

## Safety levels ISO 11612 - Clothing to protect against heat and flame:

A - limited flame spread - requirements

- no flaming at the top or edges
- no melting or flaming or molten debris
- afterflame / afterglow shall be less than 2 s

A1 = face ignition, the flame is applied for 10 s.

B - Convective heat

B1 = 4,0 < 10,0 s

B2 = 10,0 < 20,0 s

B3 = 20,0 s

B3 offers the highest protection level

The heat flux is 80 Kw/m<sup>2</sup>. The heat that flows through a sample is measured with a calorimeter in direct contact with the sample. The calorimeter measures in seconds the time that is needed to reach a temperature rise of 24 degrees.

C - Radiant heat

C1 = 7,0 < 20,0 s

C2 = 20,0 < 50,0 s

C3 = 50,0 < 95,0 s

C4 = 95,0 s

C4 offers the highest protection level

A radiant flash of heat with a flux density of 20 Kw/m<sup>2</sup> is applied on the sample. This test evaluates the time needed for a person to start feeling pain and on the other hand, the time needed to produce second degree skin burn injury.

Heat resistance requirement:

The fabrics and hardware used in the garment shall not ignite or melt and shall not shrink more than 5 % at a temperature of 180 degrees.

## Safety levels ISO 14116 - Protection against heat and flame - limited flame spread materials

Index 1:

- no flaming at the top or edges
- no flaming debris
- no afterglow shall spread

Index 2:

- no flaming at the top or edges
- no flaming debris
- no afterglow shall spread
- no hole formation

Index 3:

- no flaming at the top or edges
- no flaming debris
- no afterglow shall spread
- no hole formation
- afterflame shall be less than 2 s

Index 3 gives the highest protection level.

*Index 3/5H/40 indicates that the material meets flammability index 3, 5 times home-washed at 40 degrees.*

## Safety levels EN 61482-1-2 - Electric arc

Class 1 = arc current 4 kA, arc duration 500 ms

Class 2 = arc current 7 kA, arc duration 500 ms

Class 2 gives the highest protection level

An arc flash occurs when there is a short circuit through the air between conductors or conductors and ground.