



**International  
Standard**

**ISO 21942**

**Station uniform for firefighters**

**AMENDMENT 1**

*Tenue de travail pour les pompiers*

*AMENDEMENT 1*

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This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Protective clothing and equipment*, Subcommittee SC 14, *Firefighters' personal equipment*.

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# Station uniform for firefighters

## AMENDMENT 1

Table 1

Correct sections of table according to above amendment in 6.3.1, 6.3.2 and also align table with text in 6.5 with respect to expression of performance requirements.

Replace Table 1 by the following:

Performance category	Clause	Performance requirement	Level 1	Level 2
<b>Thermal requirements</b>	6.2-6.3			
Limited Flamespread	6.2	according to Table 2	Required	Required
Heat resistance	6.3.1	ISO 17493, (180 + 5/-0) °C for 5 min, no material shall melt, drip, ignite nor shrink ≤ 5 %	Required	
	6.3.2	ISO 17493, (260 + 5/-0) °C for 5 min, no material shall melt, drip, ignite nor shrink ≤ 10 %		Required
Heat transfer (convective)	6.4.1	ISO 9151, HTI <sub>24</sub> ≥ 4 s		Required
Heat transfer (radiation)	6.4.2	ISO 6942 Method B, 20 kW/m <sup>2</sup> , RHTI <sub>24</sub> ≥ 7 s		Required
<b>Dimensional change</b>	6.5	ISO 5077, woven material (length or width direction) shall not exceed ≤5 % and for knitted materials shall not exceed ≤8 %	required	required
<b>Physical requirements</b>	6.6			
Tensile strength (woven materials)	6.6.1	ISO 13934-1 ≥ 300 N	required	required
Tear strength (woven materials)	6.6.2	ISO 13937-2 ≥ 10 N	required	required
Burst strength (knitted materials)	6.6.3	ISO 13938-1 or ISO 13938-2, ≥260 kPa, using a 7,3 cm <sup>2</sup> test area or ≥100 kPa when using a 50 cm <sup>2</sup> test area	required	required
Structural seam strength	6.6.4	ISO 13935-2 ≥ 225 N for coveralls and trousers, and ≥150 N for shirts	required	required
Abrasion resistance	6.6.5	ISO 12947-2, 12 kPa, ≥15 000 rubs for woven materials (knitted materials are exempt)	optional	optional
<b>Ergonomic and comfort requirements</b>	6.7			
Thermal resistance	6.7.1	ISO 11092, ≤0,055 m <sup>2</sup> K/W	required	required
Water vapour resistance	6.7.2	ISO 11092, ≤ 7 m <sup>2</sup> Pa/W	required	required
Electrostatic resistance	6.8	EN 1149-5 or equivalent	optional	optional
Colour fastness	6.9	ISO 105-B02, Method 1 (artificial light) ISO 105-X12 (rubbing) ISO 105-C06 (laundering) or ISO 105-D01(dry-cleaning) ISO 105-E04 (perspiration)	optional	optional

Table 2

Correct Level 1 requirement in line with Index 2 of ISO 14116 for afterflame property.

Replace Table 2 by the following:

Properties	Level 1 Requirement – Index 2	Level 2 Requirement – Index 3
Flame spread	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.
Flaming debris	No specimen shall give flaming or molten debris.	No specimen shall give flaming or molten debris.
Hole formation	No specimen shall give hole formation of 5 mm or greater in any direction, except for an interlining that is used for specific protection other than heat and flame protection.	No specimen shall give hole formation of 5 mm or greater in any direction, except for an interlining that is used for specific protection other than heat and flame protection.
Afterglow	Afterglow time shall be $\leq 2$ s. A glowing inside the charred area is defined in ISO 15025 as afterglow without combustion and for the purpose of this clause is not regarded as afterglow.	Afterglow time shall be $\leq 2$ s. A glowing inside the charred area is defined in ISO 15025 as afterglow without combustion and for the purpose of this clause is not regarded as afterglow.
Afterflame		Afterflame time shall be $\leq 2$ s.
NOTE	The afterflame for level 1 is intentionally left blank as there is no requirement.	

6.3.1

Change the title to make requirement for Level 1 only. Correct Table 1 accordingly.

**“6.3.1 Heat resistance at a temperature of (180 +5/-0) °C (required for Level 1 only)”**

6.3.2

Change the title to make requirement for Level 2 only and align text to that of Level 1. Correct last sentence of the text with respect to closure system. Correct Table 1 accordingly.

**“6.3.2 Heat resistance at a temperature of (260 +5/-0) °C (optional)**

The material of a single layer garment, which is intended to be worn next to the skin, shall be tested according to ISO 17493 at a temperature of (260 +5/-0) °C for an exposure time of 5 min. Test samples (if more than a single layer, the material assembly) shall not ignite, melt or drip and shall not shrink by more than 10 %. Closure systems, Hardware and High Visibility materials shall be tested according to the requirements of 6.3.1.

NOTE Heat shrinkage has the potential to reduce the thermal protection level of the garment as it reduces the insulating air pocket between the garment and the body. Therefore, heat shrinkage in heat and flame protective garments is limited, especially in cases where a heat or flame hazard exists that could impinge a large percentage area of the garment.”