized or gravity flow models.

Employees must be aware of the availability and location of these devices. Accessibility to these devices must be maintained free and clear at all times. The bowls of eyewashes and safety showers must be maintained free and clear at all times. The bowls of eyewashes and safety showers must be kept clear of rags or other inappropriate storage. Employees must receive training in the proper use of fixed and portable emergency eyewashes and safety showers.

Fall Protection

Employees may need to work in elevated situations. The tasks can be as simple as changing a light bulb or as difficult as trimming a tree. Both of these work situations

require fall protection for the employee while the job is being done. When working at elevation, fall protection is mandatory. There are a variety of fall protection systems to prevent employees from falling. The specific equipments/system necessary will be determined after an evaluation of the job to be completed. The equipment/system may require active, passive or a combination of these fall protection systems. Consult with your supervisor for specific details.

At a minimum, employees will wear a full body harness with a shock-absorbing lanyard when working above 6 feet, except on a ladder.

Foot Protection

A work boot is required by the Carmel Central School District. The work boot must measure a minimum of six inches from the top of sole to top of the boot. The boot must be leather or comparable material that is resistant to cuts, penetration, and heat. Work boots must be laced at all times. Insulated work boots should be worn in cold conditions and rubber boots may be worn when working in water. If you are not sure a work boot meets the requirements, ask your supervisor before you make the purchase.

Protective footwear generally means shoes and boots specifically designed to: resist impact to toes and feet, penetration of the sole, slippery walkways, penetration by water, deterioration by chemicals and solvents, temperature extremes and hot materials, impact to the metatarsal area, cuts to the foot and ankle, and electrical hazards. This footwear must meet the requirements of American National Standard (ANSI) Z41.1-1991.

In situations where foot or toe crush injuries could occur, metal or fiberglass toe protectors must be worn for impact protection. These protectors must meet or exceed the requirements of (ANSI) Z41.1-1991.

Types of Foot Protection

Safety toe footwear is probably the most well known type of foot protection. Steel and fiberglass toed shoes and boots must meet minimum requirements for both compression and impact testing (ANSI) Z41.1-1991.

Penetration of the sole of the foot is guarded against by means of soles reinforced with a flexible steel innersole. However, these soles are not suitable for work where contact with energized electrical equipment may occur.

Footwear designed for working in slippery areas usually has soles of neoprene, synthetic rubber, or a material impregnated with an abrasive substance to provide traction while working in these environs.

Other work boots have soles that are resistant to oils, grease, creosote, and metal filings. They can be made of synthetic rubber, neoprene or cord.

Work boots of natural rubber resist some chemicals. Natural rubber also resists water and insulates against electricity.

One way to protect your feet from extreme cold is to wear insulated work boots. The insulating material should not absorb perspiration, moisture, oil, or odors.

When working with some materials, such as logs and drums, workers need additional foot protection. Logs and drums can roll, so the foot bones (called metatarsals) need protection. Work boots with built-in metatarsal protection or protective cap guards are available.

Some footwear is designed to protect against high voltage electricity. This footwear dissipates static electricity and provides a stable conductive path. Exposed metal parts are made of nonferrous metal that do not conduct electricity.

Hand Protection

Gloves protect the hands against abrasions, hazardous chemicals, lacerations and punctures. Once the degree of protection is established, then the type of glove becomes important. Glove manufacturers provide chemical resistance guides and sets of specifications for different glove materials. This information includes general properties of glove material, where they may be used, and the types of chemicals and other materials they resist. The following table is a simple reference guide to proper hand protection.

<u>Hazard</u>	<u>Protection</u>
Mild Irritants	Light Duty Gloves
Heat or Flame	Aluminized Fabrics, Aramid, Kevlar, Leather or Wool Gloves
Heavy Materials	Canvas or Leather Gloves
Electricity	Rubber Inner Gloves covered with Leather Outer Gloves
Chemicals	Gloves: Specially Designed Gloves for the chemical exposure
Liquids (non-chemical)	Moisture Resistant Gloves or Rubber Gloves
Sharp Objects	Kevlar or Metal Mesh Cut Resistant Gloves.

Head Protection

Protective headwear is designed to shield the wearer's head from the impact and penetration of falling objects or flying particles and, in some cases, from high-voltage electrical shock and burns. Protective headwear can also prevent the head and hair from becoming entangled in machinery. All hard hats worn by the Carmel Central School District must meet or exceed the requirements of American National Standard Institute (ANSI) Z89.1986. Bump caps are not considered hard hats and are not permitted to be worn by employees. These devices do not provide any head protection to the wearer and may provide a "false sense" of protection.

Employees must inspect their hard hats daily for cracks or other signs of damage or deterioration. If defects are identified, the hard hat must be replaced.

Hard hats are not permitted to be painted or altered in any way or covered with stickers or decals with the sole exception of the Carmel Central School District decal and reflective material.

Hard hats are to be inspected semi-annually by department supervisors. Hard hat suspensions must be replaced annual and shells a minimum of once every three years.

If a hard hat is dropped more than 15 feet or is struck by a dropped object, it must be replaced immediately!

Employees must follow all other provisions of the hard hat policy at all times.

Hearing Protection

Medical professional have long been aware of the problem of noise induced hearing loss in the industry. Studies have shown that even brief exposure to high levels of noise can cause hearing loss.

Certain operations, or operation of equipment, can produce noise beyond 85 dBA. In these instances, employees **must wear** hearing protection.

Hearing protection comes in a host of varieties (disposable earplugs, earmuffs, sound bands, molded earplugs). The type chosen must be made based on the Noise Reduction Rating (NRR) of the device. To determine the appropriate protector, subtract seven (7) from the NRR of the protector. Then subtract the resulting number from the noise level of the noise-producing device. The resultant decibel level must be below 85 dBA. Supervisors must ensure proper hearing protection is available and is worn.

OSHA standards require that hearing protection **be made available** when the time-weighted average noise level for an 8-hour period exceeds 85 decibels. Hearing protection is **mandatory** when noise exceeds 90dBA and the time periods specified in the chart. Keep in mind with noisy equipment; some damage may still take place even

with reduced work times. Hearing protection is the best bet when using **ANY** noisy equipment.

The most common methods for reducing the hazard from noise are to:

- Isolate the workers or machines
- Insulate the machines
- Reduce exposure time
- Increase the distance between the noise source and employees
- Use hearing protection

The use of Hearing Protection may require the development of a Hearing Conservation Program and additional employee testing and training.

High Visibility Apparel

Employees working in the highway right-of-way must wear high visibility orange apparel, including a vest, hard hat, shirt, jacket, or coveralls. Vests and hard hats worn in work zones must have high visibility reflective trim.

Highly visible apparel is not required in an automobile, truck cab or inside the operator's cab of a piece of construction equipment. However, when these individuals are in the work zone, appropriate apparel must be worn.

Loose fitting flagging vests are not to be worn while working in the bucket of a platform aerial lift device or while operating brush chippers, chain saws or tub grinders.

Respiratory Protection

The selection of the proper type of respirator is based on the nature of the hazard: chemical properties, label warnings, effects on the body, concentration, established permissible levels of exposure, the period of time respiratory protection must be provided, and the activities of workers in the hazardous area. The type and physical characteristics of the respirator are equally important.

One limitation of all respirators is that certain gaseous contaminants can enter the body by means other than the respiratory tract. Therefore, a respirator alone may not provide complete protection for the situation.

Air Purifying Respirators

This type of respirator cleans the contaminated air before it reaches the user by mechanical filter, chemical cartridge, or combination of these.

Mechanical filters remove particulate matter from the inhaled air. Chemical cartridges remove gases and vapors from the inhaled air. Neither of these are designed for

atmospheres with insufficient oxygen concentrations or with contamination levels above the specified limit of the device. The airborne concentration of the contaminants, the breathing demand of the wearer, and the capacity of the filter or cartridge limit the useful life of all respirators.

Mechanical filter respirators are designed to protect against airborne particles such as dust, mist, metal fumes, smoke, etc. They consist essentially of a face piece and filter(s). Attached to the face piece is one of several types of filters, which trap harmful particles as air is inhaled through the filter.

Chemical cartridge respirators use chemical filters to protect against certain gases and vapors. The contaminant is chemically neutralized, rather than trapped in a screen-like material. They protect against intermittent exposure to light concentrations of gases and vapors, but are not intended for use in immediately dangerous to life and health atmospheres.

Chemical cartridges **must not be used** in the following circumstances:

- **WHERE THERE IS INSUFFICIENT OXYGEN TO SUPPORT LIFE.**
- Protection against material that is extremely toxic in very small concentrations.
- Exposures to harmful gaseous matter that cannot be detected clearly by odor.
- Exposure to gaseous material that is harmful to the eyes, unless adequate eye protection is provided.
- Exposure to harmful material that the particular cartridge is not designed to stop.

Cartridges are color-coded to indicate the contaminant guarded against.

Respirators must be approved by the National Institute of Occupational Safety and health (NIOSH). NIOSH assigns the respirator with an approval number. These numbers start with "TC" and have a series of numbers following the "TC"

The use of respirators requires the development of a Respiratory Protection Program and additional employee testing and training.

Work Clothing Guidelines

Employees of the Carmel Central School District must wear work clothing that conforms to the following guidelines.

Employees working with corrosive chemicals, hot asphalts or other materials, splashing or flying materials, abrasives, brush, sparks, or in trees, must wear trousers. Their legs must be protected from these exposures.

Employees working with corrosive chemicals, splashing hot liquids, flying sparks, chips, or in heavy brush, must wear a long sleeved shirt that does not expose their arms or torsos.

Employees working in any location except for strictly office environments shall not wear sneakers, sandals, clogs, or other similarly inappropriate footwear.

Employees working near machinery with accessible moving parts (lathes, gears, pulleys and sprockets, chain-drives, chain saws, brush chippers, etc.) shall not wear their hair below the top of the shirt collar. Longer hair must be netted or secured atop the head while working in such areas. Braided hair and ponytails must be tucked inside a shirt collar while working around this equipment and machinery.

Employees working near machinery with accessible moving parts (lathes, gears, pulleys and sprockets, chain-drives, chain saws, brush chippers, etc.) shall not wear loose fitting clothing, including safety vests and shall not wear jewelry such as rings, bracelets, necklaces, watches, etc.

Training

The Public Employees Safety and Health (PESH) program in NYS requires employees to receive annual training in the use and proper wearing of PPE. This training must be documented and training records maintained.

Personal Protective Equipment Hazard Assessments

PPE hazard assessments for each job task have been developed. These hazard assessments identify the PPE an employee will need for assigned tasks and equipment operation.