SAFETY AND HYGIENE REGULATIONS

Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

PPE: SAFETY HELMET

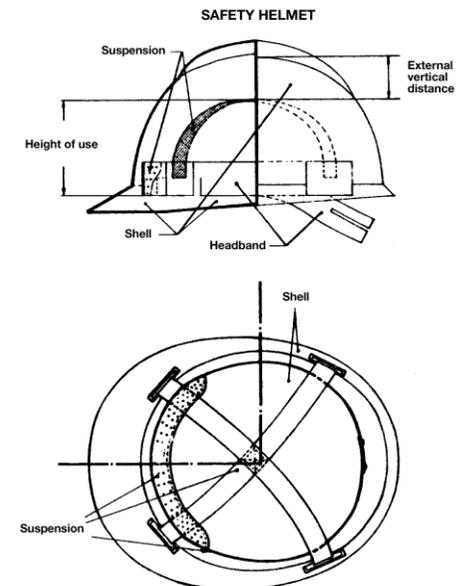| CODE	**SHR 102**	Date:	**July 2003**	Revision:	**00**	Page:	**1 of 3**

In order to reduce harmful consequences of impacts to the head, safety helmets must have various features that together meet the following conditions:

- Reduce pressure on the cranium by distributing the force of the impact over the greatest surface area possible.
- Deflect objects that fall onto the head by having a suitably rounded, smooth shape.
- Dissipate and disperse the energy of an impact so that it is not fully transmitted to the head and neck.

DEFINITIONS

- **Shell: an** element made of hard material with a smooth finish that constitutes the general external part of the helmet.

- **Peak: a** prolongation of the shell that goes over the eyes.

- **Brim: a** projecting edge that goes around the shell.

- **Suspension: a** complete set of elements that keep the helmet in position on the head and absorb kinetic energy during the impact.

- **Headband:** part of the harness that goes around part or all of the head above the eyes horizontally that represents approximately the widest circumference of the head.

- **Strip ratchet: an** adjustable band that is tightened or loosened behind the head and under the headband; it may form part of the headband.

- **Chinstrap: a** band that is clipped together under the chin to help hold the helmet on the head. This is an optional element of safety helmets rather than an essential feature.

Protecció obligatoria del cap

SAFETY HELMET

PROTECTION

Depending on how they work, safety helmets must protect against the following risks:

- **Head injuries due to external actions:**
  - Mechanical hazards (falling objects, impacts, trapping from the side, etc.).
  - Thermal hazards (splashes of molten metal, flames, etc.).
- **Hazards to people due to actions on the head:**
  - Electrical hazards (contact with electrical conductors, electrostatic discharges, etc.).
  - Hazard of non-identification due to altered perception.
- **Health hazards or discomfort associated with the use of a safety helmet:**
  - Hazards due to discomfort at work caused by using a safety helmet (bad fit, sweating, dirtiness, etc.).

MARKING

Safety helmets must be marked with the following:

- CE marking (according to Royal Decree 1407/1992 on conditions for marketing and free movement of personal protection equipment around the European Community).
- Number of the harmonised regulation used to assess the product's conformity with essential health and safety requirements.
- Name or trademark of the manufacturer.
- Name or reference of the model (as given by the manufacturer).
- Date of manufacture (at least the quarter and the year).
- Range of sizes in cm.

In addition, the safety helmet could have markings relating to optional requirements (for specific activities) as follows:

- Resistance to very low temperatures: **-20⁰C or -30⁰C.**
- Resistance to very high temperatures: **+150⁰C.**
- Electrical insulation: **440 V** of alternating current.
- Resistance to lateral deformation: **LD.**
- Resistance to splashes of molten metal: **MM.**

Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

PPE: SAFETY HELMET

CODE	**SHR 102**	Date:	**July 2003**	Revision:	**00**	Page:	**3 of 3**

SELECTION: RECOMMENDATIONS

1. Before personal protection equipment is purchased, the **table of risks** should be completed to obtain more accurate criteria.
2. The **manufacturer's information booklet** should be considered, and must include the following useful information:
   - Name and address of the manufacturer or authorised representative.
   - Available sizes and classes of protection.
   - Explanation of markings.
   - Storage.
   - Use, maintenance, cleaning and disinfection.
   - Expiry date or service lifetime, etc.
3. Helmets made from polyethylene, polypropylene or ABS tend to lose mechanical resistance due to the effect of heat, cold, exposure to the sun or exposure to strong sources of UV radiation (UV). If this kind of helmet is used regularly in the open air or close to UV sources, such as soldering stations, it must be replaced at least once every three years.
4. Helmets should no longer be used if they are cracked, losing fibres, etc. In addition, they should be withdrawn if they have received a very hard impact, even if they show no visible signs of having been damaged.
5. Cleaning and disinfection are particularly important if the user sweats profusely or if the helmet is used by various workers. Helmets should be disinfected by submerging them in a suitable solution such as formaldehyde at 5% or sodium hypochlorite.
6. Materials that can attach to the helmet, such as plaster, cement, glue or resins can be removed by mechanical means or using a suitable solvent that does not attack the material from which the helmet's shell is made.
7. Safety helmets that are not being used should be kept in places that are not exposed to direct sunlight or to high temperature or humidity.
8. The best protection against perforation is provided by helmets made from thermoplastic materials (polycarbonates, ABS, polyethylene and polycarbonate with fibreglass) with a good suspension. Helmets made from light metal alloys do not withstand perforation by sharp objects or sharp edges.
9. Helmets that have projections on the inside should not be used, as they could cause serious injury in the case of impact to the side of the head. They could be fitted with an inner lining on the sides that is inflammable and does not melt with heat.
10. Helmets made with light alloys or with a brim at the side should not be used in workplaces exposed to hazards of splashes of molten metal.
11. When there is a danger of electrical contact with bare electrical conductors, only thermoplastic helmets should be used. They must not have any ventilation holes or any metal parts on the outside of the helmet.
12. Helmets for people who work in high places, particularly those who assemble metal structures, must have a chinstrap.