

DIN EN 17673:2022-10 (E)

Protective clothing - Protection against heat and flame - Requirements and test methods for garments with integrated smart textiles and non textile elements

Contents		Page
European foreword		4
Introduction		5
1	Scope	6
2	Normative references	6
3	Terms and definitions	8
4	General requirements	10
5	Sampling, conditioning and pre-treatment	10
5.1	Sampling	10
5.2	Conditioning	11
5.3	Pre-treatment by cleaning and exposure to conditions of use	11
5.3.1	General	11
5.3.2	Pre-treatment by cleaning	11
5.3.3	Mechanical pre-treatment	11
5.3.4	Deterioration of repellency by cleaning	11
6	Implementation of the requirements in EN ISO 13688 for smart textiles and non-textile devices	12
7	Implementation of the requirements in EN ISO 11612 for smart textiles and non-textile devices	12
7.1	General	12
7.2	Evaluation of the integrated smart textiles and non-textile elements	15
7.2.1	Penetration of hardware	15
7.2.2	Heat resistance	15
7.2.3	Limited flame spread	15
7.2.4	Optional test - whole garment test against fire exposure on thermal manikin	15
8	Electrical safety and functionality of smart electronic components/devices	16
8.1	General	16
8.2	Use under variable temperatures	16
8.2.1	Slow and fast change in temperatures	16
8.2.2	Manufacturer's specifications	16
8.3	Thermal safety	17
8.4	Electrical safety	17
8.5	Water and humidity resistance of smart textiles and non-textile devices	17
8.6	Batteries	18
8.7	Sinusoidal vibrations	18
8.8	Safety towards electromagnetic fields	18
8.9	Explosive zones	18
9	Evaluation of smart textiles and smart non-textile devices and elements after heat and flame testing	19
9.1	General	19
9.2	Evaluation of the electrical safety and functionality	19
9.3	Combined heat and flame and electrical evaluations	19

10	Test report	20
11	Marking	20
11.1	General	20
11.2	Related to EN ISO 11612	21
11.3	Explosive zone (if required)	21
11.4	Overall	21
12	Information supplied by the manufacturer	22
Annex A (normative)	Smart textiles and smart non-textile devices and elements functionality and need for efficacy	24
Annex B (normative)	Evaluation of the safety of the integrated smart/electronic components	27
Annex C (informative)	Risk assessment	29
Bibliography		30