Legislation for Personal Protective Equipment (PPE)Two directives for PPE :

1/ Directive 89/656/EEC of 30 November 1989

This directive defines the minimum health and safety requirements for PPE users. Personal protective equipment must:

- Be suited to the risks to prevent, without incurring itself an increased risk.
- Take into consideration workers' ergonomic and health requirements.
- Be comfortable to wear, after making the necessary adjustments.
- Be used only for the intended purpose.
- Conform to instructions.

2/ Directive 89/686/EEC of 21 December 1989.

This directive applies to PPE manufacturers. It defines the manufacturer's obligations.

1 / PPE certification procedure:

Before marketing a PPE, the manufacturer must submit a technical dossier, along with some sample gloves, to the notified body, that performs an EC type examination.

2 / Control of manufactured PPE

There are 3 categories of PPE:

- Category 1: minimum risks: no EC examination required
- Category 2: intermediate risks
- Category 3: irreversible and deadly risks: all PPE sold by PIERCAN falls into this category.

Each year, samples are collected from production. The collected samples must achieve, at the least, the same performance results as those of the initial AET. If this is not the case, the notified body can go as far as to demand withdrawal of the concerned reference.

3/ Associated standards

A/ EN 420 standard (September 2003) Main standard applicable to all gloves.

It defines the design, marking and information criteria for all gloves and arm guards.

- pH compliance
- Washing instructions
- Sizes and dimensions
- Measurement of dexterity
- Glove and label marking **example**)
    - Manufacturer's namet
    - Glove reference with size
    - Expiry week and year
    - EC, followed by no. of monitoring body
    - Pictograms representing the claimed standards.
- Instructions leaflet (**example**)
    - Manufacturer's full name and address
    - Glove reference with size
    - Specific standard reference

- Pictograms explained, along with values obtained
- Maintenance instructions
- Risks of allergy

B/ EN 388 standard: protection from mechanical risks

A glove providing protection from mechanical risks must achieve performance level 1 or higher for at least one of the following properties:

TEST	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Abrasion (number of cycles) **a**	100	500	2000	8000	-
Blade cut resistance **b**	1,2	2,5	5,0	10 ,0	20,0
Tear resistance (N)**c**	10	25	50	75	-
Puncture resistance (N) **d**	20	60	100	150	-

C/ EN 374 standard: gloves providing protection from chemical risks

NB: For each glove model recommended for protection from chemical risks, the performance indices obtained for mechanical test must be specified on the information leaflet provided by the manufacturer.

Principle: each chemical protection glove is classified according to the exposure time during which the glove is able to prevent permeation of each chemical:

EXPOSURE TIME in minutes	PERMEATION PERFORMANCE INDEX
< 10	1
> 30	2
> 60	3
> 120	4
> 240	5
> 480	6

A glove should be considered as tight against chemicals if it achieves a performance index of at least 2 for THREE test chemicals taken from the list below:

LETTER CODE	CHEMICAL	CAS NUMBER	CLASS
A	METHANOL	67-56-1	Primary alcohol
B	ACETONE	67-64-1	Ketone
C	ACETONITRILE	75-05-8	Nitrile
D	DICHLOROMETANE	75-09-2	Chlorinated hydrocarbon
E	CARBON DISULFURE	75-15-0	Sulphur-containing organic compound
F	TOLUENE	108-88-3	Aromatic hydrocarbon
G	DIETHYLAMINE	109-89-7	Amine
H	TETRAHYDROFURANE	109-99-9	Heterocyclic ether
I	ETHYL ACETATE	141-85-5	Ester
J	N-HEPTANE	142-85-5	Saturated hydrocarbon
K	40% CAUSTIC SODA	1310-73-2	Inorganic base
L	96% SULPHURIC ACID	7664-93-9	Inorganic mineral acid

Pictogram for watertight gloves with low chemical resistance and air- or watertight gloves.

D/ EN 421 standard: gloves providing protection from ionising radiation and radioactive contamination

Protection from radioactive contamination is checked by glove integrity.

To obtain the protection from ionising radiation pictogram, several tests must be conducted:

- Resistance to cracking under the effect of ozone

  The deterioration of elastomeric materials under the effects of ionising radiation can be roughly approximated to their behaviour to ozone. Thus, cracking resistance under the effect of ozone can be used as a means of selection for gloves providing protection from ionising radiation.

PERFORMANCE LEVEL	MATERIAL CONDITION
1	Cracks visible at 10% elongation
2	No cracks visible at 10% elongation
3	No cracks visible at 20% elongation
4	No cracks visible at 100% elongation

- Determination of lead equivalent thickness

  2 methods: X-ray source or gamma radiation source

- Radiation attenuation strength ranges from 0.05 mm lead to 0.50 mm.

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