

Standards for gloves: Standard EN 407: 2004

Gloves Giving Protection from Thermal Hazards

Scope

This standard specifies thermal performance for protective gloves against heat and/or fire.

Definitions and Requirements

The nature and degree of protection is shown by a pictogram followed by a series of six performance levels, relating to specific protective qualities.



The 'heat and flame' pictogram is accompanied by a 6-digit number:

- **a. Resistance to flammability** (performance level 0 - 4)
- **b. Contact heat resistance** (performance level 0 - 4)
- **c. Convective heat resistance** (performance level 0 - 4)
- **d. Radiant heat resistance** (performance level 0 - 4)
- **e. Resistance to small splashes of molten metal** (performance level 0 - 4)
- **f. Resistance to large splashes of molten metal** (performance level 0 - 4)

Gloves must achieve at least Performance level 1 for abrasion and

Resistance to flammability:

based on the length of time the material continues to burn and glow after the source of ignition is removed. The seams of the glove shall not come apart after an ignition time of 15 seconds.

Contact heat resistance:

based on the temperature range (100-500 °C) at which the user will feel no pain for at least 15 seconds. If an EN level 3 or higher is obtained, the product shall record at least EN level 3 in the flammability test. Otherwise, the maximum Contact heat level shall be reported as level 2.

Convective heat resistance:

based on the length of time the glove is able to delay the transfer of heat from a flame. A level of performance shall only be mentioned if a performance level 3 or 4 is obtained in the flammability test.

Radiant heat resistance:

based on the length of time the glove is able to delay the transfer of heat when exposed to a radiant heat source. A performance level shall only be mentioned if a performance level 3 or 4 is obtained in the flammability test.

Resistance to small splashes of molten metal:

the number of molten metal drops required to heat the glove sample to a given level. A performance level shall only be mentioned if a performance level 3 or 4 is obtained in the flammability test.

Resistance to large splashes of molten metal:

the weight of molten metal required to cause smoothing or pinholing across a simulated skin placed directly behind the glove sample. The test is failed if metal droplets remain stuck to the glove material or if the specimen ignites.

CONTACT HEAT

A sample is taken from the palm area of a glove. The outside of the glove is put on a hot surface and the temperature of the inside of the glove is then monitored. The temperature on the inside of the glove must take 15 seconds or more to rise by 10°C from room temperature.

<i>EN 407</i>	Contact Temperature	Threshold Time
Performance Level	T°C	Seconds
1	100	>15
2	250	>15
3	350	>15
4	500	>15