

The Personal Protective Equipment (PPE) Directive (89/686/EEC) is written to ensure all PPE meets common standards of quality and performance and is categorised to enable safety professionals to match the PPE to the level of risk or hazard identified. Protective gloves which are classified as PPE must be CE marked and comply with relevant EN standards (described below).

The PPE Directive specifies three classes of gloves for different levels of user risk; 'minimal', 'intermediate' and 'mortal or irreversible'.

Simple design - minimal risk

Gloves which may be used in low risk situations such as gardening gloves or cleaning gloves. Manufacturers are permitted to test and certify gloves themselves - gloves within this category are CE marked as follows:



Intermediate design - intermediate risk

Gloves which may be used to protect against intermediate risks such as mechanical protection gloves providing cut, puncture and abrasion resistance, must be subjected to independent testing and certified by a notified body.

Only approved bodies may issue a CE mark, without which the gloves may not be sold. The name and address of the Notified Body must appear on the instructions for use that accompany the gloves. Gloves of intermediate design are CE marked as follows:



Complex design - irreversible or mortal risk

Gloves which are designed to protect against the highest level of risk eg chemicals, must be tested and certified by a Notified Body.

The quality assurance system used by the manufacturer to guarantee homogeneity of production must be independently checked. The body carrying out this evaluation will be identified by a number which must appear alongside the CE mark. Gloves of complex design are CE marked as follows:



Note: The original PPE Directive 89/686/EEC has been amended by both the 93/95/EEC Directive and the CE marking Directives 93/68/EEC and 95/58/EEC.


EN420: 2003 - General requirements for protective gloves

Defines the general requirements for most types of protective gloves which includes:

- Glove construction
- Ergonomy
- Dexterity
- Innocuousness
- Product marking and packaging information
- Sizing
- Water vapour transmission and absorption
- Electrostatic properties

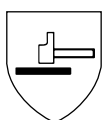
Sizing of gloves according to hand length and circumference:

Glove Size	Hand Circumference (mm)	Hand Length (mm)	Min length of glove (mm)
6	152	160	220
7	178	171	230
8	203	182	240
9	229	192	250
10	254	204	260
11	279	215	270

This pictogram indicates that the user should always consult the instructions for use: 

EN388: 2016 - Mechanical Protection

The Mechanical Risks pictogram is shown with five or six performance levels, each representing test performance against specific mechanical hazards. The letter in the fifth position corresponds to the ISO 13997 cut resistance level. Where a letter 'P' is shown in the sixth position, gloves are certified to provide impact protection.



a b c d e f

Performance Level	1	2	3	4	5	
Abrasion Resistance (cycles)	100	500	2000	8000	n/a	
Blade Cut Resistance (index)	1.2	2.5	5.0	10.0	20.0	
Tear Resistance (newtons)	10	25	50	75	n/a	
Puncture Resistance (newtons)	20	60	100	150	n/a	
	a	b	c	d	e	f
ISO13997 Cut Resistance (newtons)	2	5	10	15	22	30
Impact Protection	PASS (P) or FAIL (no marking)					

Level 'X' indicates not tested or not applicable

EN407: 2004 - Protection from Thermal Hazards

The heat and flame pictogram is shown with six numbers, representing performance levels against specific thermal hazard tests.



a b c d e f

Performance Level		1	2	3	4
a. Burning Behaviour	After flame time	< 20 s	< 10 s	< 3 s	< 2 s
	After glow time	no requir.	< 120 s	< 25 s	< 5 s
b. Contact Heat	Contact temperature	100°C	250°C	350°C	500°C
	Threshold time	> 15 s	> 15 s	> 15 s	> 15 s
c. Convective heat (heat transfer delay)		> 4 s	> 7 s	> 10 s	> 18 s
d. Radiant heat (heat transfer delay)		> 7 s	> 20 s	> 50 s	> 95 s
e. Small drops molten metal (# drops)		> 10	> 15	> 25	> 35
f. Large quantity molten metal (mass)		30g	60g	120g	200g

Needlestick Resistance

Resistance to punctures from needlestick is measured in Newtons according to ASTM F2878:10 which uses a 25 gauge hypodermic medical grade needle.

EN1149 Antistatic

EN 1149-5: 2008 is a European Standard which specifies the performance and design requirements for electrostatic dissipative clothing, used as part of an earthed clothing system to avoid the build up of static charges. There are a number of important applications where the use of antistatic hand protection is of critical importance, such as:

- To prevent charge build up and release in flammable atmospheric environments where there is a risk of incendiary discharge
- To avoid damage to sensitive electronic componentry during assembly processes
- To control the attraction of dust and other contaminants to critical pre-painted surfaces

Two different test methods exist for the characterisation of antistatic performance according to EN 1149-5.

EN 1149-1: Test method for measurement of surface resistivity.

A specimen is placed on an insulating base plate and an electrode assembly placed on top. A Direct Current (DC) potential is applied and the resistance of the fabric is measured. This test determines the resistance over a short distance and is most appropriate for materials for which the electrostatic behaviour is based on surface conductivity. Materials must record < 2.5×10^9 ohms to meet the requirements of the standard.

EN 1149-3: Test method for measurement of charge decay.

A specimen is charged by an induction effect. The induced charge on the test material influences the field that is observed by a probe positioned above the test surface. The decrease in field charge is used to determine the half decay time and the shielding factor of the material. A half decay time of < 4 seconds or shielding factor of > 0.2 are required to meet the conditions of EN1149-5 using this test method.

EC Food Directive

Tilsatec Blue Rhino products are approved for contact with all foodstuffs in compliance with the parent directive 1935/2004/EC. They also comply with the specific requirements laid down in European Commission Directive 2002/72/EC which governs the substances that may be used in the manufacture of food contact materials (including gloves for food handling) and specify that under normal foreseeable conditions of use, they do not transfer their constituents to food in quantities which could:

- endanger human health; or
- bring about an unacceptable change in the composition of the food; or
- bring about a deterioration in the organoleptic characteristics (i.e texture, taste, aroma)

To ensure food contact materials comply with these regulations a series of test standards are applied (EN 1186) to determine migration levels from contact materials into the food using a variety of food simulants.

Compliance with the allowable limits enables food gloves to be marked with the following 'food safe' pictogram:



Tilsatec food approved products have been tested according to these standards and meet the total extractive and overall migration limits required for repeat use application.