

DIN EN 17487:2025-05 (E)

Protective clothing - Garments with permethrin as-treated articles supporting the protection against tick bites

Contents		Page
European foreword		5
Introduction		6
1	Scope	8
2	Normative references	8
3	Terms and definitions	9
4	Performance requirements	11
4.1	General	11
4.1.1	Introduction	11
4.1.2	Size designation and fit	11
4.2	Innocuousness	11
4.3	Design	11
4.3.1	General	11
4.3.2	Pockets and flap closures	12
4.3.3	Closures and seams	12
4.4	Requirements related to permethrin	12
4.4.1	Consideration on permethrin transition	12
4.4.2	General	13
4.4.3	Requirements on permethrin concentration	13
4.4.4	Requirements for biological activity (bio-activity) against ticks	13
4.5	Mechanical properties	14
5	Sampling and pre-treatment	14
5.1	General	14
5.2	Sampling for selecting a fabric specific method for determining permethrin concentration	14
5.3	Sampling for determining the specific mass of the fabric	14
5.4	Sampling for determining the homogeneity, the average and maximum permethrin concentration	14
5.5	Pre-treatment	14
5.5.1	General	14
5.5.2	Pre-treatment with one cleaning cycle	15
5.5.3	Ageing	15
6	Marking in garments	15
7	Information supplied by the manufacturer	16
Annex A (normative) Measuring permethrin concentration in fabric		18
A.1	General	18
A.2	Selecting a fabric specific method for determining permethrin concentration	18
A.2.1	Principle of test	18
A.2.2	Reagents	18
A.2.3	Required equipment	18
A.2.4	Sample preparation	18
A.2.5	Testing procedure	18
A.2.6	Calculation and expression of results	19

A.2.7	Reported values	19
A.3	Determining the specific mass	19
A.4	Determining the homogeneity, the average, and the maximum permethrin concentration	19
A.4.1	Principle of test	19
A.4.2	Reagents	19
A.4.3	Required equipment	19
A.4.4	Test specimen preparation	19
A.4.5	Testing procedure	19
A.4.6	Calculation and expression of results	19
A.4.7	Reported values	20
A.5	Test report	20
Annex B (normative) Bio-activity testing, activity of the permethrin in the fabric against ticks		21
Annex C (informative) Rationale		22
C.1	Why permethrin?	22
C.2	Why use body covering garments that are industrially treated with permethrin?	22
C.3	Why is standardization needed for body covering garments with permethrin?	23
C.4	What is known about the uptake of permethrin in the body and the effects of permethrin on human health?	23
C.4.1	General	23
C.4.2	How does the body absorb permethrin?	23
C.4.3	Is permethrin a CMR (carcinogenic, mutagenic or reprotoxic) substance? Is it, for example, carcinogenic?	24
C.4.4	Can allergic reactions occur? Are any allergic reactions known?	24
C.4.5	Can chemicals in the textile be hazardous to health?	24
C.4.6	Have the health of wearers of the garment and the possible long-term effects on their health been studied?	25
C.4.7	Are there any high-risk groups for permethrin?	25
C.5	Risks other than permethrin	26
C.6	How to achieve optimal protection?	26
C.7	Washing and drying conditions for users of the garments	26
C.8	Additional remarks on labelling	26
C.9	Justification of test choices	27
C.9.1	General	27
C.9.2	Tests on permethrin concentration	27
C.9.3	Tests on bio-activity against ticks	27
C.9.4	User safety	27
Annex D (informative) Evaluation of the transition of permethrin using a method based on friction on the fabric surface		28
D.1	General	28
D.2	Principle of test	28
D.3	Apparatus and materials	28
D.4	Auxiliary materials	28
D.5	Reagents	29
D.6	Sampling and preparation of test specimens	29
D.6.1	General	29
D.6.2	Dimensions of specimens and auxiliary materials	29
D.7	Preparation of the sweat solution	29
D.8	Impregnation of the abradant with sweat solution	30
D.9	Preparation of the abrasion machine	30
D.10	Sample preparation and analysis	30
D.10.1	Extraction of abradant	30
D.10.2	GC-MS Determination	30
D.11	Test report	32
Annex ZA (informative) Relationship between this European Standard and the essential requirements of Regulation (EU) 2016/425 aimed to be covered		33
Bibliography		35