

EN407:2020



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

DEFINITION 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. Gloves must also achieve at least Performance level 1 for abrasion and tear.



Pictogram if level 1 for flame resistance is reached



Pictogram if level 1 for flame resistance is NOT reached

a. Limited flame spread (performance level 0-4)

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 levels for limited flame spread test

Performance level	After-Flame Time (s)	After-Glow Time (s)
1	≤ 15	No Requirement
2	≤ 10	≤ 120
3	≤ 3	≤ 25
4	≤ 2	≤ 5

b. Contact heat resistance (performance level 0-4)

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.

Performance levels for contact heat test

Performance level	Contact Temperature T_c (°C)	Threshold Time t_t (s)
1	100	≥ 15
2	250	≥ 15
3	350	≥ 15
4	500	≥ 15

c. Convective heat resistance (performance level 0-4)

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

Performance levels for convective heat test

Performance level	Heat Transfer Index HTI (s)
1	≥ 4
2	≥ 7
3	≥ 10
4	≥ 18

d. Radiant heat resistance (performance level 0-4)

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.

Performance levels for radiant heat test

Performance level	Heat Transfer t_{24} (s)
1	≥ 7
2	≥ 20
3	≥ 50
4	≥ 95

e. Resistance to small splashes of molten metal (performance level 0-4)

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.

Performance levels for small splashes of molten metal test

Performance level	Number Of Droplets
1	≥ 10
2	≥ 15
3	≥ 25
4	≥ 35

f. Resistance to large splashes of molten metal (performance level 0-4)

The weight of molten metal required to cause 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.

Performance levels for large splashes of molten metal test

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