ALGONQUIN COLLEGE | Risk Management

Personal Protective Equipment Program (PPE)

OCCUPATIONAL HEALTH & SAFETY

Revision Date: February, 2016

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1.0 Glossary

CSA: Canadian Standards Association, create safety standards to be used as guidelines.

Competent Person: A person who, because of training and experience, is capable of identifying hazardous or dangerous conditions.

Hazard Assessment: Investigating the work environment for potential dangers which could result in injury or illness.

Personal Protective Equipment (PPE): Devices worn by the employees to protect against hazards in the environment. Examples include safety glasses, face shields, respirators, gloves, hard hats, steel-toe shoes, and hearing protection.

Permissible Exposure Limit (PEL): The PEL for a substance is the 8-hour time-weighted average or ceiling concentration above which workers may not be exposed.

Qualified Person: A person designated by the employer who is knowledgeable about and familiar with all relevant manufactures' specifications and recommendations; is capable of identifying existing or potential hazards in specific surroundings or working conditions which may be hazardous or dangerous to employees; and has been trained for the specific task assigned. When work is to be supervised by a qualified person, the qualified person shall have the necessary authority to carry out the assigned work responsibilities.

2.0 REFERENCES

- University of Maryland - Personal Protective Program.
- Construction Safety Association of Ontario (CSAO) - Personal Protective Equipment – User’s Guide.
- Centre for Disease Control (CDC) – Personal Protective Equipment Program
- Canadian Center for Occupational Health and Safety (CCOHS)
- Algonquin College’s Hearing Conservation Program

3.0 PREAMBLE

Personal protective equipment is used as a temporary hazard control or the last line of protection for workers to use to protect themselves from injury. The type of PPE used will depend on the work environment, tasks, hazard and the level of exposure to the hazard.

The Personal Protective Equipment (PPE) Program is in place to provide the College community with the necessary information to identify hazardous work situations that require the use of PPE, the proper selection and use of PPE, training and documentation of this information. This information is important to help ensure the safety and health of all employees at Algonquin College to minimize the impact of exposure to actual or potential hazards and to achieve regulatory compliance with the Occupational Health & Safety Act.

4.0 SCOPE

College employees who currently utilize PPE or have the potential to encounter hazards to the eyes, face, head, feet, hands, legs, and body, or who are exposed to electricity or heights, as identified during a hazard assessment of the task or work area, will be required to participate in this PPE Program. PPE will be selected by the manager or supervisor and will be used to protect employees from the actual and potential hazards that are likely to be encountered.

PPE includes all clothing and work accessories designed to protect employees from workplace hazards. PPE should not be used as a substitute for engineering controls, work practices, and/or administrative controls to protect employees from workplace hazards. The College will strive to eliminate and controls hazards at their source, or between the hazard and the worker, before selecting PPE as the control measure. When the hazard cannot be removed or controlled adequately, PPE will be used. PPE should be used in conjunction with permanent protective measures, such as engineered controls, elimination or substitution of less hazardous chemicals, and safe work practices.

5.0 RESPONSIBILITIES

5.1 Senior Management, Deans, Directors,

- Provide the resources and direction necessary to ensure that an effective PPE program is in place and is strictly adhered to
- Designate and empower individuals who must participate in, and, who will be responsible for the preparation and implementation of the PPE Program

- Provide administrative and financial support for this program within individual departments
- Ensure the PPE Program is implemented and maintained within the department and area

5.2 Managers, Supervisors

- Implement all aspects of this program, including documentation of the hazard assessment and training
- Provide and make available all necessary PPE
- Conduct hazard assessments and ensure that employees are informed, trained, and provided with appropriate PPE to be protected from potential hazards associated with job tasks
- Ensure workers are trained prior to using any required PPE
- Be familiar with the applicable Occupational Health and Safety Act, Safety Standards, and safety practices to protect themselves and their fellow employees
- Ensure employees are wearing the required PPE and working according to the College's program and procedures, as trained.

5.3 Employees

- Comply with the Program and any further safety recommendations provided by supervisors and/or Safety and Security Services regarding PPE.
- Employees must wear all required PPE, as indicated in the PPE program and as per their training
- Report any unsafe or unhealthy work conditions and job related injuries or illnesses to the supervisor immediately.
- Report to their Supervisor if conditions in the workplace change in such a way as to render the PPE ineffective to protect the worker from being exposed to a hazard.

5.4 Occupational Health & Safety Section (OHS)

- Provide technical information and assist departments in implementing an effective PPE program in their workplace.
- Coordinate training for PPE instruction and fitting (as required), as needed.
- Review and revise the PPE program, as needed for compliance with applicable regulations and Safety Standards.

6.0 HEAD PROTECTION

The College will follow the CSA Standard Z94.1-05, where the workers are exposed to the hazard of head injury, in order to meet the requirements of Regulation 851 for Industrial Establishments, s. 80.

The Canadian Standards Association Z94.1-15: Industrial Protective Headwear. The Standard defines the areas of the head that are to be protected and includes basic performance requirements for impact protection, object penetration, stability and dielectric properties (the ability of a material to resist the passage of electric current).

6.1 Selection:

All safety headwear is required to offer protection not only from impact to the top of the head, but also lateral protection. In order to ensure the maximum level of protection, nothing must be placed between the suspension and the shell. There must be clearance inside the headwear while it is being worn in order to absorb the shock of an impact. There are 2 types of headwear that provide this type of protection:

- **Type 1** which provides protection from impact and penetration at the crown or top of the head

- **Type 2** which provides protection from impact, penetration at the crown, sides and back of the head.

Each type is available in the following classes:

- Class G - General Use, limited voltage protection (general trades)
- Class E - Electrical, high voltage protection (electrical trades)
- Class C - Conducting, general use, protection from impact and penetration only (non-electrical trades)

The College shall adopt Class E on the new revised CSA standard as the College standard. Class E protective headwear is most commonly used on construction sites, renovations and in areas where protection from electrical and impact protection is required.

Class E protective headwear are available in polycarbonate and polyethylene. The choice of material depends on temperature exposure and chemical exposure.

Polyethylene is the most popular helmet material as it offers good general protection and chemical protection.

Polycarbonate is used where high and low temperature exposures occur; it also provides better protection against impact. It is preferred by the electrical companies. It is also more expensive than polyethylene.

For your information, Class E protective headwear in both materials may be available in hat (Type I) and cap (Type II) style. Cap style is the most common style of protective headwear. However, where the possibility of water or small debris going down the back of the neck exists, the hat is more applicable.

6.2 Fit:

Safety headwear consists of a shell that is on the exterior, and the suspension which is on the inside of the headwear. They work together to provide protection from injuries due to impact.

The suspension system or headband inside the headwear should be adjusted so that it will remain on the head when bent over, but not so tight that is leaves a mark on the forehead.

Where the possibility of the protective headwear falling off exists during the course of normal duties, a chin strap shall be installed that will firmly keep the protective headwear in place.

6.3 Care:

Safety headwear should be regularly inspected for damage. Damage to safety headwear can significantly reduce the protection it provides. If the shell shows signs of wear, cracks, significant scratches or gouges, it should be replaced. Both the exterior and the interior suspension system should be regularly inspected for damage or deficiencies. Signs of wear or damage include: cracked or torn adjustment slots, frayed material or broken threads. If the suspension system is worn, it should be replaced with a liner recommended by the manufacturer.

Headwear that is regularly exposed to chemicals, sunlight or heat can become brittle or stiff and become more susceptible to damage. Workers should look for cracks, or dull or a chalky appearance. Headwear should be replaced if it has sustained any type of impact, even if damage is not visible,

Alteration to the headwear are not permitted, nor is painting or applying stickers to the exterior shell, as it can hide damage to the shell, and the chemicals contained in paints and adhesives can cause the plastic shell to become brittle. If your headwear requires the application of information, check with the manufacturer to determine the medium that will not damage the shell.

The suspension system should be cleaned regularly to extend its life, as per the manufacturer’s instructions. Sweat, hair oils, dirt, insect repellents, and hair products can cause deterioration of the suspension materials.

7.0 FOOT PROTECTION

The College will follow the CSA Standard Z195-14 where the worker is exposed to the risk of foot injury, in order to meet the requirements of Regulation 851 for Industrial Establishments, s. 82.

CSA –certified protective footwear must be worn where there is a risk of foot injury. This includes impact, compression, puncture, slips, electrical exposure or chemical exposure. Supervisors are responsible to ensure foot protection appropriate for the task being performed is supplied to workers, in accordance with the collective agreement, and to ensure that workers wear the protective footwear when working.

Safety footwear will be worn where there is a hazard to the foot. The selection of the appropriate type and grade of protective footwear will be determined based on the hazards that workers will be exposed to.

In instances where the applicability of these guidelines is unclear, OHS and a worker designate will assess the work area, at the request of workers or supervisors, to determine the requirement for and/or appropriate type of protective footwear. Further, the Joint Occupational Health & Safety Committee (JOHSC) may recommend the payment of protective footwear allowance under circumstances, which fall outside of these guidelines, in accordance with the collective agreement.

7.1 Types of Safety Footwear

Safety footwear can be divided into three basic types, shoes, leather boots and some form of chemical compound/ rubber boot for special applications.

i. Green tag - CSA Grade I **shoes** should be worn where protection of the ankle and shin is not required. This includes, but is not limited to, laboratories, shipping and receiving areas, carpentry, machine shops, and interior custodial staff.

ii. Green triangle - CSA Grade I **boots** should be worn where the possibility of ankle, shin and sole injury could occur. This includes, but is not limited to, construction labs, automotive, buildings and grounds, sheet metal shop, heating and cooling shops.

iii. Green triangle - CSA Grade I **rubber boots** shall be worn under the same conditions as in (ii) and where the work involved necessitates working in wet environments. This includes, but is not limited to; buildings and grounds, food and beverage wash areas, fire protection labs.

Green triangle - CSA Grade I **chemical-resistive boots** shall be worn where the possibility of chemical splash could cause injury.

7.2 Grade

Grade is the level of protection offered by the type of footwear selected. The level of protection is regulated by CSA. CSA-approved safety footwear must be worn where safety footwear is required. The appropriate grade of protection will be determined by the hazards that workers will be exposed to such as toe impact, sole puncture or electrical contact. The safety footwear will have a CSA approved symbol which indicates the grade on the footwear itself.

Symbol	Grade	Description	Industry Use
	CSA Grade 1	**Green triangle - CSA Grade I** Has a steel plate running the length of the sole to provide puncture resistance in the sole. **Green tag - CSA Grade I** Has no steel plate in the sole and therefore offers no puncture resistance in the sole.	Heavy industry, construction, provides impact protection up to 125 joules (approx. 92 lbs)
	Electrical shock resistant footwear shall prominently display the omega symbol utilized to designate that the footwear is approved as electrical shock resistance.	Provides sole and toe protection.	Industry with accidental exposure to live electrical conductivity
	CSA Grade 2	Provides sole and toe protection	Light industry. Toe impact protection up to 90 joules (approx.66lbs)

7.3 Slip Resistance:

Design factors outlined for consideration when selecting slip-resistant soles include shape of sole, tread, shape of heel, softness and hardness

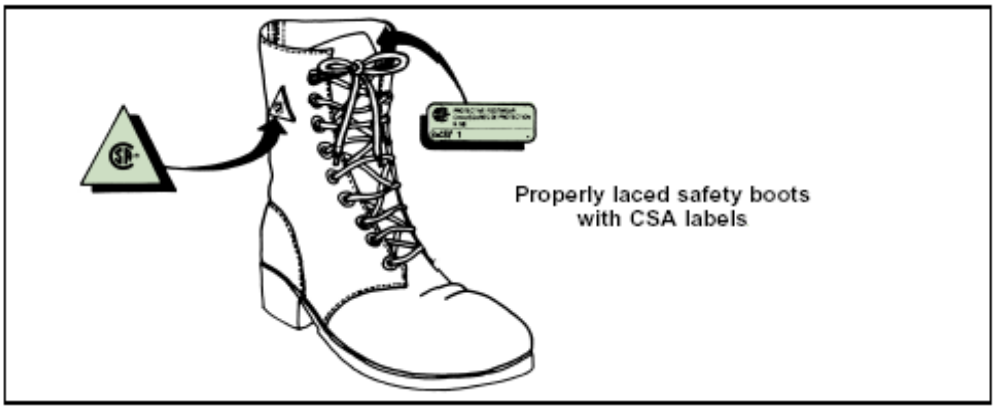
of the sole. Work environment considerations include type of flooring, floor finish, dry wet surfaces, temperature of air and floor.

7.4 Fit:

Boots and shoes should have enough toe room (toes should be approximately 12.5 mm from the toe to the tip of the boot). Ensuring the proper fit is essential for boots to be comfortable. Make allowances for extra socks or orthotics. If you require the use of arch supports or orthotics, check with the manufacturer to ensure that they do not affect the level of protection. Boots should fit snuggly around the heel and ankle when laced. Boots should be fully laced in order to prevent ankle injuries.

7.5 Care:

If the footwear will be exposed to water, they should be protected using a water-resistant to coating. This will prolong the life of the footwear. Footwear should be regularly inspected for damage such as crack in the soles, breaks or tears to the leather, or exposed toe caps. When damage such as this exists, it should be repaired or replaced. Electric shock resistant footwear is negatively impacted by wet conditions and with excessive wear. It should be noted that footwear that is exposed to sole penetration or impact may not have visible signs of damage and should therefore be replaced after the exposure.



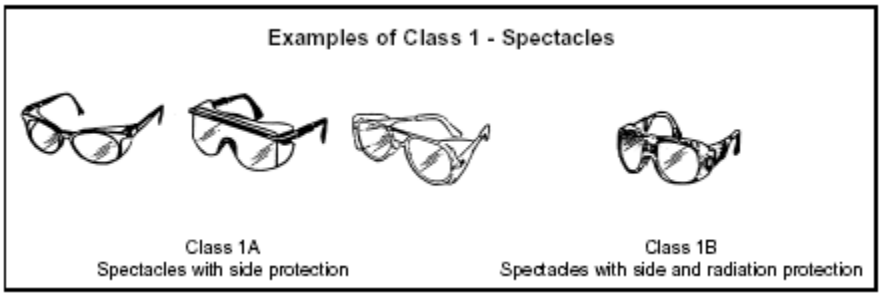
8.0 EYE PROTECTION

CSA-certified safety glasses must meet the criteria for impact resistance as per the standard, CSA Z94.1.3-09. Safety glasses lenses are made of plastic, Trivex, glass or polycarbonate. It is important to ensure that the appropriate types of lenses are selected in order to ensure that it provide adequate protection. When selecting the appropriate safety eye wear, please refer to the CSA standard or contact Occupational Health and Safety for guidance.

CSA-certified protective eyewear must be worn wherever there is a risk of eye injury. Supervisors are responsible to ensure eye protection appropriate for the task being performed is supplied to workers, in accordance with the collective agreement, and that workers wear the protective eyewear when working. Section 81 of the Industrial Regulations provides the legal framework.

In order to ensure that the safety glasses are in fact CSA-certified, check the lenses, frames (front and temple), removable shields, or other parts of the safety glasses for the manufacturer or supplier's logo etching. CSA-certified safety glasses have frames that are much stronger than regular streetwear frames and are often heat resistant. They are designed to prevent the lenses from being pushed into the eyes in the event of impact.

OHS and a worker designate will assess the work area, at the request of workers or supervisors, to determine the requirement for and/or appropriate type of protective eyewear. Upon such determination, the JOHSC may recommend payment of an allowance to affected workers in accordance with the collective agreement.



8.1 Fit:

Glasses should fit properly in order to ensure that they provide maximum protection. Eye size, bridge size and temple length can impact the safety glasses. Glasses should be supported by the bridge of the nose. Safety glasses

should fit comfortably over the ears and be as close to the face as possible. Whenever possible, glasses should be individually assigned.

8.2 Care:

Safety glasses should be properly maintained to ensure that they function properly and in order to prolong their life. Glasses should be cleaned daily as per the manufacturer's instructions in order to ensure that they do not get scratched. Glasses should be stored in a clean, dry place where they cannot be damaged or scratched. Scratched lenses will impair the worker's ability to see properly and can weaken the lenses themselves. Scratched, pitted, broken, or poorly fitting safety glasses should be replaced immediately.

8.3 Requirements:

1. Only CSA approved safety eyewear shall be worn; this eyewear shall bear the CSA mark.

2. Hardened prescription glasses are not to be considered as approved. Only a combination of prescription glasses with a CSA approved goggle or face shield shall constitute compliance with this requirement.

   Prescription lenses mounted into CSA approved frames cannot be considered approved.

3. Safety eyewear can be broken down into three types:

   a. Glasses with side shields which are normally rated for impact protection only but may be rated for radiation protection;
   Glasses with side shields rated for radiation protection;

   b. Goggles which are rated for impact protection, chemical splash protection, radiation protection; and

   c. Face shields, which are rated for impact protection, chemical splash protection, and for use in some welding and metal pouring operations.

4. Only chemical protective goggles, face shields, a combination of safety glasses and face shield, or a combination of goggles and face shield shall be worn when working with chemicals.

5. Only protective goggles, face shields and helmets approved for welding shall be worn when welding is carried out.

   i. Suitable protectors shall be used when employees are exposed to hazards from flying particles, molten metal, acids or caustic liquids,

chemical liquids, gases, or vapors, bioaerosols, or potentially injurious light radiation.

ii. Wearers of contact lenses must also wear appropriate eye and face protection devices in a hazardous environment.
iii. Side protectors shall be used when there is a hazard from flying objects.
iv. Goggles and face shields shall be used when there is a hazard from chemical splash.
v. Face shields shall only be worn over primary eye protection (safety glasses or goggles).
vi. Protectors shall be marked to identify the manufacturer.
vii. Equipment fitted with appropriate filter lenses shall be used to protect against light radiation. Tinted and shaded lenses are not filter lenses unless they are marked or identified as such. Refer to “Eye and Face Protection Selection Chart”
viii. Emergency eyewash stations and showers are to be maintained in accordance with Appendix A “Emergency Eyewash and Shower Procedures”

8.4 Selection:

Eye and Face Protection Selection Chart		
Source	**Assessment of Hazard**	**Protection**
IMPACT - Chipping, grinding, machining, drilling, chiseling, riveting, sanding, etc.	Flying fragments, objects, large chips, particles, sand, dirt, etc.	Spectacles with side protection, goggles, face shields. For severe exposure, use face shield over primary eye protection.
CHEMICALS - Acids and chemical handling	Splash Irritating mists	Goggles, eyecup and cover types. For severe exposure, use face shield over primary eye protection Special-purpose goggles
DUST - Woodworking, buffing, general dusty conditions	Nuisance dust	Goggles, eyecup and cover types.
LIGHT and/or RADIATION Welding - electric arc	Optical radiation	Welding helmets or welding shields. Typical shades: 10-14
Welding - gas	Optical radiation	Welding goggles or welding face shield. Typical shades: gas welding 4-8, cutting 3-6, brazing 3-4
Cutting, torch brazing, torch soldering	Optical radiation	Spectacles or welding face shield. Typical shades: 1.5-3

Glare	Poor vision	Spectacles with shaded or special-purpose lenses, as suitable.

8.5 Prescription Safety Eyewear

The Occupational Health and Safety Act and regulations require that each affected employee who wears prescription lenses while engaged in operations that involve eye hazards shall wear eye protection that incorporates the prescription in its design. Worker shall wear eye protection that can be worn over the prescription lenses (goggles, faceshields) without disturbing the proper position of the prescription lenses or the protective lenses. Personnel required to wear prescription glasses and protective eyewear must notify their supervisor who will consult with OHS regarding the most appropriate means of protection.

9.0 HAND PROTECTION

Suitable gloves shall be worn when hazards from chemicals, cuts, lacerations, abrasions, punctures, burns, biologicals, vibration and harmful temperature extremes are present. Glove selection shall be based on performance characteristics of the gloves, conditions, durations of use, and hazards present. One type of glove will not work in all situations.

9.1 Chemical Hazards:

Chemical resistant gloves protect hands from exposure to harmful chemicals that can cause significant complications to the dermis or skin and can be absorbed into the body through the skin or through an open wound. This can extremely harmful to a worker’s health.

9.2 Selection:

The first consideration in the selection of gloves for use against chemicals is to determine, if possible, the exact nature of the substances to be encountered. Read instructions and warnings on chemical container labels and MSDS’s before working with any chemical. Recommended glove types are often listed in the section for personal protective equipment.

Chemicals eventually permeate all glove materials. However, they can be used safely for limited time periods, if specific use and other characteristics (i.e., thickness and permeation rate and time) are known. OHS can assist in determining the specific type of glove material that should be worn for a particular chemical.

Skin contact is a potential source of exposure to toxic materials; it is important that the proper steps be taken to prevent such contact. Most accidents involving hands and arms can be classified under four main hazard categories: chemicals, abrasions, cutting, and heat. There are gloves available that can protect workers from any of these individual hazards or any combination thereof.
Gloves should be replaced periodically, depending on frequency of use and permeability to the substance(s) handled. Gloves overtly contaminated should be rinsed and then carefully removed after use.

Gloves should also be worn whenever it is necessary to handle rough or sharp-edged objects, and very hot or very cold materials. The type of glove materials to be used in these situations includes leather, welder's gloves, aluminum-backed gloves, and other types of insulated glove materials.

Careful attention must be given to protecting your hands when working with tools and machinery. Power tools and machinery must have guards installed or incorporated into their design that prevent the hands from contacting the point of operation, power train, or other moving parts. To protect hands from injury due to contact with moving parts, it is important to:

- Ensure that guards are always in place and used.
- Always lock-out machines or tools and disconnect the power before making repairs.
- Treat a machine without a guard as inoperative; and
- Do not wear gloves around moving machinery, such as drill presses, mills, lathes, and grinders.

It should be noted that due to the increase in latex allergies, latex gloves, natural rubber or natural rubber blends should not be used. Suitable substitutes are available such as vinyl, nitrile, butyl, or neoprene is suitable. Check the manufacturer's instructions to ensure the appropriate level of protection is selected. See Appendix A for more information on latex allergies.

9.3 Fit:
Ensure that you have the proper size glove. One size does not fit all. Try different sizes prior to handling the chemical or biological hazard. Consult with the manufacturer's instructions to determine the way the gloves should fit- snuggly, loosely, etc.

9.4 Donning and Doffing:

It is important to ensure that gloves are worn correctly and removed in such a way as to prevent the hand from being exposed to the contaminant on the outside.

1. Using a gloved hand, grasp the palm area of the other hand and peel off the first glove so that once removed it is inside out.

2. Hold the removed glove in the gloved hand. Slide fingers of ungloved hand under glove at the wrist and peel off the second glove over the first glove.

3. One glove should be contained inside the other, and both should be turned inside out.

4. Discard the gloves in the appropriate container.
5. If your hands get contaminated during the glove removal, immediately wash your hands or use hand sanitizer.

9.5 Degradation

Degradation due to contact with chemicals causes the glove material to soften, swell, shrink, stretch, dissolve, or to become hard and brittle.

9.6 Permeation

Permeation is the result of molecular diffusion of a chemical through a glove material. There may be permeation without obvious signs of degradation. Permeation is quantified by breakthrough time and permeation rate.

9.7 Breakthrough Time

Breakthrough Time is the time it takes for a particular chemical to pass through a protective material.

9.8 Permeation Rate

The speed at which the chemical moves through the protective material once it has broken through.

9.9 Exposure

Glove performance is decreased significantly as chemical exposure increase by the following:

- Chemical concentration
- Direct immersion
- Pervious exposures

9.10 Temperature

Permeation test data are obtained at room temperature (20 to 25 degrees Celsius). If chemicals are being used at temperatures significantly higher or lower than this, glove performance may be affected.

9.11 Glove Thickness

Any chemical will permeate a protective material given enough time. The breakthrough time for a thicker material will be longer than that of a thinner material, providing superior chemical resistance. When choosing a chemical resistant glove manual dexterity must also be taken into account.

9.12 Manufacturer

Differences in production of materials results in variations of permeation and degradation between manufactures. Test data for a particular manufacture should be consulted prior to selecting a chemical resistant glove.

9.13 Chemical Purity

Permeation testing is conducted using pure chemicals. Mixtures of chemicals will significantly alter the permeation rate and degradation of a material.

9.14 Physical Resistance

Chemical penetration through a tear or hole in a glove will cause a much greater chemical exposure potential than caused by molecular permeation.

The following is a guide to the most common types of protective work gloves and the types of hazards they can guard against:

9.15 Disposable Gloves: Disposable gloves, which are usually made of light-weight plastic, poly-vinyl chloride or latex, can help guard against mild irritants.

9.16 Fabric Gloves: Made of cotton or fabric blends and are generally used to improve grip when handling slippery objects. They also help insulate hands from mild heat or cold.

9.17 Leather Gloves: These gloves are used to guard against injuries from sparks or scraping against rough surfaces. They are also used in combination with an insulated liner when working with electricity.

9.18 Metal Mesh Gloves: These gloves are used to protect hands from accidental cuts and scratches. They are used most commonly by persons working with cutting tools or other sharp instruments.

9.19 Aluminized Gloves: Gloves made of aluminized fabric are designed to insulate hands from intense heat. These gloves are most commonly used by persons working with molten materials.

9.20 Chemical Resistance Gloves: These gloves may be made of rubber, neoprene, polyvinyl alcohol or vinyl, etc. The gloves protect hands from corrosives, oils, and solvents. The following table is provided as a guide to the different types of glove materials and the chemicals they can be used against. When selecting chemical resistance gloves, be sure to consult the manufacturers' recommendations, especially if the gloved hand will be immersed in the chemical.

9.21 Chemical Glove Chart

Type	Advantages	Disadvantages	Use Against
Natural rubber	Low cost, good physical properties, dexterity	Poor vs. oils, greases, organics. Frequently imported; may be poor quality	Bases, alcohols, dilute water solutions; fair vs. aldehydes, ketones.
Natural rubber blends	Low cost, dexterity, better chemical resistance than	Physical properties frequently inferior to natural rubber	Same as natural rubber

	natural rubber vs. some chemicals		
Polyvinyl chloride (PVC)	Low cost, very good physical properties, medium cost, medium chemical resistance	Plasticizers can be stripped; frequently imported may be poor quality	Strong acids and bases, salts, other water solutions, alcohols
Neoprene	Medium cost, medium chemical resistance, medium physical properties	NA	Oxidizing acids, anilines, phenol, glycol ethers
Nitrile	Low cost, excellent physical properties, dexterity	Poor vs. benzene, methylene chloride, trichloroethylene, many ketones	Oils, greases, aliphatic chemicals, xylene, perchloroethylene, trichloroethane; fair vs. toluene
Butyl	Speciality glove, polar organics	Expensive, poor vs. hydrocarbons, chlorinated solvents	Glycol ethers, ketones, esters
Polyvinyl alcohol (PVA)	Specialty glove, resists a very broad range of organics, good physical properties	Very expensive, water sensitive, poor vs. light alcohols	Aliphatics, aromatics, chlorinated solvents, ketones (except acetone), esters, ethers
Fluoro-elastomer (Viton) ™ *	Specialty glove, organic solvents	Extremely expensive, poor physical properties, poor vs. some ketones, esters, amines	Aromatics, chlorinated solvents, also aliphatics and alcohols
Norfoil (Silver Shield)	Excellent chemical resistance	Poor fit, easily punctures, poor grip, stiff	Use for Hazmat work

*Trademark of DuPont Dow Elastomer

9.22 Glove Type and Chemical Use

***Limited service**	**VG= Very Good**	**G= Good**	**F=Fair**	**P=Poor (not recommended)**

Chemical	**Neoprene**	**Butyl**	**Nitrile Latex**
*Acetaldehyde	VG	VG	G

Acetic acid	VG	VG	VG
*Acetone	G	VG	P
Ammonium hydroxide	VG	VG	VG
*Amyl acetate	F	F	P
Aniline	G	F	P
*Benzaldehyde	F	G	G
*Benzene	F	F	P
Butyl acetate	G	F	P
Butyl alcohol	VG	VG	VG
Chemical	**Neoprene**	**Butyl**	**Nitrile**
Carbon disulfide	F	F	F
*Carbon tetrachloride	F	P	G
Castor oil	F	F	VG
*Chlorobenzene	F	F	P
*Chloroform	G	P	P
Chloronaphthalene	F	F	F
Chromic Acid (50%)	F	F	F
Citric acid (10%)	VG	VG	VG
Cyclohexanol	G	G	VG
*Dibutyl phthalate	G	G	G
Diesel fuel	G	P	VG
Diisobutyl ketone	P	G	P
Dimethylformamide	F	G	G
Dioctyl phthalate	G	F	VG
Dioxane	VG	G	G
Epoxy resins, dry	VG	VG	VG
*Ethyl acetate	G	G	F
Ethyl alcohol	VG	VG	VG
Ethyl ether	VG	VG	G
*Ethylene dichloride	F	F	P
Ethylene glycol	VG	VG	VG
Formaldehyde	VG	VG	VG
Formic acid	VG	VG	VG
Freon 11	G	F	G
Freon 12	G	F	G

Freon 21	G	F	G
Freon 22	G	F	G
*Furfural	G	G	G
Gasoline, leaded	G	F	VG
Gasoline, unleaded	G	F	VG
Glycerine	VG	VG	VG
Hexane	F	P	G
Hydrochloric acid	VG	G	G
Hydrofluoric acid (48%)	VG	G	G
Chemical	**Neoprene**	**Butyl**	**Nitrile**
Hydrogen peroxide (30%)	G	G	G
Hydroquinone	G	G	F
Isooctane	F	P	VG
Isopropyl alcohol	VG	VG	VG
Kerosene	VG	F	VG
Ketones	G	VG	P
Lacquer thinners	G	F	P
Lactic acid (85%)	VG	VG	VG
Lauric acid (36%)	VG	VG	VG
Lineoleic acid	VG	F	G
Linseed oil	VG	F	VG
Maleic acid	VG	VG	VG
Methyl alcohol	VG	VG	VG
Methylamine	F	G	G
Methyl bromide	G	G	F
*Methyl chloride	P	P	P
*Methyl ethyl ketone	G	VG	P
*Methyl isobutyl ketone	F	VG	P
Methyl methacrylate	G	VG	F
Monoethanolamine	VG	VG	VG
Morpholine	VG	VG	G
Naphthalene	G	F	G
Naphthas, aliphatic	VG	F	VG
Naphthas, aromatic	G	P	G
*Nitric acid	G	F	F

Nitromethane (95.5%)	F	F	F
Nitropropane (95.5%)	F	F	F
Octyl alcohol	VG	VG	VG
Oleic acid	VG	G	VG
Oxalic acid	VG	VG	VG
Palmitic acid	VG	VG	VG
Perchloric acid (60%)	VG	G	G
Perchloroethylene	F	P	G
Petroleum distillates (naphtha)	G	P	VG
Chemical	**Neoprene**	**Butyl**	**Nitrile**
Phenol	VG	G	F
Phosphoric acid	VG	VG	VG
Potassium hydroxide	VG	VG	VG
Propyl acetate	G	G	F
Propyl alcohol	VG	VG	VG
Propyl alcohol (iso)	VG	VG	VG
Sodium hydroxide	VG	VG	VG
Styrene	P	P	F
Stryene (100%)	P	P	F
Sulfuric acid	G	G	G
Tannic acid (65%)	VG	VG	VG
Tetrahydrofuran	P	F	F
*Toluene	F	P	F
Toluene diisocyanate	F	G	F
*Trichloroethylene	F	P	G
Triethanolamine	VG	G	VG
Tung oil	VG	F	VG
Turpentine	G	F	VG
*Xylene	P	P	F

***Limited service**	**VG= Very Good**	**G= Good**	**F=Fair**	**P=Poor (not recommended)**

9.23 Physical Hazards:

Physical hazards to the hand include abrasions, cuts, tears and punctures from flying debris, sharp edges and repetitive handling, extreme temperatures, vibration and electricity.

Material	Usage	Task/ Job
Leather	Protects against sparks, moderate heat, blows, chips, rough objects, vibration	Construction, maintenance, use of heavy equipment and vibrating tools, welding, when exposed to moderate heat
Rubberized	Provide protection against electricity, oils, solvents and other chemicals.	Cleaning, or working with oils, when exposed to electricity (rubber-insulated with leather outer, appropriate for the voltage as per the CSA Standard)
Aluminized	Provide reflective and insulating protection against heat, and require an insert made of synthetic materials to protect against heat and cold	Welding, furnace or foundry work, working with extreme temperatures
Kevlar	Provide protection against cuts and abrasions, heat and cold	When working with sharp edged metal material, knives
Synthetic	Various types offer protection against heat, cold cut and abrasion, and some diluted acids. Does not protect against alkalis or solvents	Material handling, cleaning, working in near low to moderate heat and cold
Cotton	Protect against dirt, slivers, chafing, and abrasions.	Not suitable for use with chemicals or when handling rough or sharp objects
Coated Fabric	Protect against dirt, slivers, chafing, and abrasions and offers slip resistant qualities. To protect against chemical exposure, review the product information to determine the glove's effectiveness against the specific chemicals being used.	Manual material handling, handling bricks, wire and some chemicals

9.24 Fit:
Gloves should have an appropriate fit in order to ensure that workers receive maximum protection and that the gloves do not create a hazard, for example wearing loose fitting gloves near moving equipment, or if you require more snug fitting gloves for dexterous type work in order to ensure a firm grabs on materials. Check the manufacturer's instructions prior to selecting gloves to ensure that you obtain the proper fit- loose fitting, snuggle fit, etc.

9.25 Care:
The care of each type of glove will vary depending on the material and the use. All gloves should be kept as clean as possible, and where possible wash regularly and stored in a cool, dry, clean place. Gloves should be inspected regularly to ensure that they are not damaged, torn or worn. Check areas where the gloves come into regular contact with hazards and where wear would be most likely. Check seams and stitching, coatings and lining. If gloves are damaged or show signs of wear, replace them immediately.

10.0 BODY PROTECTION

Garments worn to protect the body vary depending on the type of work being performed and the level of exposure to a chemical or biological agent. This can include Tyvex suits or coveralls and lab coats.

10.1 Tyvex Suits
Tyvek suits and coveralls provide full body protection from dirt, chemicals, paint, solvents, oil, and grease. Tyvek garments are not suitable for all situations or environments. Consult the manufacturer's instructions prior to choosing this PPE. Consider the permeation, degradation and penetration of the material with respect to the chemical(s) being used.

Tyvek suits and coveralls can be worn over top of a worker's regular clothing and disposed of following the task or job. Tyvek suits and coverall should not be used if they are torn or will allow the body to be exposed.

10.2 Fit:
Select the appropriate size to ensure a proper fit. This will provide more adequate protection and comfort when wearing the garment.

10.3 Donning and Doffing
It is important that the removal and disposal of the single-use body protection garment be done properly to prevent contamination to the worker.

1. The suit should be removed in a contamination free area or in a designated area.
2. If other PPE is being worn with the, such as gloves, boots or masks, should be wiped to prevent any contaminants to be thrown up while removing the suit.
3. With gloves still on, begin rolling the hood back, taking care not to let the outside of the suit touch the head.

4. Unzip the suit and begin rolling it outward, rolling it down over the shoulders.
5. Place both hands behind the back and pull down each arm until completely removed.

6. Sit down and remove each shoe and roll the suit down, taking care not to contaminate clothing.

7. Roll over the knees and remove completely.
8. Discard the suit in the bag provided and remove gloves.

9. Hold the non-contaminated inner surface of the suit while discarding the suit.

Note: Typically, the removal of a protective body garment can lead to contaminating the area where it was removed, so it will require a proper clean up.

10.4 Lab Coats:
Lab coats, worn primarily in lab environments, are used to provide minimal protect the skin and clothing from contaminants. It is important to ensure that the appropriate type be worn to protect against the hazards that workers will be exposed to, including flammability, toxic substances, chemical splashes and biological exposure.

10.5 Lab Coat Selection

Type	Hazard	Limitations
Nomex	Resistant to most solvents, acids and bases	Chlorine bleach
Tyvek lab coat	Protects against particulates and fine particles	
Tychem lab coat	Tyvex lab coat with chemically resistant coating	May not provide adequate protection against flammability

Where there is a high risk of chemical splashing, a chemical-resistant aprons and chemically-resistant sleeves can be paired with a lab coat. Aprons made of rubber, neoprene or PVC (depending on the compatibility).

10.6 Fit:
Select a lab coat that fits your body and should cover the knees. The body should not be oversized and the sleeves should not be too long. The lab coat should be buttoned up and the sleeves rolled down to ensure maximum protection.

10.7 Care:
Lab coats should be regularly laundered to remove dirt, chemical and biological contaminants as appropriate for the circumstance. Clean lab coats should be separated from the in-use lab storage.

11.0 High Visibility Safety Apparel

High visibility safety apparel allows the worker to be seen while performing their tasks. This is especially important when workers are working in high traffic areas, in close proximity to motorized vehicles, in low light, dark or lower visibility conditions or where the workers' body could be obscured.

Requirements for high-visibility safety clothing are found in the CSA Standard Z96-09 (R2014) "High Visibility Safety Apparel".
In order to determine whether high visibility safety apparel is necessary, the CSA Standard recommends that a risk assessment be conducted to determine the right type of apparel for the task.

11.1 Selection:

11.1.1 Reflective and Fluorescent Materials

Fluorescent materials are only suitable where natural light is available and will allow the material to appear brighter than the same colored non-fluorescent material. Especially in low-light conditions such as cloud cover, dusk, dawn, etc. They also provide greater contrast against most backgrounds.

Retroreflective material returns or reflects light in the direction of the light source. This material is most effective under low-light level conditions. Although they can still reflect during daylight, there is little difference between the light reflected from the garment and the light in the surrounding environment. Rendering them relatively ineffective during sunny daytime conditions.

Condition	Type
Daylight	Bright colors and fluorescent colors
Low Light	Fluorescent colors combined with retroreflective material
Dark/ Worksites	Retroreflective material

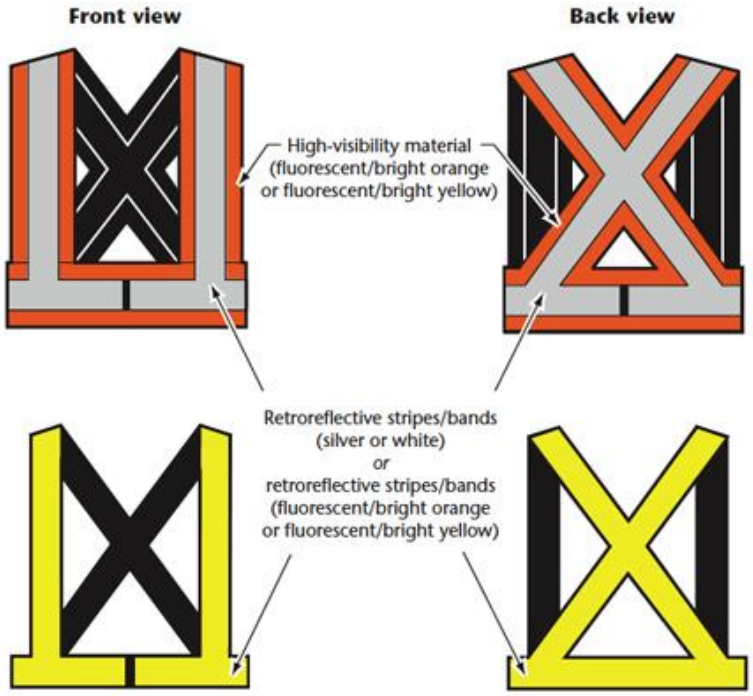
When selecting the appropriate high visibility garment, the goal is to product maximum visibility in order to mitigate any potential risk to the workers. The more body coverage a worker has, and the brighter the garment, the more visible they will be. Choosing garments that have stripes of color that contrast with the background material provide good visibility, and the positioning of these stripes, such as on the arms and legs, provide visual cues as to the motion of the worker. Other considerations when selecting the appropriate garment are flame resistance, thermal performance, water resistance, durability, comfort, tear-away features, breathability and flexibility. These risk factors should be identified and assessed prior to selecting a suitable garment.

11.1.2 Classes:

The CSA standard Z96-09 (R2014) High-visibility Safety Apparel sets out levels of retroreflective performance, the colors and luminosity of background materials and how much of the body must be covered by the high visibility components. CSA lists 3 classes of garments that are based on the body coverage provided. Each class covers the torso (waist to neck) and/ or limbs, according to the minimum body coverage areas specified in each class.

Class 1:

Class 1 provides the lowest recognized coverage and good visibility. It consists of a basic harness or stripes/ bands over the shoulders, and encircling waist. Center portion of the front torso band between the 2 vertical bands is optional.

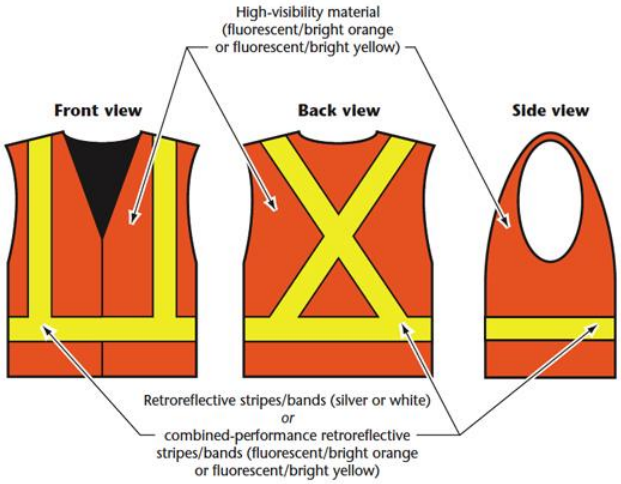


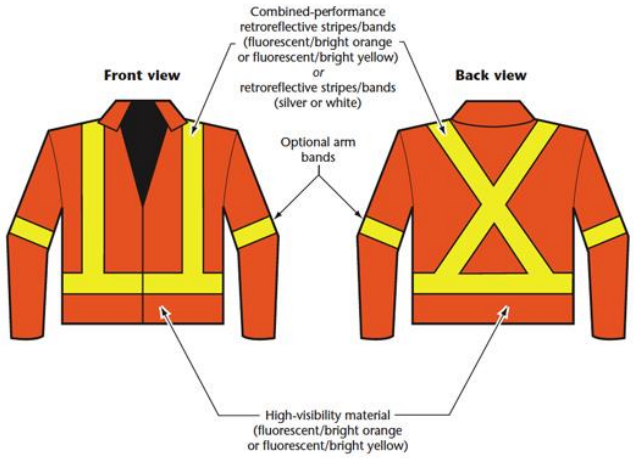
Class 1 apparel may be used where a worker's undivided attention is focused on oncoming traffic, where workers are on foot but separated from traffic via barriers or where traffic is moving slowly (less than 40km/h).

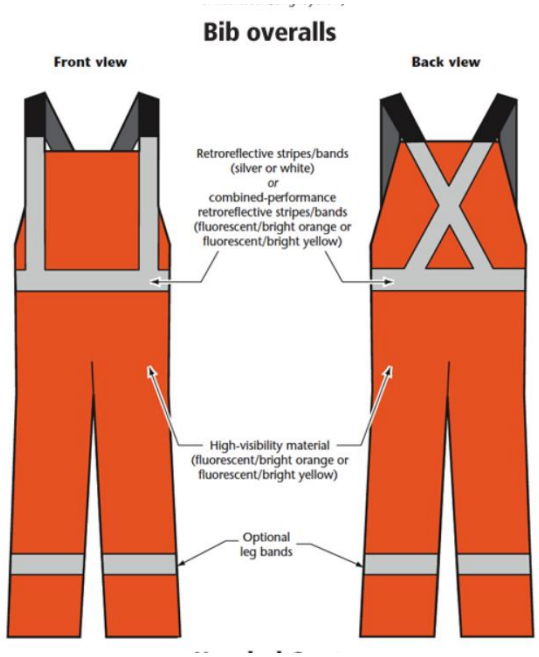
Class 1 apparel is suited for activities where workers use class 1 apparel are: workers working in parking operations, retrieving shopping carts in parking areas, warehousing (particularly where motorize equipment is used such as forklifts), sidewalk maintenance, shipping and receiving.

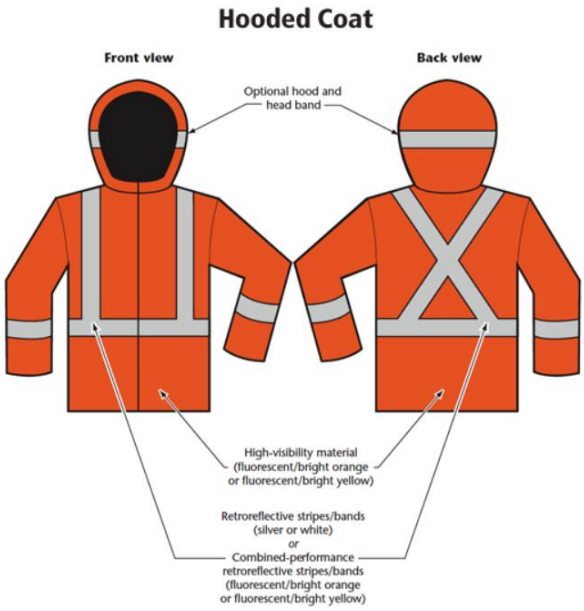
Class 2:

Class 2 provides moderate body coverage and superior visibility. The apparel has full coverage of the upper torso (front, back, sides and over the shoulders. Stripes/ bands are composed of retroreflective or combined performance materials.


High-visibility material
(fluorescent/bright orange
or fluorescent/bright yellow)
Front view
Back view
Side view
Retroreflective stripes/bands (silver or white)
or
combined-performance retroreflective
stripes/bands (fluorescent/bright orange
or fluorescent/bright yellow)


Combined-performance
retroreflective stripes/bands
(fluorescent/bright orange
or fluorescent/bright yellow)
or
retroreflective stripes/bands
(silver or white)
Front view
Back view
Optional arm
bands
High-visibility material
(fluorescent/bright orange
or fluorescent/bright yellow)


Bib overalls
Front view
Back view
Retroreflective stripes/bands
(silver or white)
or
combined-performance
retroreflective stripes/bands
(fluorescent/bright orange or
fluorescent/bright yellow)
High-visibility material
(fluorescent/bright orange or
fluorescent/bright yellow)
Optional
leg bands

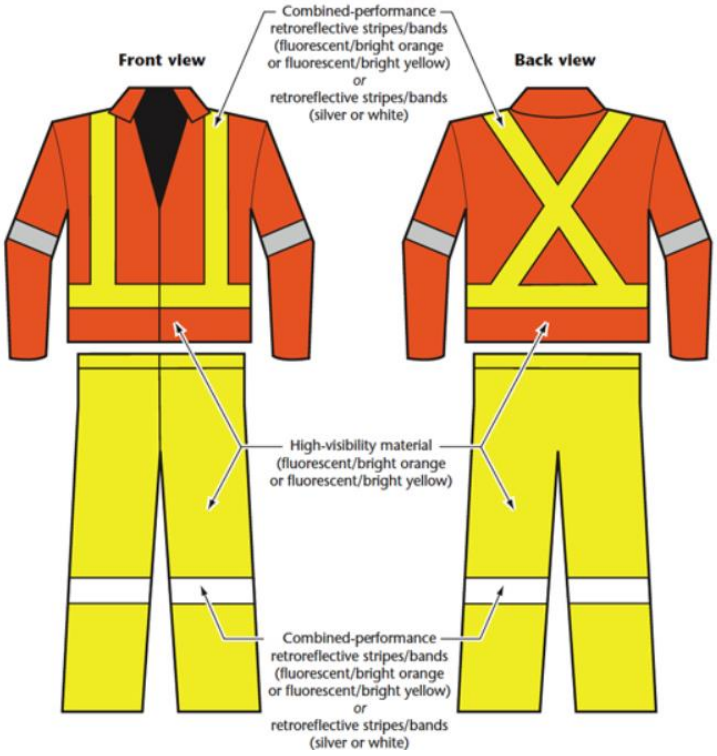


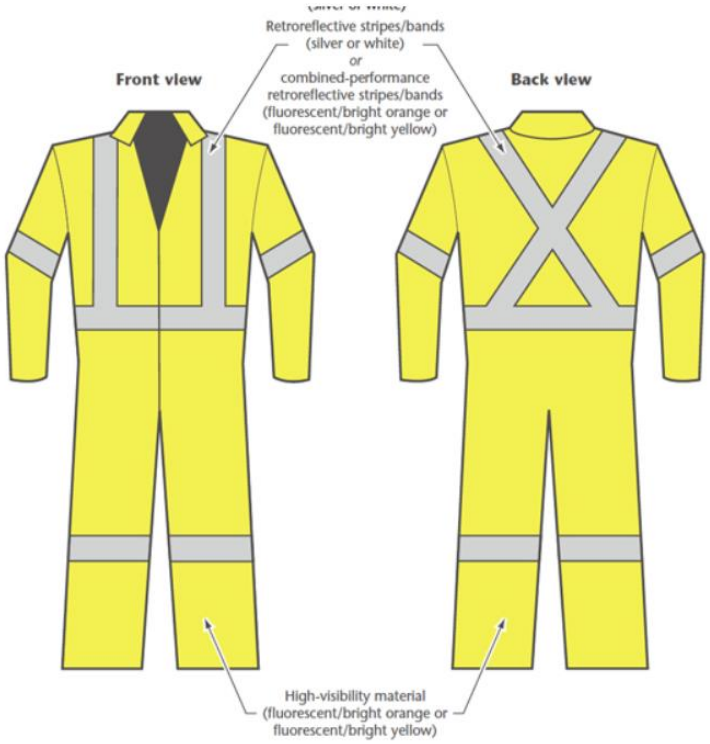
Class 2 apparel should be worn where workers are working near vehicles or equipment moving between 40-80 km/h, where greater visibility is required such as in low light conditions or inclement weather, where backgrounds are complex, where workers are diverting attention from approaching vehicle traffic or when working in close proximity to traffic flow.

Class 2 apparel is suited for activities such as, road construction, crossing guards, high volume parking lot attendants, emergency responders in flagging operations, law enforcement, and accident site investigators.

Class 3:

Class 3 is the highest level of visibility apparel that is worn during low or poor light conditions or where workers need to be seen at great distances. Class 3 meets the same requirements as Class 2 with the addition of combined performance stripes/ bands or a combination of retroreflective bands and background materials around both arms and legs.


Front view
Back view
Combined-performance retroreflective stripes/bands (fluorescent/bright orange or fluorescent/bright yellow) or retroreflective stripes/bands (silver or white)
High-visibility material (fluorescent/bright orange or fluorescent/bright yellow)
Combined-performance retroreflective stripes/bands (fluorescent/bright orange or fluorescent/bright yellow) or retroreflective stripes/bands (silver or white)


Front view
Back view
Retroreflective stripes/bands (silver or white) or combined-performance retroreflective stripes/bands (fluorescent/bright orange or fluorescent/bright yellow)
High-visibility material (fluorescent/bright orange or fluorescent/bright yellow)

Class 3 apparel is used where workers are in close proximity to vehicle speeds in excess of 80km/h, high volume traffic and unmonitored equipment movement, complex backgrounds, where workers must be seen from a distance (minimum 390 m) activities taking place in icy or snowy conditions, and in low light or at night.

Class 3 apparel is suitable for road construction (particularly in inclement weather and complex lane shifts), utility workers, high volume parking lot workers, emergency responders in flagging operations, law enforcement, and flaggers in night operations or high congestion areas.

11.2 Fit:

For safety and best performance, the garments should be fitted to the person. Consideration must be given to the thickness of clothing that will be worn under the garment as well as how it should be worn, i.e. done up. It should sit comfortably on the body without shifting while work is being performed.
The garments should be comfortable for the worker, particularly the areas where it comes into contact with the worker's skin, and should be light weight and breathable. While the garment is being worn, no additional clothing or equipment should cover the high-visibility material.

Workers should be instructed on when to use high visibility apparel, fitting instructions including how to put the apparel on and how to wear it appropriately, its limitations, how to store and maintain it, apparel inspection for wear and tear, and how to decontaminate and wash the apparel.

12.0 LEG PROTECTION

In order to protect the legs from injury, protective clothing should be worn. When workers' legs are vulnerable to injury to due to cuts or contact with a chainsaw, leather leg chaps with sewn-in ballistic nylon pads should be worn. Leg chaps or cut-resistant pants are required to prevent injury.

Protective chaps provide protection against chainsaw teeth by jamming the chain against it and forcing the saw to stop.

12.1 Fit:

Chaps should be close fitting and extend from the waist to the top of the work boot in order to provide adequate coverage and protection. Leg chap straps should be kept as tight as possible to prevent them from being ripped away from the leg.

12.2 Care:

For minor cuts or abrasions, chaps may be repaired, however, if chaps make contact with a chainsaw, they cannot be repaired, the must be replaced as they will no longer provide the same level of protection.

13.0 HEARING PROTECTION

The College will take measures to protect workers from noise exposure when workers are exposed to the equivalent sound level of **85 dBA**, as per sec. 139 of The Industrial regulation 851. Where a supervisor or worker suspects that they are being exposed to more than 85dBA over the course of their 8-hr day/ 5 days per week, noise testing will be performed to determine the exposure level.

The College shall adopt CSA Standard Z94.2-14 "Hearing Protectors" and ACGIH (American Conference of Governmental Industrial Hygienists) exposure limits; where the worker is exposed to the hazard of hearing injury.

13.1 Hearing Conservation Program:

Where workers are required to wear hearing protection, they will be required to take audiometric testing as part of the College's Hearing Conservation program. Workers will be required to have their hearing tested every 2 years or more frequently if advised to do so by a physician or by Occupational Health and Safety. Personal medical records will be confidentially maintained by Human Resources. Refer to the Noise Conservation Program for more details.

13.2 REQUIREMENTS:

a) Hearing protection is available in two forms, earplugs and earmuffs.

b) Although CSA does not currently place their logo on hearing protection, CSA Standard Z94.2-14 does assist in the selection of the appropriate hearing protection for the job.

c) Earplugs or earmuffs shall be chosen for maximum sound attenuation. Typical minimum attenuation on the NR (noise reduction) scale shall be in the order of 25 dB (decibel) or higher.

d) Proper fit shall be ensured to attain maximum sound reduction.

e) For use with head protection, hearing protectors shall either be of the earplug variety or earmuffs with soft headband or mounted to the head protection.

f) Where sound level values fall between two levels on the chart the stricter exposure level shall apply.

g) Hearing protection shall be used when the values in this table are exceeded.

h) Exposure levels shall be assessed and recorded prior to assignment of hearing protection.

i) Warning signage shall be posted on the outside face of the door to the room where the hazard is located. This signage should also include the minimum level of protection required.

13.3 Assessing Noise Levels

The College will adopt CSA Standard Z107.56-13 “Procedures for the Measurement of Occupational Noise Exposure,” which explains how to carry out measurements, what instruments are needed, and how to interpret results. If Managers receive any complaints with regards to noise levels, they are to contact OHS, who will undertake testing, as required. When testing assessing noise levels, contact Occupational Health and Safety to arrange for testing.

***** Sound level in decibels are measured on a sound level meter, conforming to the requirements of the American National Standard Specification for Sound Level Meters, S1.4 (1971) Type S2A, and set to use the A-weighted network with slow meter response. This is commonly known as continuous noise. Testing methodologies for impact noise are different that those for continuous noise and should be developed in consultation with OHS.

The measurement for noise is expressed in decibels (dB). The decibel scale is logarithmic and therefore, a small increase in decibels can represent a significant increase in noise level. There are 3 different scales for measuring noise. The scale most commonly used to measure noise exposure that may harm human hearing is the A scale. Therefore, noise levels are described on the A scale as dBA.

Duration per Day Hours	Sound Level dBA *
16	80
8	85
4	90
2	95
1	100

As per The Industrial Regulations 851, sec. 139, the College will follow the exposure limited listed in the table below. The threshold limit values for noise are as follows:

1/2	**105**
1/4	**110**
1/8	**115***

The table below shows common sounds and their respective decibel levels and can be used as a point of reference when gauging noise exposure.

Typical Noise Levels	
SOUND SOURCE	DECIBEL (dBA)
Lowest limit of hearing	0
Rustling leaf	10
Quiet farm setting	20
Whisper	20
Dripping faucet	40
Average office	50
Ordinary conversation	60
Idling car	70
Printing press	80
Heavy street traffic	90
Punch press	100
Riveter	110
Auto horn	120
Pneumatic Rock Drill	130
Jet Airplane	140
*Intermittent or "impulse" sound	

Types of Hearing Protectors

DISPOSABLE EARPLUGS	PERMANENT EARPLUGS	EARMUFFS

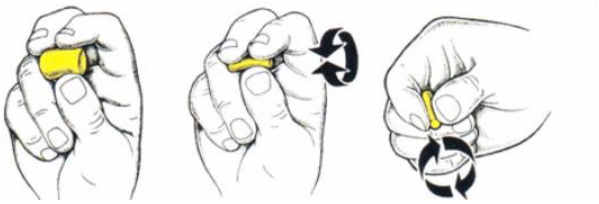
		

13.4 Selection of Hearing Protection

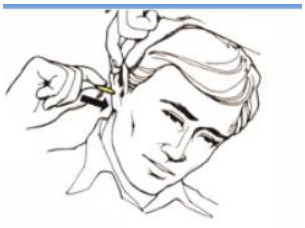
Managers should consult with Occupational Health and Safety before purchasing any forms of hearing protection to ensure that the proper type and adequate protection is selected.

Donning and Doffing of Earplugs:

1. With clean, roll the entire earplug into a small crease-free cylinder with your fingers.

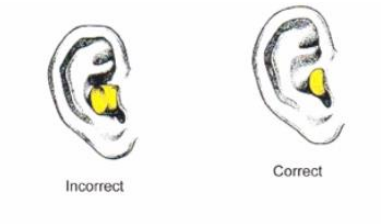


2. Reach over your heads with your free hand, and pull your ear up and back to straighten the ear canal.



3. Inset the earplug well into the ear canal, and hold for a few seconds while the earplug fully expands.

4. If properly inserted, the end of the earplug should not be visible when you view yourself in the mirror.



5. To remove the earplug, gently twist slowly while pulling it out the ear in an outward motion.

14.0 TRAINING

Any worker required to wear PPE shall receive training in the proper use and care of PPE prior to use. Periodic retraining shall be offered by OHS to both the employees and the supervisors, as needed. The training shall include, but not necessarily be limited to, the following subjects:

- When PPE is required.
- What type PPE is required
- Fitting requirements
- How to properly don, doff, adjust, and wear PPE
- The limitations of the PPE
- PPE inspection
- The proper care, maintenance, useful life and disposal of the PPE

After the training, the employees shall demonstrate that they understand the components of the PPE Program and how to use PPE properly, or they shall be retrained.

15.0 RECORD KEEPING

Written records shall be kept of the names of persons trained, the type of training provided, and the dates when training occurred. The Supervisor shall maintain their employees' training records for at least 3 years. OHS shall maintain the Hazard Assessment Certification Form for each work site evaluated for at least 3 years.

16.0 HAZARD ASSESSMENT

A hazard assessment is a formal means of determining the appropriate PPE selection based on the hazards of a job. When conducting a hazard assessment, a task is investigated and the hazards and the potential hazards associated with the task are determined. This allows selection of personal protective equipment that will protect the employee from the identified hazards.

A hazard assessment may be conducted of a single employee, of a single task, or a group of employees if all the employees perform an identical task. For example, if all employees in a group are exposed to ultraviolet radiation during one type of welding, the hazard assessment could include all of the welders conducting that task. Likewise, painters using similar types of materials or laboratory employees using similar types of chemicals could be grouped under the same assessment.

During the hazard assessment of each task, inspect the layout of the workplace and look for the following hazardous sources:

- High or low temperature that could result in burns, eye injury, ignition of equipment, heat/cold stress, frostbite, lack of coordination, etc.
- Chemical exposures, including airborne or skin contact that would have the potential for splash on the skin or eyes, or the potential to breathe vapors or mists.
- Harmful dust or particulates.
- Light radiation, e.g., welding, arc lamps, heat-treating, lasers, growth lights, etc.
- Sources of falling objects, potential for dropping objects, or rolling objects that could cause crush or pinch the feet.
- Sharp objects that may pierce the feet or cut the hands.
- Observe the layout of the workplace and the location of co-workers for the potential for collision with other personnel or objects.
- Electrical hazards.

- Any other identified potential hazard.

Where these hazards could cause injury to employees, and when engineering and administrative controls are not suitable, personal protective equipment must be selected to substantially eliminate the injury potential. Supervisors are responsible to identify hazards and complete a Certification of Hazard Assessment and a Hazard Assessment Checklist, which must be submitted to Occupational Health and Safety. Refer to following page for "Workplace Hazard Assessment Form".

Hazard Assessment Form

Location: _____ Task: _____
Performed by: _____ Date: _____

This form may be used as an aid in performing hazard assessment.
Review listed hazard classifications, identify all hazards, possible hazards and their sources.
Hazard classification listing is not intended to be complete but is provided as a guide in the assessment.

1. IMPACT HAZARD ___EXISTS ___DOES NOT EXIST	**2. CHEMICAL HAZARD** ___EXISTS ___DOES NOT EXIST	**3. DUST HAZARD** ___EXISTS ___DOES NOT EXIST
SOURCE OF HAZARD __Chipping __Grinding ___Sawing ___ Drilling___Sanding ___Riveting ___Flyin g Particles___Vibration ___Propelled Devices ___Chiseling ___Falling/Dropping Objects ___Moving equipment with stationary object ___Other: _____	**SOURCE OF HAZARD** ___Acid/Caustic ___Solvent ___Oil/Fuel___Splash/Contact ___Irrit ating Mist__Thermal ___Other:_____ _____	**SOURCE OF HAZARD** ___Buffing ___Sandblasting ___Grinding ___Other:_____
Body Part Affected ___Head ___Face/Eyes ___Hands ___Foot ___Body	**Body Part Affected** ___Head ___Face/Eyes ___Hands ___Foot ___Body	**Body Part Affected** ___Head ___Face/Eyes ___Hands ___Foot ___Body
4. PENETRATION HAZARD ___EXISTS ___DOES NOT EXIST	**5. COMPRESSION HAZARD** ___EXISTS ___DOES NOT EXIST	**6. ELECTRICAL HAZARD** ___EXISTS ___DOES NOT EXIST

SOURCE OF HAZARD ___Sharp Objects ___Metal Shaving ___Propelled Devices ___Grinding ___Other_____	**SOURCE OF HAZARD** ___Heavy Pipes ___Gas Cylinders ___Hydraulic Presses ___Drums ___Other_____ _____	**SOURCE OF HAZARD** ___Energized Switch Gear/Equipment ___Energized Lines ___Other_____
Body Part Affected ___Head ___Face/Eyes ___Hands ___Foot ___Body	**Body Part Affected** ___Head ___Face/Eyes ___Hands ___Foot ___Body	**Body Part Affected** ___Head ___Face/Eyes ___Hands ___Foot ___Body

7. THERMAL HAZARD __EXISTS ___DOES NOT EXIST	**8. LIGHT/NON-IONIZINGRADIATION HAZARD** __EXISTS ___DOES NOT EXIST
SOURCE OF HAZARD ___Welding ___Brazing ___Furnance Operation ___Flame ___Steam ___Chemical ___Extreme Weather	**SOURCE OF HAZARD** ___Heat Treating ___Brazing ___Welding ___Oxygen Cutting ___Laser ___ High Intensity Lighting
Body Part Affected ___Head ___Face/Eyes ___Hands ___Foot ___Body	**Body Part Affected** ___Head ___Face/Eyes ___Hands ___Foot ___Body

PERSONAL PROTECTIVE EQUIPMENT GUIDELINE
CERTIFICATION OF HAZARD ASSESSMENT FORM

Job Title:	Date:
Department:	Supervisor:
Location:	Analysis by:
Employee Name(s):	Signature:

Tasks	Potential Hazard	PPE Recommended

NOTES:

_____

_____

_____

_____

PERSONAL PROTECTIVE EQUIPMENT GUIDELINE
CERTIFICATION OF HAZARD ASSESSMENT
EXAMPLE

Job Title: Maintenance Employee	Date: March 5th/2003
Department: Building Services	Supervisor: Jim Doe
Location: C- 123	Analysis by:
Employee Name(s): John Doe	Signature:

Tasks	Potential Hazard	PPE Recommended
Automobile/Heavy Equipment Mechanic Work	Flying particles, petroleum solvents and wastes	Safety glasses, chemical resistant gloves
Locksmith Work	Flying particles	Safety glasses, face shield when using high speed tools
Wood Working Work (Shop)	Noise, flying particles, lifting/carrying, rough surfaced materials	Hearing protection, safety glasses, face shield for high speed tools, puncture/cut resistant gloves, safety shoes
Metal Working Work (Shop)	Noise, flying particles, lifting/carrying, rough surfaced materials, metal working chemicals	Hearing protection, safety glasses, face shield for high speed tools, puncture/cut resistant gloves, safety shoes
Painting (Shop)	Vapors, mists, solvents and chemicals, flammable	Organic vapor respirator w/paint pre-filter, chemical resistant gloves
Carpentry Work (Shop)	Solvents, glues, punctures	Chemical resistant gloves