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Solutions*

TEST REPORTS For Duratex Fabrics

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"DESIGNED FOR HEALTHCARE PROFESSIONALS"

PROTECTIVE CLOTHING COVERALL SAFETY WORK WEAR

EN 343 / EN 1186 / EN 13034

EN 14325 / EN 13688 / EN 1149-1



LAYER PROTECTIVE CLOTHING COVERALL



100 % PU COATED FABRIC

100 % POLYAMIDE BASE FABRIC



SAFETY WORK WEAR

- + PRECISE AND FLAWLESS**
- + DURABLE & BREATHABLE COMFORT**
- + SILICON & LATEX FREE**
- + PROTECTION AGAINST BLOOD & BODY FLUIDS**

- + SANITATION WORKERS, SECURITY STAFF**
- TRAFFIC WARDEN, TRANSPORTATION**
- + ANTI-BACTERIAL, ANTISTATIC**
- + FLAME RETARDANT**

EN- 343

Waterproof and Breathable Protective Clothing



WATERPROOF
EN 343



BREATHABLE
EN 343



Report No: 2021241218
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Sample ID : YELLOW PER COATED RABIC

	TEST	METHOD	RESULT
*	Waterproof and Breathable Protective Clothing	EN 343	PASS



Seal



Customer Representative
Merve Nur KIRVELİ



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Environment

The requirements and standards apply to equipment intended for use in

X	Residential (domestic) environment
X	Commercial and light-industrial environment
X	Industrial environment
X	Medical environment

EN 343: Waterproof and Breathable Protective Clothing
Scope

This standard specifies requirements and test methods that are applicable to finished items of clothing, materials and seams of protective clothing against the influence of precipitation, fog and soil moisture.

Clause	Requirement	Result				
4	Performance evaluation and requirements					
4.1.1	General requirements	PASS				
	The garment must not have any rough, sharp or hard surfaces that could irritate or injure the user.	PASS				
	The jacket / coat or overalls must be closable up to the collar or neckline and be long enough to cover the waistband.	PASS				
	Outside pockets must be closable.	PASS				
	Closures such as zippers, fastenings, buttons etc. must not open unintentionally. Hoods attached to the jacket permanently or as a removable accessory must not pose a risk to the user if there is a risk of entanglement in the work environment.	PASS				
	Restrictions due to stowed hoods and turning the head must be avoided or minimized.	PASS				
	In the manufacturer's information brochure, the necessary procedures must be specified, such as how the hood is used for the intended purpose in certain work scenarios.	PASS				
	If the weight of the garment can affect comfort, it is recommended that you test it beforehand. Rain protection clothing is usually the outermost layer of a complete garment with additional layers underneath. It has been shown that the lower layers of the garment can provide significant overall breathability and comfort if they have moisture management.	PASS				
	If the weight of the garment can affect comfort, it is recommended that you test it beforehand. Rain protection clothing is usually the outermost layer of a complete garment with additional layers underneath. It has been shown that the lower layers of the garment can provide significant overall breathability and comfort if they have moisture management.	PASS				
4.2	Water resistance WP When testing according to 6.3, the water resistance WP of the outer material layer with the applied waterproof layer must correspond to Table 2.	Class 1 PASS				
	Table 2 - Classification of water resistance					
	Water passage resistance WP		Class			
			1	2	3	4
	-Material before pre-treatment		WP ≥ 8000 Pa	no exam required ^a	no exam required ^a	no exam required ^a
	-Material after each pretreatment		no exam required	WP ≥ 8000 Pa	WP ≥ 13000 Pa	WP ≥ 20000 Pa
	-Seams before pre-treatment		WP ≥ 8,000 Pa	WP ≥ 8,000 Pa	WP ≥ 13000 Pa	no exam required ^b
-Seams after cleaning	no exam required	no exam required	no exam required	WP ≥ 20000 Pa		
^a No examination necessary as the worst case in classes 2, 3 and 4 occurs after the pretreatment.						
^b No examination necessary as the worst case in class 4 occurs after the pretreatment.						

4.3	Water vapor transmission resistance R_{et}					Class 1
	Table 3 - Classification of water vapor resistance					
	Water vapor resistance R_{et} $\frac{m^2 \times Pa}{W}$	Class				
		1	2	3	4	
		R_{et} over 40	$20 < R_{et} \leq 40$	$10 < R_{et} \leq 20$	$R_{et} \leq 10$	
4.4	Tensile strength of the woven outer material layer When testing according to 6.5, the outer material layer must withstand a tensile force of at least 450 N in both orthogonal directions of the material.					PASS
4.5	Tear strength of the woven outer material layer When testing according to 6.6, the outer material layer must withstand a tear force of at least 20 N in both orthogonal directions of the material					PASS
4.6	Burst strength of the knitted outer material layer When testing according to 6.7, the knitted outer material layer must withstand a bursting force of at least 100 kPa for a test area of 50 cm ² or 200 kPa for a test area of 7.3 cm ² .					PASS
4.7	Change in size of protective clothing If tests are carried out in accordance with 6.8 and in accordance with the specifications in Table 1, the dimensional change in the corresponding materials after five washing or cleaning cycles in both orthogonal directions must not exceed + 3% for woven fabrics and + 5% for knitted fabrics.					PASS
4.8	Seam strength of the outer material layer When testing according to 6.9, the outer material layer must have a seam strength of at least 225 N. This requirement does not apply to materials with an elongation of more than 50%.					PASS
4.9	Watertightness of a finished piece of clothing When testing according to 6.10, the following requirements for the garments must apply:					PASS
	Table 4 - Requirements for testing finished garments in the rain tower					
	Capillary ^a length on sleeves and lower hems		max. 5 cm			
	Capillary length a on trouser hems		max. 10 cm			
	Capillary length a on hood hems		max. 4 cm			
	Wet jersey on manikin		0 cm2			
^a The measurement of the capillary length begins at the last seam.						
5	Pretreatment					-
5.1	General					-
	The test samples that are used for the test to determine the water resistance must be pretreated according to 5.2 to 5.5.					PASS
5.2	Pretreatment by cleaning Cleaning must be carried out in accordance with the manufacturer's instructions on the basis of standardized procedures. If the number of cleaning cycles is not specified, the tests must be carried out for washing after 5 washing cycles (a wash consists of one wash and one drying process) or for dry cleaning after 5 cleaning cycles. This must be pointed out in the manufacturer's information brochure.					PASS
5.3	Pretreatment by abrasion 4 test samples must be subjected to a pretreatment by abrasion. The pre-treatment must be carried out on the outside of the outer material layer, but with all materials of the clothing together with the applied waterproof layer. The pretreatment is carried out according to EN 530, procedure 2, with the exception of the externally coated outer material layer, with the following specifications:					PASS

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	- Abrasives and glass fabric with abrasive grit according to EN 388; - Pressure on the test sample: (9 ± 0.2) kPa; - number of cycles: 1 000; Remove abrasive dust after 500 cycles; - replace abrasive after every pretreatment.	
5.4	Repeated bending The pretreatment is carried out according to EN ISO 7854, method C, with the following deviations: - 2 test samples must be tested lengthways; - 2 test samples must be checked in the transverse direction; - the number of cycles must be 9,000.	PASS
5.5	Pretreatment with test samples must Pretreated with fuel and 2 test samples with oil. The test samples, which consist of the outer material layer and an applied waterproof layer, must be arranged in the test facility (see Figure B.1) in such a way that the surface to be tested is on top and comes into contact with the test medium. The test vessels must be made of materials that are resistant to the test medium. When closed, they must be tight enough to prevent evaporation into the surrounding atmosphere. Test media: 1) Liquid A: 100% volume fraction isooctane (2,2,4-trimethylpentane); according to ISO 1817; 2) Liquid F: Test oil: 80% by volume of straight-chain paraffins (C12 to C18) and 20% by volume of 1-methylnaphthalene according to ISO 1817; - amount of test medium: (50 ± 5) ml; - Test temperature: (20 ± 2) ° C; - Duration of action: 60 min. After the test samples have been taken from the test facility, the test medium still present on them must be carefully removed with absorbent filter paper. The test to determine the water resistance must be carried out immediately after the test medium has been removed and started within 10 minutes.	PASS
6	Procedure	-
6.1	Sampling The measurement samples must be taken from the garment or, if this is not possible, from the material or materials used in the finished garment. The size and shape must correspond to the respective test method.	PASS
6.2	General requirements and harmlessness	
6.2.1	General requirements The general requirements must be assessed by visual inspection and manually.	
6.2.2	Harmlessness The harmlessness of the protective clothing must be tested in accordance with EN ISO 13688 4.2.	PASS
6.3	WP watertightness From the outer material layer with liner or thermoliner, 5 test samples must be tested in accordance with EN 20811, Section 7, but with an increase in water pressure of (980 ± 50) Pa / min. The lowest individual value in Pa after penetration of the first drop of water must be recorded. From the outer material layer with seams, 5 test samples must be tested in accordance with EN 20811, Section 7, but with an increase in the water pressure of (980 ± 50) Pa / min. The lowest individual value in Pa after penetration of the first drop of water must be recorded.	PASS
6.4	Water vapor transmission resistance R_{et} 3 test samples must be tested according to EN ISO 11092.	PASS
6.5	Tensile Strength Testing (e.g. of coated fabrics) according to EN ISO 1421. If difficulties arise, e.g. B. Separation of edge threads, the test must be carried out according to the procedure specified in EN ISO 13934-1.	PASS
6.6	Resistance to tear propagation 10 test samples must be tested according to EN ISO 4674-1, method A. The test speed of the movable	PASS

	clamps is (100 ± 1) mm / min.	
6.7	Burst strength 5 test samples must be tested according to EN ISO 13938-1, section 8, or EN ISO 13938-2, section 8.	PASS
6.8	Dimensional changes after cleaning The requirements and test methods for dimensional changes of materials must correspond to EN ISO 13688, 5.3.	PASS
6.9	Testing of seam strength 5 test samples must be tested according to the principles in EN ISO 13935-2.	PASS
6.10	Testing the watertightness of a finished piece of clothing The finished garment must be tested in accordance with EN 14360. The test sample must be pretreated according to 6.11.2.	PASS
6.11	Aging	
6.11.1	General If a maximum number of cleaning cycles is specified in the manufacturer's instructions, the materials must meet the requirements of Table 2 after they have been subjected to the maximum number of cleaning cycles specified by the manufacturer. If the number of cleaning cycles has not been specified, the tests must be carried out after 5 cleaning cycles as specified in 5.2. This must be pointed out in the manufacturer's information brochure.	PASS
6.11.2	Cleaning of finished clothing items If the manufacturer tests the performance of the garment in the rain tower according to EN 14360 with a finished garment, the requirements specified in 4.9 must be met after it has been subjected to the maximum number of cleaning cycles specified by the manufacturer. If the number of cleaning cycles has not been specified, the tests must be carried out after 5 cleaning cycles as specified in 5.2. If the garments are washed with detergent, the remaining detergent must be removed by rinsing without detergent in 5 consecutive washing cycles. The manufacturer's information brochure must indicate the cleaning process used and the number of washing cycles with detergent.	PASS
7	Size Designation The size designation must correspond to EN ISO 13688, Section 6.	PASS
8	Labeling and care labels Labeling and care labeling must comply with EN ISO 13688, Section 7. The pictogram that indicates that protection against rain is required must correspond to Figure 1, with the corresponding performance classes added:  EN 343 X (water resistance) X (water vapor resistance) R (finished garment tested in the rain tower)	PASS
9	Manufacturer's information brochure The information brochure provided with the protective clothing must comply with EN ISO 13688 Section 8 and contain the following additional information: - product name; - if applicable, instructions on donning and doffing; - use and stowage of hoods if necessary; - test results for the testing of finished garments according to 4.9;	N/A

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- basic information on possible use and, if detailed information is available, reference is made to the source;
- if the garment has a water vapor resistance of class 1, the following warning must be given.

WARNING - Limited wearing time according to the following table: Ambient temperature

Ambient temperature(°C)	25	20	15	10	5
Wearing time (min)	60	75	100	240	--

Comment

"The stated maximum number of cleaning cycles is not the only factor that affects the life of the garment. The service life also depends on use, correct storage, etc. "

IMAGE*****END OF REPORT*****

EN 1186

Migration Test



Report No: 2021241217
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Sample Accepted on : 10.12.2021
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Total number of pages : 4 (pg)

Sample ID : YELLOW PER COATED RABIC

	TEST	METHOD	RESULT
*	Migration Test	EN 1186	PASS



Seal



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Environment

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X	Industrial environment
X	Medical environment

Objective And Scope

This method aims to describe the studies conducted to determine the total amount of substances that can pass from plastic materials in contact with food to juicy foods.

The principle of the method is based on the gravimetric quantitative determination of non-volatile substances in plastic materials, passing the materials into solutions by keeping them in aqueous food-like solutions (aqueous, acidic and alcoholic) and evaporating these solutions in the oven.

Chemical Substances and Solutions Used

- Similar A: Distilled or equivalent quality water
- Similar B: 3% Acetic acid aqueous solution (w / v)
- Similar C: Ethyl alcohol 10% aqueous solution (v / v)

Note: The concentration of the alcohol solution to be prepared for materials that come into contact with the sample with an alcohol degree of more than 10% is adjusted according to the alcohol level of the sample.

Treatment With Similar Foods

A total of 5 glass-capped glass tubes are taken, 3 for samples and 2 for the blind, and 100 ml $\pm$ 2 ml of the selected food simulants are put into each.

Tubes with closed lids are placed in an incubator and / or oven with temperature control and kept until they reach the target temperature.

Test materials are placed into the tubes that reach the target temperature and marked by closing their lids.

It should be ensured that the entire surface of the test materials is in contact with the simulant.

The liquid level inside the glass tubes is marked with a glass pen.

Glass tubes are placed back into the incubator / oven adjusted to the target temperature and left for the specified time.

At the end of the specified time, the glass tubes removed from the incubator / oven are checked according to the amount of flight of the previously marked food simulant.

If there is a fly 10 mm below the marked level like food, the analysis is repeated with a new sample.

If the flight level is above 10 mm, the sample is removed from the glass tube and the sample is filtered to allow the remaining food simulant to flow into the tube.

Exposure Time	Exposure Temperature	Similar Food
240 h (10 Day)	60 °C	Similar A
240 h (10 Day)	60 °C	Similar B
240 h (10 Day)	60 °C	Similar C

Calculation

The total migration amount in the analysis material is calculated in mg / dm² according to the formula below.

$$\frac{M = (m_a - m_b) \times 1000}{S}$$

M = Amount of substance passing through the sample surface to the simulant, in mg / dm²

m_a = residue calculated after blowing, in grams

m_b = residue after blow-up from blank run, in grams

S = Surface area of the material in contact with the simulant, in dm²

Specimen	Requirement	Value	Result
YELLOW PER COATED RABIC	< 10 mg/dm ²	< 5 mg/dm ²	PASS

IMAGE

END OF REPORT

EN 13034

**Protective Clothing Against
Liquid Chemicals**



Report No: 2022070139
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TEST	METHOD	SPECIMEN	RESULT
Protective clothing against liquid chemicals — Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment)	EN 13034 +A1 :2011	Yellow Overall Arg-2044-2	SEE TABLE



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X	Medical environment	

EN 13034+A1 :2011 : Protective clothing against liquid chemicals — Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB [6] equipment)

Scope

This standard specifies the minimum requirements for limited use and re-useable limited performance chemical protective clothing. Limited performance chemical protective clothing is intended for use in cases of a potential exposure to a light spray, liquid aerosols or low pressure, low volume splashes, against which a complete liquid permeation barrier (at the molecular level) is not required.

This standard covers both chemical protective suits (Type 6) and partial body protection (Type PB [6]).

The EN 13034+A1 :2011 standard refers to the requirements of the EN 14325 standard.

EN 14325 Protective Clothing - Performance Requirements And Tests Methods For Protective Clothing Against Infective Agents

Scope

This European Standard specifies the performance classification and test methods for materials used in chemical protective clothing, including gloves and footwear.

Conditioning

Unless otherwise indicated in the product standard, all specimens shall be conditioned by storage at $(20 \pm 2) ^\circ\text{C}$ and $(65 \pm 5) \%$ relative humidity for at least 24 h. If applicable, the tests shall be started within 5 min of removing the specimen from the conditioning atmosphere, unless otherwise indicated in the test method standard.

Mechanical and Flammability Requirements

Fabric Physical Test according to EN 14325		
Test Method	Result	EN Class
Abrasion Resistance EN530 Method 2	11500	6 of 6
Flex ISO 7854 Method B	1200	1 of 6
Tear Resistance EN ISO 9073-4 (MD)	305 N	6 of 6
Tear Resistance EN ISO 9073-4 (CD)	305 N	
Tensile Strength ISO 13934-1 (MD)	340 N	4 of 6
Tensile Strength ISO 13934-1 (CD)	342 N	4 of 6
Puncture Resistance EN 863	373 N	6 of 6
Spray-tight EN 14605	<3x	6
EN 25978 Resistance to Blocking	No blocking	

Class	Repellency Index
3	>90%
2	>80%
1	>70%

Resistance to flame	
Flame Exposure	EN Class
Specimen stops for 1 s in the flame	1 of 6

Chemical Requirements

If protection against chemicals is claimed, the materials shall be tested and classified in accordance with the test methods and performance classification system specified in the relevant clauses of pr EN 14325.

Fabric Chemical Test according to EN 14325		
Test Method	Normalised Breakthrough Time -Result	EN Class
Classification of permeation resistance by breakthrough time	240 min	5 of 6

Repellency to liquids

When tested in accordance with EN ISO 6530 for repellency to the liquid chemicals given in Table 1, the material shall be classified according to the levels of performance given in Table 2 for each chemical tested.

Table 1: List of reference chemicals for absorption, penetration and repellency testing

Chemical	Concentration Weight %	Temperature of Chemical °C (±2 °C)
H ₂ SO ₄	30 (aqueous)	20
NaOH	10 (aqueous)	20
o-Xylene	Undiluted	20
Butan-1-ol	Undiluted	20

Resistance to penetration by liquids

When tested in accordance with EN ISO 6530 for penetration by the liquid chemicals given in Table 1, the material shall be classified according to the levels of performance given in Table 3 for each chemical tested.

Table 3: Classification of resistance to penetration by liquids

Class	Penetration Index
3	<1 %
2	<5 %
1	<10%

Classification of repellency to liquids	
Repellency index	EN Class
% 100	3 of 3

Classification of resistance to penetration by liquids	
Penetration index	EN Class
% 0,0	3 of 3

Seam strength

Three samples of each type of sewing construction are tested and the arithmetic mean of each set of three samples is calculated. For classification purposes, the seam strength is reported regardless of where the sample is broken, ie regardless of whether the test sample containing the seam is broken in the material or seam.

Performance is classified according to sewing levels.

Classification of seam strength	
Seam strength	EN Class
265 N	4 of 6

Resistance to penetration by liquids in the form of a light spray (mist test)

A series of seven movements should be performed by a human test subject in protective clothing. The test subject is asked to select the appropriate size according to the manufacturer's information. The test should include three repetitions of the "seven moves" sequence and is done for each tool to be tested in the spray test. These;

- Movement 1 : kneel on both knees, lean forward and place both hands on the floor (45 ± 5) cm in front of the knees; crawl forward and backwards on hands and knees for a distance of three metres in each direction;
- Movement 2: climb a vertical ladder at least four steps, rungs to be as encountered on a typical ladder;

- Movement 3: position hands at chest level, palms out; reach directly overhead, interlock thumbs, extend arms fully upwards;
- Movement 4: kneel on right knee, place left foot on floor with left knee bent ($90 \pm 10^\circ$); touch thumb of right hand to toe of left shoe;
- Movement 5: extend arms fully in front of body, lock thumbs together, twist upper body ($90 \pm 10^\circ$) left and right;
- Movement 6: stand with feet shoulder width apart, arms at side; raise arms until they are parallel to the floor in front of the body; squat down as far as possible;
- Movement 7: kneel as in movement 4, left arm hanging loosely at side; raise arm fully overhead.

Conclusion	The sequence of movements in the test was performed in order. As a result, the test was successfully completed.
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The EN 13034 standard refers to the requirements of the ISO 17491-4-2008 standard.

ISO 17491-4-2008+A1-2016 (Protective clothing- Test methods for clothing providing protection against chemicals)

Principle of test method

An aqueous spray, containing a fluorescent or visible dye tracer, is directed under controlled conditions at the chemical protective clothing worn by a human test subject. Inspection of the inside surface of the clothing and the outside surface of the absorbent overall worn under the test garment allows any points of inward leakage to be identified.

Liquid for application in the form of a spray

A test liquid containing the following substances shall be used:

- water at (20 ± 2) °C;
- a water-soluble fluorescent or visible dye, e.g. methylblue (CAS number [28983-56-4]);
- a surfactant, e.g. Genapol LRO liquid (sodium lauryl ether sulphate, CAS number [009004-82-4]);
- a stabilizer for the dye (if needed), e.g. citric acid (CAS number [77-92-9], analytical grade).

The test liquid is prepared by dissolving the dye in water. Add surfactant and paint stabilizer (if necessary) in appropriate proportions to obtain a solution with suitable properties;

Method A: low-level spray test. This is applicable to clothing that covers the full body surface and is intended to be worn when there is a potential risk of exposure to small quantities of spray or accidental low-volume splashes of a liquid chemical.

Procedure

Position the test subject wearing the chemical protective clothing on the centre of the turntable and mark the position of the feet.

Apply the spray for 1 min to the test subject, whilst the turntable is rotated through 360°. During the spray period, the test subject shall alternately raise each foot approximately 20cm from the turntable (30±5) times and put it back in its original position. Mean while, the arms are kept straight and swung from the back to the front, above the head and back downwards, in unison with the leg movements.

Turn the turntable off and allow the clothing to drain for 2 min while the subject is still standing on the turntable.

Remove respirator and gloves first before opening the test garment. Remove the chemical protective clothing carefully in order to avoid contamination of the absorbent overall and examine the internal surface of the test garment for signs of penetration, paying special attention to openings, seams, closures and zippers. Mark them. Similarly, examine visually the external surface of the absorbent overall.

Conclusion	No leakage was observed.
-------------------	--------------------------

IMAGE

END OF REPORT

EN 13688
General Requirements
For Protective Clothing

5190243IB02

2022070132



Report No: 2022070132
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	TEST	METHOD	SPECIMEN	RESULT
*	General requirements for protective clothing	EN ISO 13688	Yellow Overall Arg- 2044-2	PASS



Seal

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Environment

The requirements and standards apply to equipment Intended for use in

X	Residential (domestic) environment
X	Commercial and light-industrial environment
X	Industrial environment
X	Medical environment

Scope

This International Standard specifies general performance requirements for ergonomics, innocuousness, size designation, ageing, compatibility and marking of protective clothing and the information to be supplied by the manufacturer with the protective clothing.

Selecting An Appropriate Type Of Test

Table 1 — Potential Types Of Test For Verifying Ergonomic Characteristics

Test type	Comment
Technical performance testing	Poor fit or other ergonomic inadequacies may impair the technical performance of the PPE. If any technical performance testing on human subjects is included, this may be sufficient.
Specific ergonomic testing	Where the impact of specific ergonomic characteristics is expected to have a critical effect on activity or task performance then testing for those characteristics should be specified.
Ergonomic wearer trials	Final verification of the suitability of the PPE should be established through appropriate wearer trials, e.g. as described in Annex A. These should reflect the overall impact of combinations of ergonomics characteristics on wearability and acceptability.

Test Result

Evaluation for Ergonomic Principles	Result
Standing, sitting, walking, running, climbing stairs;	PASS
Picking up a small object from the floor. Picking up a heavier object and carrying it some distance;	
Performing hand, arm and torso movements while standing or seated as at a machine;	
Holding specific equipment, and possibly simulating the operation of it;	

Leather — Chemical tests — Determination of pH DIN EN ISO 4045:2018

Pour (5.0 ± 0.1) g of test sample into the wide neck flask and add 100 ± 1 ml of water at $20 \pm 2^\circ\text{C}$ using the measuring cylinder. Shake well by hand for approximately 30 seconds so that the test amount is evenly moistened. Then agitate mechanically in the shaker for 6.0 to 6.5 hours. The move should be able to separate itself. The liquid phase of the extract should be poured and used for pH measurement.

Test Result

Sample	pH	Result
Yellow Overall Arg- 2044-2	9,45	PASS

Textiles - Determination Of pH Of Aqueous Extract ISO 3071:2020

Preparation of aqueous extract at room temperature;

Each measuring sample and 100 ml of extraction solution or potassium chloride solution should be transferred into a stoppered flask.

Shake the balloon well and then shake it mechanically for 2 hours to 5 minutes to record the temperature.

It should be calibrated at the temperature of the extract to be measured.

The first extract should be poured into a beaker, the glass electrode should be immediately immersed at least 10 mm and the contents should be gently mixed with a glass rod until the pH stabilizes.

The second extract should be poured into another beaker, the uncleaned glass electrode immediately immersed in the beaker to a depth of at least 10 mm and left there unmixed until the pH stabilizes. This value must be saved. The third extract should be poured into another beaker, the uncleaned glass electrode immediately immersed in the beaker to a depth of at least 10 mm and left there unmixed until the pH stabilizes. This value must be saved. Record the pH of the second and third extract as the first and second measurements.

Test Result

Sample	pH	Result
Yellow Overall Arg- 2044-2	8,04	PASS

Textiles - Methods For Determination Of Certain Aromatic Amines Derived From Azo Colorants — ISO 14362-1:2017

The colorant is first extracted from the fiber in the headspace under reflux using xylene. The extract is concentrated and transferred to the reaction vessel with sodium dithionite in a citrate buffered aqueous solution (pH = 6) at 70 °C and then with methanol for reduction. If the textile sample is not completely discolored after xylene extraction, a new test sample needs to be re-prepared and reprocessed with the method for non-extractable colorant grades. When applying the method for non-extractable grades of colorants, the test sample is treated with sodium dithionite in a citrate buffered aqueous solution (pH = 6) at 70 °C in a sealed container. After reduction, any amine released in the process is transferred to a t-butyl methyl ether phase by liquid-liquid extraction using diatomaceous earth columns. The T-butyl methyl ether extract is then concentrated and the residue is taken up in a suitable solvent for detection and determination of amines using chromatography.

Test Result

Amines	CAS No.	Result (mg/kg)		
		Body(navy)	Reflective (silver)	Main zipper tape(navy)
4-Aminobiphenyl	92-67-1	ND	ND	ND
Benzidine	92-87-5	ND	ND	ND
4-Chlor-o-toluidine	95-69-2	ND	ND	ND
2-Naphthylamine	91-59-8	ND	ND	ND

o-Aminoazotoluene	97-56-3	ND	ND	ND
5-nitro-o-toluidine / 2-Amino-4-nitrotoluene	99-55-8	ND	ND	ND
4-Chloroaniline	106-47-8	ND	ND	ND
4-methoxy-m-phenylenediamine / 2,4-Diaminoanisoole	615-05-4	ND	ND	ND
4,4'-Diaminodiphenylmethane	101-77-9	ND	ND	ND
3,3'-Dichlorobenzidine	91-94-1	ND	ND	ND
3,3'-Dimethoxybenzidine	119-90-4	ND	ND	ND
3,3'-Dimethylbenzidine	119-93-7	ND	ND	ND
4,4'-methylenedi-o-toluidine / 3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	ND	ND	ND
p-Cresidine	120-71-8	ND	ND	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND	ND	ND
4,4'-Oxydianiline	101-80-4	ND	ND	ND
4,4'-Thiodianiline	139-65-1	ND	ND	ND
o-Toluidine	95-53-4	ND	ND	ND
4-methyl-m-phenylenediamine / 2,4-Toluylendiamine	95-80-7	ND	ND	ND
2,4,5-Trimethylaniline	137-17-7	ND	ND	ND
4-aminoazobenzene	60-09-3	ND	ND	ND
O-Anisidine	90-04-0	ND	ND	ND
Conclusion		PASS	PASS	PASS

ND = Not Detected(<MDL)

MDL(Method Detection Limit)= 5 mg/kg (for individual compound)

Nickel Release Test

It is stated that products with a nickel release of 0.88 µg/cm²/week and higher in the TS EN 1811+A1: 2015 standard, which determines the reference test method for nickel released in products that can come into direct and long-term skin contact, will be inappropriate.

Test Result

Sample	Limit	Result	Evaluation
Yellow Overall Arg-2044-2	< 0,5µg/cm ² /hafta	< 0,5µg/cm ² /hafta	PASS

Leather — Chemical Tests — Determination Of Chromium(VI) Content ISO 17075:2017

As a result of the researches, it has been discovered that the chrome VI substance can be fixed in the primer paint. In this case, it cannot enter our body by breathing and does not pose a health hazard. However, if chromium VI separates from the paint in some way (by grinding, sharpening or cutting), it can enter our body through breathing, ingesting particles and through skin. It is a carcinogenic substance and irritates the skin. Therefore, it is banned in many countries.

- 10 ml of sample is taken into the sample container or test tube.
- Add 1 drop of Cr+6 A-Reagent and mix. It is waited for 3 minutes.
- Add 1/4 microfold Cr+6 B-Powder.
- A comparison with the color scale is made after 3 minutes.

Measuring Range = 0,2 - 0,5 - 1 - 1,75 - 2,5 - 5 mg/L

Dilution Factor x Scale Value (mg/L) = Total Chrome (mg/L)

Test Result

Specimen	Chromium +6 (mg/L)	Result
Yellow Overall Arg- 2044-2	<0,3	PASS

Textiles — Professional Care, Drycleaning And Wetcleaning Of Fabrics And Garments — Part 1: Assessment Of Performance After Cleaning And Finishing ISO 3175:2018

Textile fabrics should be cut into test pieces preferably not smaller than 500 mm x 500 mm and sewn on all sides with polyester thread to prevent fraying.

The conditioned load is placed in the machine and a lot of distilled perchlorethylene containing 1 g/l sorbitan monooleate is added until the liquor ratio calculated from the solvent volume in the drum is 5.5 l per kg. load. During the cleaning process, the temperature of the solvent is kept at (30 ± 3) °C.

A fresh emulsion is prepared by mixing 10 ml of sorbitan monooleate with 30 ml of perchlorethylene per kilogram of load and adding 20 ml of water with stirring. This corresponds to 2% water calculated on the mass of the load. If the cleaning enhancer (detergent) is not allowed to be mixed with perchlorethylene outside the machine, a mixture of cleaning enhancer and water can be added directly to the machine. The machine is started by closing the filter circuit and 2 minutes after the drum inlet is closed, the emulsion is slowly poured into the machine within (30 ± 5) s between the inner and outer drum below the solvent level.

The machine is turned on and allowed to run for 15 minutes. The filter circuit is not open during the test.

The solvent is pumped out and the remaining solvent is spun off the load by centrifugation for 2 minutes (at least 1 minute at full rotation speed).

Pure anhydrous solvent is added in the same liquor ratio and the items to be cleaned are rinsed for 5 minutes. The solvent is pumped and spun again for a period of 3 minutes (at least 2 minutes at full spin).

The load is machine air dried for the required time, preferably using an automatic monitoring device to ensure it is solvent free. After drying, air at ambient temperature is blown from the rotating load for at least 5 minutes.

Immediately afterwards, measurement samples are taken from the machine. At least 30 minutes before finishing, the garment is hung and test samples made of textile fabrics are placed on a flat surface.

Textiles - Determination Of Dimensional Change In Washing And Drying - ISO 5077:2009
Test Result

Dimensional Change & Domestic Washing & Drying (5 cycle)		
	Dimensional Change%	RESULT
Length	<%3	PASS
Width	<%3	PASS

Test Result

Examples Of Size Designation		MEASUREMENT	Result
Chest	84-96 (cm)	96 (cm)	PASS
Head to Legg	100-176 (cm)	122 (cm)	PASS
Waist	72-88 (cm)	74 (cm)	PASS
Arm	57 (cm)	57 (cm)	PASS

Sample Image


*** End of Report ***

EN 14325:2018

**Performance requirements
and tests methods for
protective clothing against
infective agents**

Customer name: GENTUĞ TEKSTİL ÜRÜNLERİ SAN. VE TİC.AŞ.
Address: KERESTECİLER SİT.SAVAŞ CAD. SÖĞÜT SOKAK NO:1 K:2
MERTER/İSTANBUL
Buyer name: -
Contact Person: HASAN ERGENEKONLU
Order No: -
Article No: -
Name and identity of test item: Yellow overalls (Claimed to be :YELLOW/ARG_2044-2)
The date of receipt of test item: 09.12.2021
Re-submitted/re-confirmation date: 24.12.2021
Date of test: 20.12.2021-05.01.2022
Remarks: -
Sampling: The results given in this report belong to the received sample by vendor.
End-Use: -
Care Label: Not Specified
Number of pages of the report: 8



Date
05.01.2022

Customer Representative
Yeşim ŞAHİN

Head of Testing Laboratory
Sevim A. R. N. N. N.
05.01.2022

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REQUIRED TESTS	EVALUATION	COMMENTS
PHYSICAL PROPERTIES TESTS		
General and Pre-test clause 4.3.4.1(Seven Movements)	P	
Resistance to the penetration of liquids (Spray Test)Type 4 clause 4.3.4.2 ⁽¹⁾	P	
Resistance to the penetration of liquids (Jet Test)Type 3 clause 4.3.4.3 ⁽²⁾	P	
Surface Resistivity ⁽³⁾ (4)	-	
Flammability ⁽³⁾ (4)	-	
P: Pass F: Fail R: Refer to retailer technologist Tests were classified according to BS EN 14325:2018 (*) BS EN 14126 :2003 Protective clothing —Performance requirements and tests methods for protective clothing against infective agents Tests were classified according to EN 14605+A1:2009(*) Protective clothing against liquid chemicals – performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4]) (2) EN ISO 17491-3 Protective clothing — Test methods for clothing providing protection against chemicals — Part 3: Determination of resistance to penetration by a jet of liquid (jet test) (1) EN ISO 17491-4 Protective clothing — Test methods for clothing providing protection against chemicals — Part 4: Determination of resistance to penetration by a spray of liquid (spray test) (3) No requirement was given (4) This report was reissued to add this test result		

REMARK: Original samples are kept for 3 months and all technical records are kept for 5 years unless otherwise specified. If requested, measurement uncertainty will be reported. But unless otherwise specified, measurement uncertainty is not considered while stating compliance with specification or limit values. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %. The declaration of conformity was given in accordance with the Simple Acceptance Decision Rule. Tests marked (*) in this report are not included in the accreditation schedule.

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TEST RESULT

EN 14605+A1:2009 Protective clothing against liquid chemicals – performance requirements for clothing with liquid-tight (Type 3) or spray-tight (Type 4) connections, including items providing protection to parts of the body only (Types PB [3] and PB [4])(*)

Sample 1& Sample 2 & Sample3 (Performance requirements for clothing with liquid-tight (Type 3)

The test was performed with three repetitions, at moderate speed, of the "seven movements" sequence described below

Table 1

Pre-experiment 1	Person
Pre-experiment 2	Height: 168 cm
Pre-experiment 3	Weight: 82 kg

Clause	Requirement	Pre-Experiment	
		PASS	FAIL
4.3.4.1	Starting from a standing position in each case, carry out the following movement sequence	√	
Movement 1	Kneel on both knees, lean forward and place both hands on the floor (45 ± 5) cm in front of the knees; crawl forward and backwards on hands and knees for a distance of three metres in each direction	√	
Movement 2	Climb a vertical ladder at least four steps, rungs to be as encountered on a typical ladder;	√	
Movement 3	Position hands at chest level, palms out; reach directly overhead, interlock thumbs, extend arms fully upwards;	√	
Movement 4	Kneel on right knee, place left foot on floor with left knee bent (90 ± 10) °; touch thumb of right hand to toe of left shoe. Repeat movement with alternate posture, i.e. by kneeling on left knee and placing the right foot on the floor with knee bent at 90°.	√	
Movement 5	Extend arms fully in front of body, lock thumbs together, twist upper body (90 ± 10) ° left and right.	√	
Movement 6	Stand with feet shoulder width apart, arms at side; raise arms until they are parallel to the floor in front of the body; squat down.	√	
Movement 7	Kneel as in movement 4, left arm hanging loosely at side; raise arm fully overhead. Repeat movement with alternate posture by alternating arms.	√	

Samples are received in the form of plastic packing by the company. For this reason, no additional cleaning was performed with the suggestion of the company

All products are conditioned at 22 °C 65% Rh values for 24 hours.

EN ISO 17491-4 Protective clothing — Test methods for clothing providing protection against chemicals — Part 4: Determination of resistance to penetration by a spray of liquid (spray test)(*)

Clause	Requirement	Result-Remark	Verdict
4.3.4	Resistance to the penetration of liquids		
4.3.4.1	General and Pre-test		
	Pre-test	-There are no preventing factors. -No tearing or deformation was observed in the samples. The details are given in table 1.	PASS
4.3.4.2	Resistance to the penetration of liquids (Spray Test)	Type 4	
EN ISO 17491-4 Article 9	Remove respirator and gloves first before opening the test garment. Remove the chemical protective clothing carefully in order to avoid contamination of the absorbent overall and examine the internal surface of the test garment for signs of penetration, paying special attention to openings, seams, closures and zippers. Mark them.	Three test clothes were dressed tested together with the White absorbent underwear.	PASS
Clause 4.3.3.2	Any underwear, of each garment suit. The total stain area on it should not be more than three times the calibrated total stain area.	Calibration stain area: measured as 3.45 cm ² . Sum of stains on the inner White garment given in table 2	PASS

EN ISO 17491-3 Protective clothing — Test methods for clothing providing protection against chemicals — Part 3: Determination of resistance to penetration by a jet of liquid (jet test)(*)

4.3.4.2	Resistance to the penetration of liquids (Jet Test)	Type 3	
EN ISO 17491-3 Article 9	Three new suits, pre-conditioned in accordance with 4.3.2, shall be tested in accordance with EN 463. If applicable, the suits shall be worn with the additional personal protective equipment specified in the manufacturer's instructions.	Three test clothes were dressed tested together with the White absorbent underwear.	PASS
	All suits shall pass the test, i.e. the total stain area on any one undergarment of each suit shall be less than or equal to three times the total calibrated stain area.	Sum of stains on the inner White garment given in table 2	PASS

TEST RESULTS

Table 2

SPREY EXPERIENCE						
	UPPER BODY			LOWER BODY		SUM
	Chest (cm ²)	Shoulder (cm ²)	Back (cm ²)	Front (cm ²)	Back (cm ²)	
Sample 1	-	-	-	-	-	0
Sample 2	-	-	-	-	-	0
Sample 3	-	-	-	-	-	0

Table 3

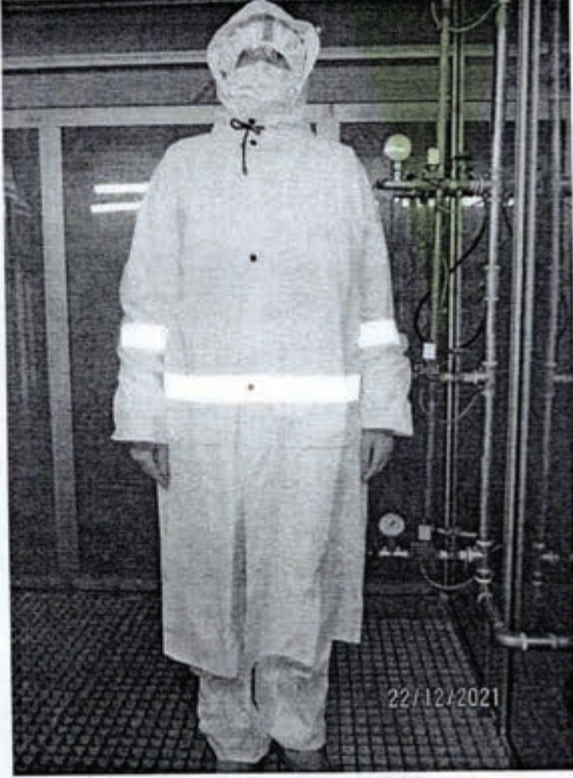
Resistance to the penetration of liquits (Jet Test) Experience						
	UPPER BODY			LOWER BODY		SUM
	Chest (cm ²)	Shoulder (cm ²)	Back (cm ²)	Front (cm ²)	Back (cm ²)	
Sample 1	-	-	-	-	-	0
Sample 2	-	-	-	-	-	0
Sample 3	-	-	-	-	-	0

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Gen.f136-2/03



TEST RESULTS

SURFACE RESISTIVITY; EN 1149-1:2006

Ohm meter (METRISO 3000) was used.

Original sample was tested as the client's request

Pre-Treatment

Atmosphere for conditioning and testing

(23± 1)°C, (25± 5)%RH

Conditioning time

≥ 24 hours

Applied voltage

100 Volt

Number of samples tested

5

<u>Measurement</u>	<u>Surface Resistance</u>	<u>RESULT</u> <u>Surface Resistivity</u>	<u>REQUIREMENT</u>
1	1,14 x 10 ¹² Ohms	0,22 x 10 ¹⁴ Ohms	-
2	1,10 x 10 ¹² Ohms	0,21 x 10 ¹⁴ Ohms	
3	1,10 x 10 ¹² Ohms	0,21 x 10 ¹⁴ Ohms	
4	1,16 x 10 ¹² Ohms	0,22 x 10 ¹⁴ Ohms	
5	1,36 x 10 ¹² Ohms	0,26 x 10 ¹⁴ Ohms	
Geometrical Mean	1,16 x 10 ¹² Ohms	0,22 x 10 ¹⁴ Ohms	

The resistivity is calculated by: $\rho = k \times R$, and $k = 19.8$

TEST RESULTS

FLAMMABILITY; ISO 14116:2015(*)

The test method as described in ISO 15025:2000, Procedure A(surface ignition) was used.

Applied cleaning procedure

Conditioning

Test Atmosphere

Face Tested

Sample size

Flame height

Gas type

Flame Application Angle

Flame Application Time

65±5 % RH,20±2°C/24 h

10°C-30°C / 15-80 % RH, 0.2 m/sec airflow test cabinet

Front face

200 x 160 mm (length x width)

40± 2 mm

Butane

90°- Surface ignition

10 sec

"The following test results relate only to the ignitability of the combinations of materials under the particular conditions of test ; they are not intended as a means of assessing the full potential fire hazard of the materials in use."

	1	2	3	4	5	6
	^	^	^	>	>	>
Afterflame Time (sec)	-	-	7 sn	-	-	-
Afterglow Time (sec)	-	-	-	-	-	-
Flaming or Molten Debris	N	N	N	N	N	N
Flame to Edge	N	N	N	N	N	N
Hole to Edge	N	N	N	N	N	N
Hole Formed	Y	Y	Y	Y	Y	Y
Ignition of Filter Paper	N	N	N	N	N	N
RESULT	Index 1					

"^": Length Direction

">": Width Direction

Y: Observed

N: Not observed

Requirements:

Index 1

Properties	Requirement
Flame spread	No specimen shall permit any part of the lowest boundary of any flame or the boundary of any hole to reach the upper or either vertical edge.
Flaming debris	No specimen shall give flaming or molten debris.
Afterglow	Afterglow time shall be ≤ 2 s. A glowing inside the charred area is defined in ISO 15025 as afterglow without combustion and, for the purpose of this clause, shall not be regarded as afterglow.



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