



- The Risk is defined as a combination of the likelihood and consequences of a specified hazardous event occurring. The Risk assessment is the overall process of estimating the magnitude of risk and deciding whether or not the risk is tolerable.
- The initial status of the risk is the risk related to some activities without any preventive or protective features. The risk shall be managed throughout Elimination, Substitution, Engineering, Procedures, etc. and only at the residual part approached by protective equipment and so on.
- The risk shall be always reduced till an acceptable level As Low As Reasonably Practicable (ALARP). Both Likelihood and Severity should be always reduced ALARP.

- The European Directive 89/686/EEC lays down the requirements for CE marking of personal protective equipment (PPE). After May 1st 2004 the CE mark is compulsory for all PPE placed on the EU market.
- All PPEs shall be already CE marked.
- The directive 89/686/EEC divides all PPE into three different categories according to the degree of risk. The higher the risk the PPE needs to protect against, the more stringent the certification procedure.

- All PPE protecting against minimal risks, where the user himself/herself can assess the level of protection needed, or where the effects are gradual and can safely be identified by the user in good time, e.g. gardening gloves, sunglasses, garments and footwear designed for use in bad weather conditions. The manufacturer has to assemble the technical documentation so that this can, if necessary, be submitted to the competent authorities = self declaration by means of EC declaration of conformity.
- Category I products shall be marked CE.

- Head, face, eye protectors, shoes and gloves protecting against normal risks
- All hearing protectors
- The manufacturer submits a model for EC type-examination, whereby an approved inspection body (notified body) establishes and certifies that the PPE-model in question satisfies the relevant provisions of the directive. Category II products shall be marked CE.



What is Personal Protective Equipment :

- Are the protections from Health and Safety Hazards that cannot practically be removed from your work environment.
- P.P.E. is designed to protect many parts of your body including eyes, face, head, hands, feet and hears.

Type of P.P.E:

- Eye and face protection
- Head protection
- Hand protection
- Ear protection
- Foot protection



Eye and face protection:

- You should always use the correct eye and face protection if you work with: liquid chemicals, molten metals, hazardous gases, flying particle, etc.
- Types of eye and face protection include: safety glasses, goggles, face shields, welding helmets, full hoods.



Example of typical eye injury:

- Metallic particle or dust.

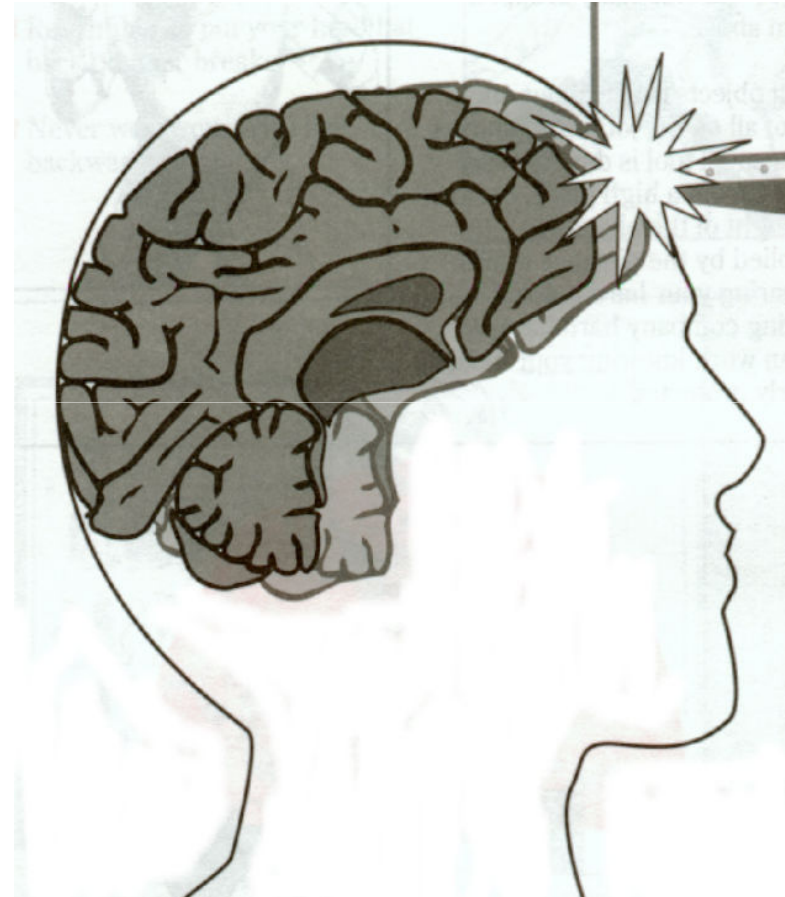


Head protection :

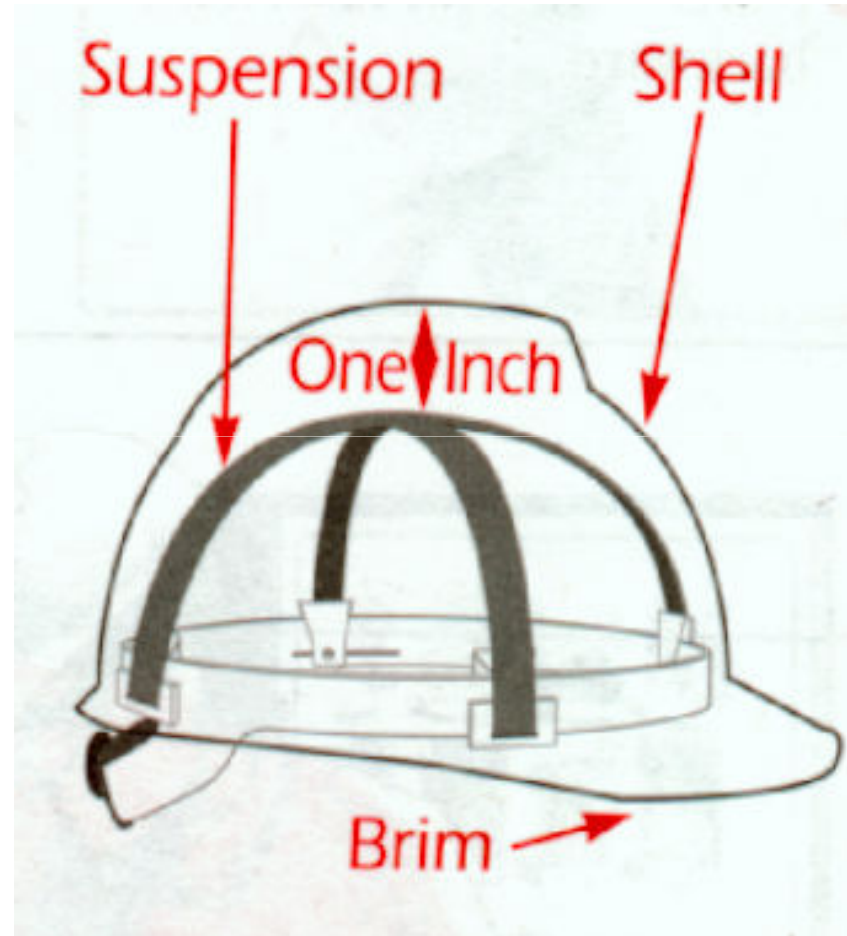
- Is required if you work where there is risk of injury from falling objects or if you work near exposed electrical conductors which could contact the head.
- The **shell of the hat is designed to absorb** some of the impact.
- The **internal head suspension** is even more critical for absorbing impact. It must be adjusted to fit the wearer and to keep the shell a minimum distance above the wearer's head.



● Dynamic of the head injury:



● Suspension impact resistance:

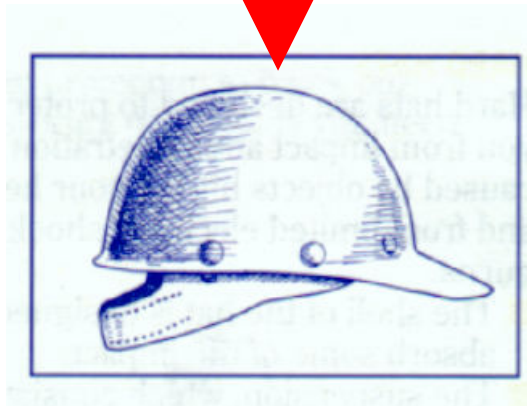
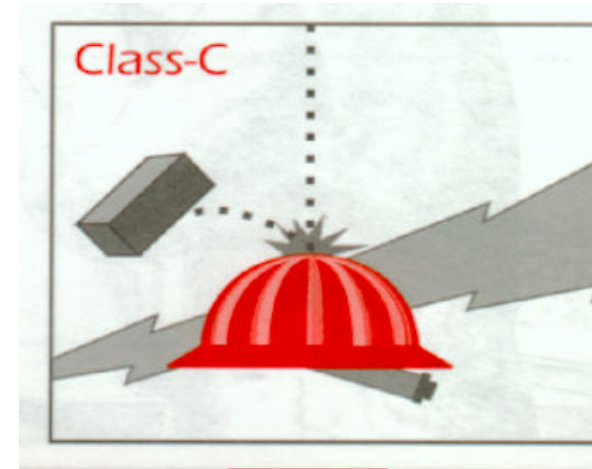
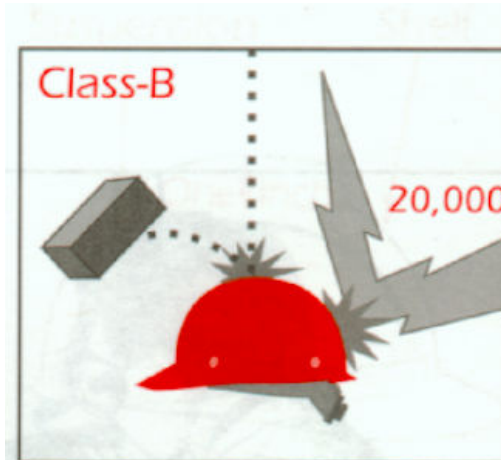
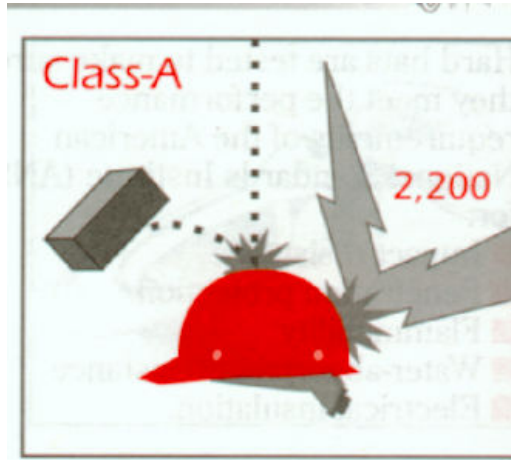


Head protection :

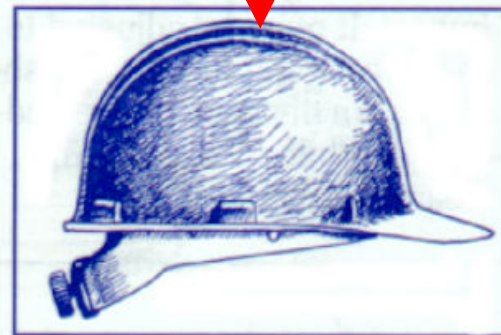
- **Hard hats are tested to withstand the impact** of a 4 kg weight dropped from 1,5 m that's about the same as a 1 kg hammer dropped from 6 m and landing on your head.



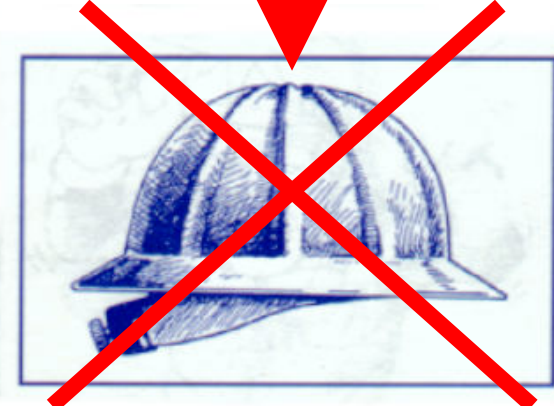
Hard Hat Classes :



FIBER GLASS



PLASTIC TYPE



ALUMINIUM

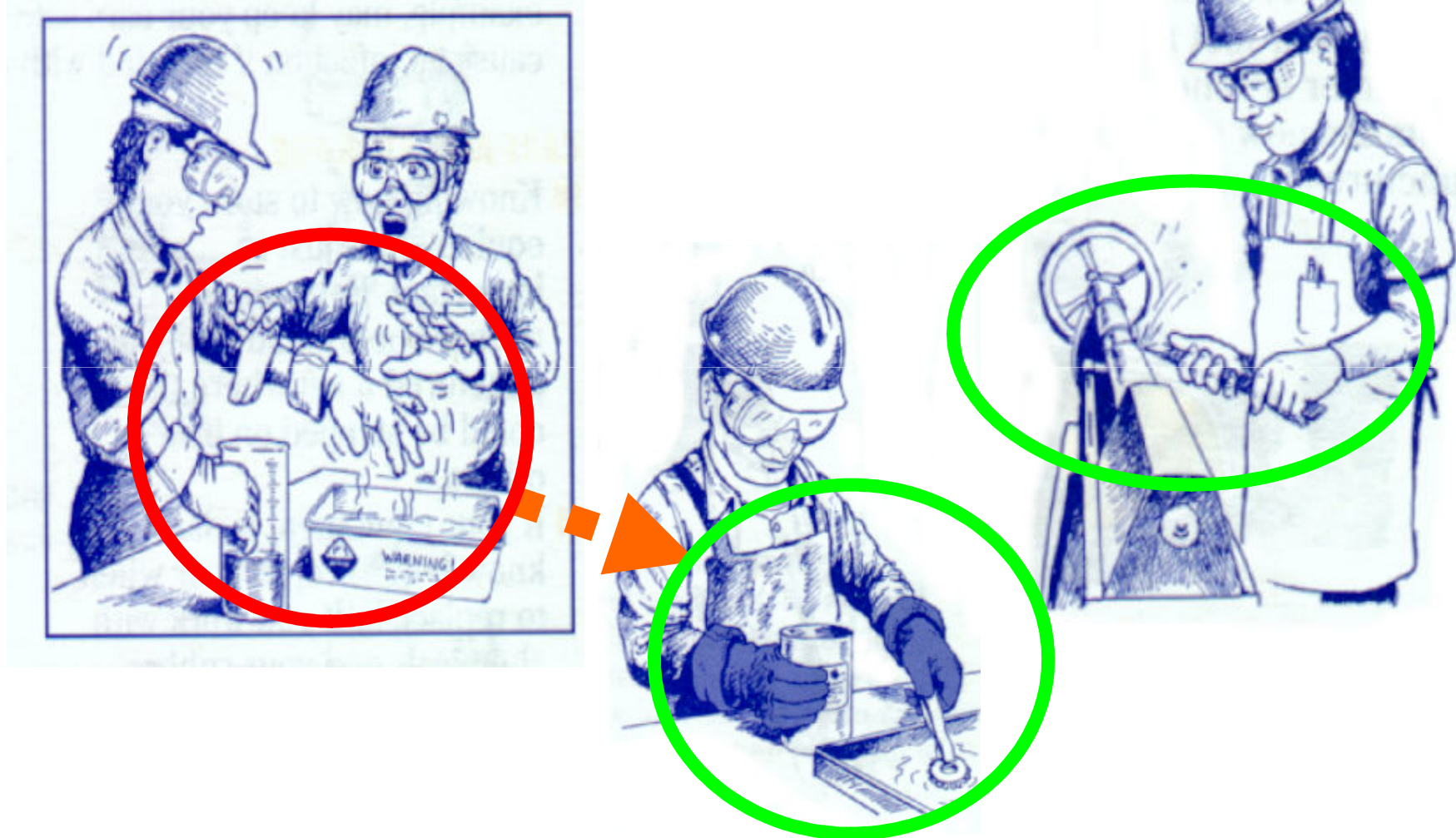
Hand protection:

- Fingers, hands and arms are injured more often than any other parts of the body.
- You must wear hand protection when you are exposed to hazards such as those from skin absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burn and harmful temperature extremes.

Hand protection:

- When working with chemicals, gloves should be taped at the top, or folded with a cuff to keep liquids from running inside your glove or onto your arm.
- **Vinyl, rubber or neoprene gloves** are sufficient when working with most chemicals.
- **Leather or cotton knitted gloves** are appropriate for handling most abrasive materials.
- **It is dangerous to wear gloves while working on moving machinery.** Moving parts can easily pull your glove, hand and arm into the machine.
- Your supervisor will instruct you on the best type of hand protection available for your job.

● Hand protection:



Foot injuries are most likely to occur:

- When heavy or sharp objects fall on your foot
- When something rolls over your foot
- When you step on an object that pierces the sole of your shoes.



Safety shoes and boots:

- Safety shoes and boots are made with a steel-reinforced box toe to protect your foot from being pierced or crushed. Many safety boots are now required to have puncture-resistant soles.



Hearing Protection:

- **Hearing loss is a common workplace injury, too often ignored because it usually happens gradually over a period of time.**

Hearing Protection

You need to protect your ears when:

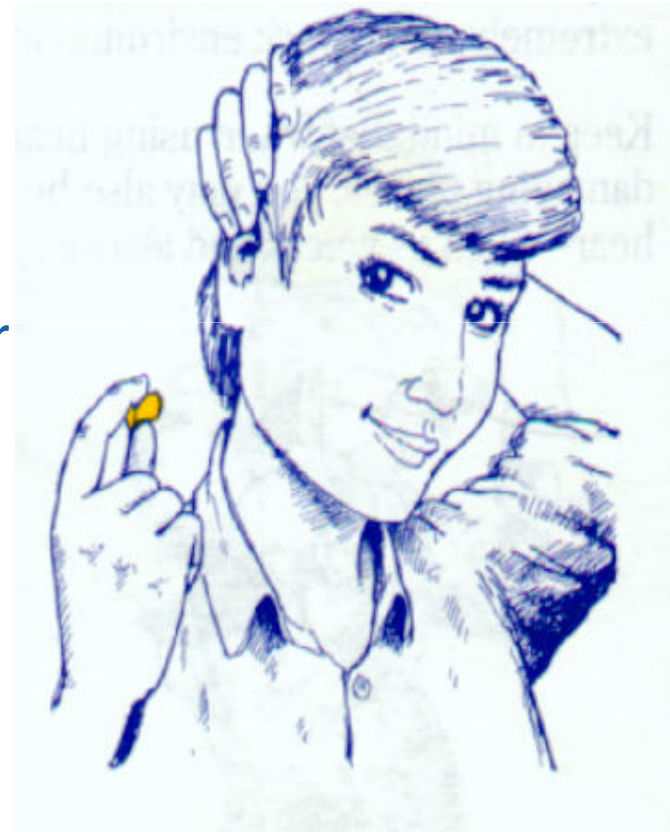
- The sound in your work area are irritating
- You need to raise your voice to be heard by someone closer than 60 cm away
- There are sign indicating hearing protection is required
- Sound levels reach 85 decibels or higher for an 8 hour time period
- There are short bursts of sound which can cause hearing damage



Ear plugs offer the most protection. Foam earplugs that fit well are the most effective.

To insert properly:

1. Roll the plug into a small diameter.
2. Place it well into the ear canal.
3. You may find it helpful to pull your ear back and up as you insert the plug.
4. After you have inserted it, hold the plug in your ear for a few second to ensure a good fit.



Ear muffs may also be used to protect your hearing.

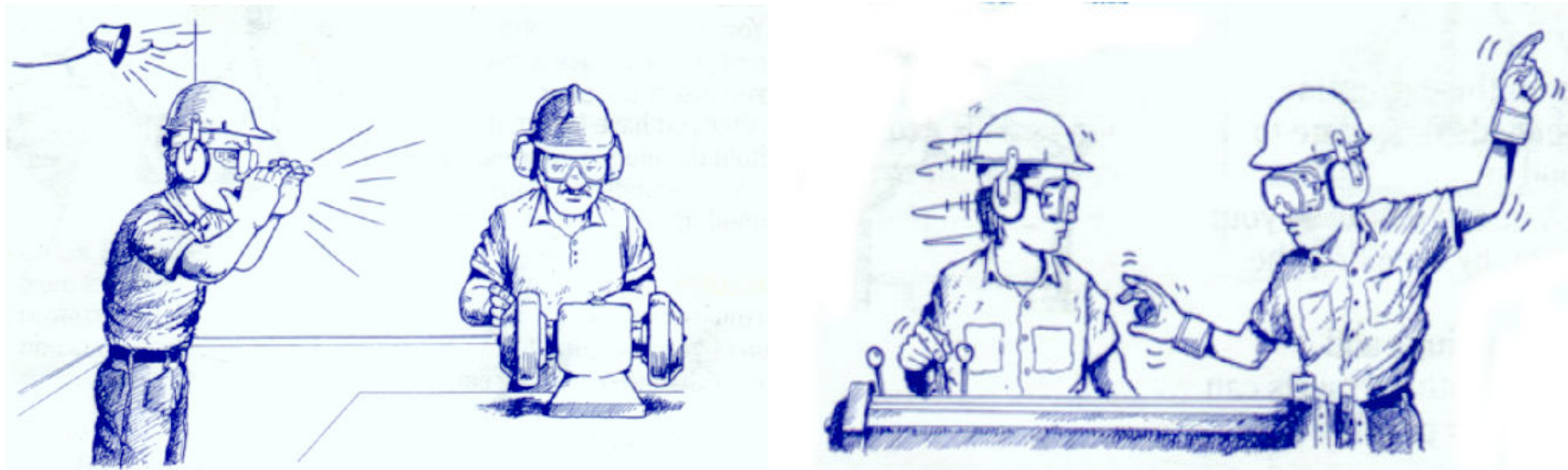
Earmuffs fit over the outside of the ear. The cups on the earmuffs should be made of sponge to give a good seal.

- Facial hair can decrease your protection by breaking the seal.
- Wearing earrings and eyeglasses with earmuffs can pose a similar problem.



Hearing protections:

- To ensure an high degree of protection, earplugs and earmuffs may have to worn together. This especially true in an extremely noisy work environment.
- Keep in mind that when using hearing protection to block out damaging noises, you may also be blocking out sounds you need to hear-such as voices and alarms.



Dressed for the occasion:

- The style of your clothing is important to your safety: avoid those that can catch in machinery, the same goes for jewellery; maintain clean your clothes and wear clothes suitable also for the season and weather you are in.

Working on site if your clothes are safe and comfortable, you know “you are dressed for the occasion !! “



Some Limitations of P.P.E:

- PPE have limitation in their protection: attention and responsibility are more effective
- PPE must fit properly to protect you. If you are not wearing the right size shoe, you may be in danger more from tripping than you would from any other hazard.
- Ear muffs with cracked, cut or missing gaskets, reduce your protection.
- Periodically, check the suspension of your hard hat. Look for loose or torn cradle straps, loose rivets, broken sewing lines or other defects.
- Replace your hard hat at least every two to five years, or after a mayor impact.



- Maintenance: your PPE must be maintained properly (cleaned, inspected and well stored).

Always Enter the jobsite wearing Personal Protective Equipment, which includes as minimum:

- **Hard Hat**
- **Safety Glasses and ear-plugs or headset**
- **Safety Shoes**
- **Safety Gloves (where needed)**
- **Proper Clothes**
- **H2S Detector and escape Mask**

**Other specific job requirements may require additional personal protection.
PPE is not required in office areas or in vehicle cabs, unless stipulated as
requirement**