



## PROTECTION AGAINST HEAT AND FIRE

**Method of test:**  
Evaluation of materials and material assemblies when exposed to a source of radiant heat.



## PROTECTION AGAINST HEAT AND FLAMES

**Method of test:**  
Determination of heat transmission on exposure to flame.



**Assessment of resistance of materials to molten metal splash.**



## PROTECTIVE CLOTHING FOR FIREFIGHTERS

Requirements and test methods for protective clothing for Firefighters.



## PROTECTIVE CLOTHING FOR USE IN WELDING AND APPLIED PROCESSES

General requirements. Does not cover clothing worn for special welding jobs.



## PROTECTIVE CLOTHING AGAINST HEAT AND FLAME

Test method for limited flame spread.



## PROTECTIVE CLOTHING - ELECTROSTATIC PROPERTIES

Surface resistivity (test methods and requirements).



## PROTECTIVE CLOTHING FOR INDUSTRIAL WORKERS EXPOSED TO HEAT: EXCLUDING FIREFIGHTERS AND WELDERS CLOTHING



## PROTECTION AGAINST HEAT AND FLAME:

Limited flame spread materials and material assemblies.

This standard refers only to the materials or material assemblies from which garments with limited flame spread properties are made.

Such information may appear in the manufacturer's literature.

Markings in the form: EN533 Flame spread index/Durability.

Flame Spread Index - 1, 2 or 3 - Limited flame spread index (3 is best). If index 1 materials are present:

Use only over EN533 Index 2 or 3 material and DO NOT use next to the skin.

- A - Limited flame spread, and at least one of:
- B# - Convective heat resistance (# = 1 to 5)
- C# - Radiant heat resistance (# = 1 to 4)
- D# - Molten aluminium splash (# = 1 to 3)
- E# - Molten iron splash (# = 1 to 3)

In all cases, higher number denotes better performance. If no number is given, no protection is claimed.



Example Marking

## What is Protex/Protal?

- Protex/Protal is a High Performance Flame Retardant (FR) Modified Acrylic Fibre.
- Protex/Protal is cotton-like in its appearance and feel, it is inherently fire retardant which means its FR is permanent - further treatments or re-treatments are not required.

## Multi-Function protection

- Blends of Protex/Protal fabrics can meet stringent heat and flame protection standards. EN ISO 11612 A, B1, C1, E1.
- Works with other fibres and/or fabric treatments: anti-static (EN1149), chemical resistance (EN368), anti-bacterial, thermal power, etc.
- Pigment printable.
- High Visibility EN ISO 20471.
- Breathable membrane.

## Easy to care for

- FR property built in: does not wash out.
- Domestic or industrial laundry: can withstand severe laundry conditions without loss of shape, colour or mechanical properties.
- Dry cleanable and easy-iron.

## Good for wearer

- Permanent protection
- No additional treatment required
- Comfortable to wear
- Easy to home launder
- Stays looking good
- Peace of mind

## Alternative - treatments

- **PROBAN**
- **PYROVATEX**

- Both of the above are treatments that are generally added to the fabric after its manufacture, usually used on cotton and cotton blend fabrics.
- The FR abilities of the fabric created can have very good FR properties; though its perceived and actual permanency is always under question.

- **ZIRPO**

- Used on wool and wool blends, classed as a “permanent treatment” as it physically bonds at a “molecular” level with the wool.