



# GUIDE TO STANDARD EN 407:2020 Gloves Giving Protection from Thermal Hazards

This standard specifies thermal performance for protective gloves against heat and/or fire. It is expressed using this wave pictogram.

## EN 407:2020



The nature and degree of protection is shown by a series of six performance level ratings. The glove must also achieve at least level 1 to abrasion and tear (EN388:2016).

## A B C D E F

### A: Limited flame spread

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.

Performance level	After flame time (sec)	After glow time (sec)
1	≤ 15	no requirement
2	≤ 10	≤ 120
3	≤ 5	≤ 25
4	≤ 2	≤ 5

### C: Convective heat resistance

Based on the length of time the glove is able to delay the transfer of heat from a flame.

If a level 3 or 4 is obtained, the product shall record at least level 3 in limited flame spread test. Otherwise, convective heat level shall be reported to level 2.

Innermost layers of the glove shall be inspected, it shall show no sign of melting and holing.

Performance level	Heat transfer in (sec)
1	≥ 4
2	≥ 7
3	≥ 10
4	≥ 18

### E: Resistance to small splashes of molten metal

The number of molten metal drops required to produce a temperature rise of 40°C.

If a level 3 or 4 is obtained, the product shall record at least level 3 in limited flame spread test. Otherwise, small splashes of molten metal performance level shall be reported to level 2.

Innermost layers of the glove shall be inspected, it shall show no sign of melting and holing.

Performance level	Number of droplets
1	≥ 10
2	≥ 15
3	≥ 25
4	≥ 35

### B: Contact heat resistance

Based on the temperature range (100 – 500°C) at which the user will feel no pain for at least 15 seconds. The lowest result defines the level of performances.

If a level 3 or 4 is obtained, the product shall record at least level 3 in limited flame spread test. Otherwise, contact heat level shall be reported to level 2.

Performance level	Contact temperature °C	Threshold time (sec)
1	100	≥ 15
2	250	≥ 15
3	350	≥ 15
4	500	≥ 15

### D: 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.

If a level 3 or 4 is obtained, the product shall record at least level 3 in limited flame spread test. Otherwise, radiant heat level shall be reported to level 2.

Innermost layers of the glove shall be inspected, it shall show no sign of melting and holing.

Performance level	Heat transfer in (sec)
1	≥ 7
2	≥ 20
3	≥ 50
4	≥ 95

### F: Resistance to large splashes of molten metal

The weight of molten metal required to cause a smoothing or pin holing 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.

If a level 3 or 4 is obtained, the product shall record at least level 3 in limited flame spread test. Otherwise, small splashes of molten metal performance level shall be reported to level 2.

Outermost and innermost layers of the glove shall be inspected, it shall show no sign of melting and holing.

Performance level	Molten iron (g)
1	30
2	60
3	120
4	200