Functional wear for CPS

Tested & recommended
for TESIMAX
chemical protective suits

Change of clothing for breathing equipment wearers – coverall

Collection: Flame-retardant
Shell fabric: Bizflame Work 99% cotton, 1% carbon fibre

Product information
This coverall is perfect for particularly hot days and for the demands of the offshore industry. Made from an innovative lightweight, flame-retardant twill fabric.

Bizflame™ Work
Bizflame™ Work has been developed and designed using the highly innovative flame-retardant Bizflame™ Work fabric, which also has antistatic properties. Lightweight protection certified to international standards. Brass zips and triple-stitched seams ensure durability.

Flame-retardant
This industry-leading collection offers multi-standard protection for hazardous areas. These state-of-the-art products are the result of many years of experience, cutting-edge technology and market research. The company's commitment to the wearer's health, safety and comfort is evident in its wide range of products, which are suitable for all weather conditions and applications.

Functions
- Lightweight
- Protection against radiant and contact heat
- Ruler pocket
- Two back patch pockets
- Durable, sturdy brass zip
- Elasticated back pleat for greater freedom of movement
- Velcro closures at the cuffs for a secure fit
- Sleeve pocket
- 10 pockets for ample storage
- Knee-pad pockets with height adjustment, offering two positioning options
- Two-way zip for quick and easy access

Standards
EN ISO 11612 (A1+A2, B1, C1, E2,F1)
EN ISO 11611 Class 1 (A1+A2)
EN 1149-5
IEC 61482-2, IEC 61482-1-1 (ELIM 9 CAL/CM^2, ATPV 9.7 CAL/CM^2)
EN 17353 Type B2
ASTM F1959/F1959M-12 (ATPV = 9.1cal/cm^2)

Sizes
S to XL
Order no.: 4000-905*

Change of clothing for breathing equipment wearers – coverall

Collection: Flame-retardant
Shell fabric: Bizflame Wildland Fire 99% cotton, 1% carbon fibre

Product information
The FR98 coverall is the perfect change of clothing at the scene. This coverall offers a practical solution following an operation during which protective clothing has become soiled, soaked or contaminated with hazardous substances. Contaminated clothing can be removed and replaced immediately, ensuring that the emergency responder remains fully kitted out and clearly identifiable. A change of clothes also ensures that on the way back, you are not exposed to the cold or face any health risks from soiled protective clothing.

BIZFLAME FR98 COVERALL
- DESCRIPTION / SPECIFICATIONS
This change of clothing is used by fire brigades to ensure that breathing apparatus wearers are properly kitted out after an operation in a chemical protective suit. It allows personnel to change clothes safely on site for their return to base and ensures that they remain clearly visible – even in the dark. A shoulder reflex stripe improves visibility, also from above. The high collar protects the entire neck area and is designed to be compatible with all standard helmets.
The integrated radio pocket fits all sizes of radio. The sleeves feature knitted cuffs and an adjustable Velcro fastening, preventing dirt from getting in – particularly important when working overhead.

Flame-retardant
This industry-leading collection offers multi-standard protection for hazardous areas. These state-of-the-art products are the result of many years of experience, cutting-edge technology and market research. .

Functions
- Protects against radiant and convective heat
- Yellow/silver reflex for increased visibility
- Radio pocket designed to fit all sizes of radio
- Easy access cargo pockets
- Double-layer reinforced knee protection for extra strength and durability
- Throat tab on front neck
- Ribbed cuffs for added comfort
- Twin-stitched seams for extra durability
- 40+ UPF rated fabric to block 98% of UV rays
- 3 pockets for ample storage
- Premium sew on flame resistant reflective tape

Standards
EN ISO 11612 (A1+A2, B1, C1)
EN 15614
EN 1149-5

Sizes
S to 3XL
Order no.: 4000-902*

Phase-change undersuit

The phase-change thermal undersuit (with Outlast® technology) has been developed specially as insulating underclothing for the TESIMAX chemical protective suits.

Not too hot, not too cold: just right
Temperature-regulating Outlast® materials provide proactive climate management for increased comfort.

The sleeves are seamed and the trouser legs have elasticated foot loops. With its front zip, the suit is easy to put on and take off. Banded collar in neck area and shoulder, elbow and knee protection.

Tested in outer space – now here on earth
Outlast® is the only phase-change material (PCM) that has been awarded the Certified Space Technology™ seal. This technology was originally developed for NASA and is continually tested for safety and efficiency in a wide range of applications in renowned brands.

Colour: ☐ black
Size: M, L and XL available
(specify size when ordering)

Order no.: 0650-229

FUNCTIONAL WEAR for protective suits

THERMO-FLEECE undersuit

The TESIMAX thermo undersuit has been developed mainly as insulating underwear for the SILVERFLASH® protective suit with para-aramid.

Made from a flame-retardant fleece fabric with a high LOI (limited oxygen index) this overall is highly flame-retardant and features additional fabric reinforcement in the knee, elbow and shoulder areas.

The fleece material ensures wearing comfort and provides maximum thermal insulation. The sleeves are seamed and the trouser legs have elasticated foot loops. With its front zip, the suit is easy to put on and take off.

Tested to EN ISO 11612:2008.

Colour: ☐ navy blue
Size: M, L and XL available
(specify size when ordering)

Order no.: 0650-228

TOP FACT:
- The MAX FR has achieved the required compatibility in accordance with DGUV 205-014 and has been tested in accordance with Module C2 in conjunction with the TESIMAX chemical protective suit.
- Other coveralls have not been tested and approved.

FUNCTIONAL WEAR for protective suits

FLAME-RETARDANT MAX FR UNDERSUIT

VERSION
- Pocket fasteners/flaps without exposed press studs or metal parts
- High collar with velcro fastener
- Sewn on hood with drawstring
- Concealed press stud placket (no zip)
- OEKO-TEX Standard 100 Class II for direct skin contact
- This coverall has been tested and approved in accordance with EN 11612.
- Inherently flame-retardant in accordance with EN 11612 A1+A2, B1, C1 and F1 (PPE testing)

EQUIPMENT
Flame retardant undersuit as opaque workwear and for sweat wicking under the chemical protective suit.

Properties
CE approval
The fabric meets the following requirements:
- Heat resistance in accordance with ISO 17493:2016: passed (180 °C)
- Antistatic and conductive properties in accordance with EN 1149-3
- Arc flash protection in accordance with IEC 61482-2, APC 1
- Resistance to liquid chemicals (limited splash resistance) in accordance with EN 13034
- Heat abrasion resistance in accordance with ISO 12947-2, 12 kPa, > 100,000 cycles
- Tear propagation resistance in accordance with EN ISO 13937-2, warp and weft > 70 N/67 N
- Maximum tensile breaking strength in accordance with EN ISO 13934-1, warp and weft > 1600 N/1300 N
- FC waterproofing (CF6); it is dirt- and liquid-repellent and must be re-impregnated after washing!
- Shrinkage requirement of less than 3% after 5 standard ISO wash cycles
- OEKO-TEX Standard 100 Class II for direct skin contact

ORDERING DATA
Sizes: S to XXL
Colour: ■ navy blue

Please refer to the washing and care information on the product label.

Order no.: 0650-240

MAX BW HYGIENE FUNCTIONAL UNDERSUIT

The MAX BW undersuit is used as an operational hygiene undersuit.
Area of application: Industry, fire brigades, rescue services, police and military units.
The undersuit is comfortable to wear thanks to its sustainable natural fibres and has optimum moisture management. The fabric has odour-inhibiting and antibacterial properties and exhibits extremely good colour stability even after many washes.

Material:
- 100% natural fibre top cotton (fabric weight: approx. 175 g/m²)
- Optimised for a comfortable feel
- The fabric fulfils the OEKO-TEX Standard 100

Fabric properties:
- The material is 100% recyclable, making for sustainable PPE.
- Washable at up to 60 °C
- Suitable for tumble drying
- Elastic natural fibre for an optimised fit

Features:
- Integrated double zip fastener
- Two breast pockets
- Integrated thumb loops
- Foot strap: Elasticated band
- Sizes: S to XXL
- Colour: black

Warranty: 2 years

Service life: 10 years if stored under optimum conditions according to usage instructions.

Please refer to the washing and care information on the product label.

Packaging: Recyclable packaging

SPECIAL EQUIPMENT OPTIONS for orders of 1000 items or more

TECHNICAL UPGRADES
Together with our supplier HeiQ, we can implement technical upgrades of undersuits for orders of 1000 items or more. For prices please enquire.
https://www.heiq.ch/produkte/textiltechnologien

LOGISTICS AND ID UPGRADES
With our partner Thermo-Tex, we offer complete process optimisation for textile logistics and identification. We can equip our textile products with RFID technology, labels or barcodes. Link: https://www.thermo-tex.de

VISUAL UPGRADES
Embroidered, transfer and screen printed applications are available for all TESIAMX textile products.

Interested? Get in touch with us!

Storage, maintenance and shelf life

We recommend storing garments that are not in use in a well-ventilated, dry place out of direct sunlight. If possible, transport the product in its original packaging to protect it from moisture and extreme temperatures. With intensive use, the service life may be shorter than the warranty period.

The product does not contain substances in concentrations known or suspected to affect the hygiene or health of the user. However, skin irritation cannot be ruled out in sensitive persons, in which case these garments should no longer be worn.

There are no accessories or spare parts for these garments. The service life depends on the level of usage and the amount of wear resulting from the usage conditions. Improper storage conditions, incorrect maintenance and care also reduce the service life.

REAL-REUSABLE

FUNCTIONAL WEAR for protective suits

Tel.: +49 7234 948590 • www.tesimax.de P. 221

Cooling vest

Cooling vest description

THE IMPORTANCE OF REGENERATION
The issue of regeneration is of great importance in firefighting operations. Under the sometimes extreme working conditions, such as when using CPS, it is important to regenerate quickly and completely. This is all the more important as the recommended regeneration times are often not possible to due staff shortages.

A PCS cooling suit offers a simple, fast and effective means of regeneration that can be used any time, anywhere without complex logistics.

INSPIRED BY NATURE
The product reacts similarly to the human body, which regulates its temperature through the cooling effect of sweat evaporating on the skin. The high-tech fleece can be quickly charged with water which it stores and releases through evaporation to keep you cool.

You also remain dry and save energy, as the products “sweat” for you.
This enhances wellbeing and leaves you with more energy and therefore greater effectiveness in your task.
For better performance. It also protects your health under hot working conditions, optimises your energy household and allows you to be more efficient.

EASY HANDLING
- Charging with approx. 0.7 to 1 litre of cold water (from tap, washbasin or shower) takes just 5 to 10 seconds.
- Squeeze gently and roll in a towel
- Cooling can begin
- The cooling effect lasts up to 20 hours

Order no.: 0650-230
Ask us about further products.

PERSONAL COOLING SYSTEM
- Better performance through less heat
- Fewer health risks
- Optimal regeneration during breaks and after work

Flame retardant underwear

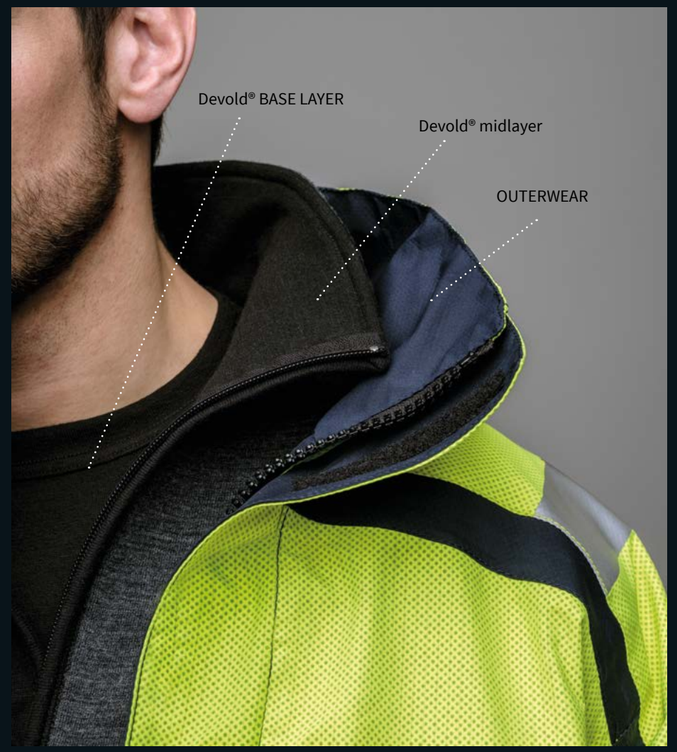
Devold® Safe
FLAME RETARDANT WOOL – LENZING BLEND

Flame retardant wool blend underwear – versatile wool underwear that offers protection from heat and flame. Safe is made of LENZING FR®
and merino wool and is reinforced with polyamide. Safe is the lightest flame retardant underwear from the Devold® Protection collection.

Because it is knitted in a ribbed structure, the underwear is highly elastic and follows your body movements. Safe contains a high percentage of merino wool to keep your body dry and comfortable even during strenuous work. The Balaclava 817 model is EN 13911 certified.

NOTE:
- Please enquire for the complete range.
- Shirts, long sleeves and flame-retardant hoods
- ALL WITH INTEGRATED PARTICLE PROTECTION! Without membrane!

- Further X-WEAR and Devold products available from TESIMAX.
- The antistatic Devold Shield line is particularly suitable for TESIMAX chemical protective suits due to its special fabric properties.



Devold® BASE LAYER

The base layer should be flame retardant to limit burns. It should also absorb and transport moisture to provide better comfort. Moisture wicking is also important to prevent scalding from radiant heat, arcing or other
situations where this may occur. To provide better comfort, the underwear should dry on your body.

Devold® MIDLAYER

The midlayer should be flame retardant, have good insulating properties and good moisture transport properties. The insulating properties are important to
reduce the risk of heat penetration in firefighting operations. The midlayer should also have a looser fit than the base layer to allow more air circulation and therefore better moisture wicking.

TESIMAX OUTERWEAR

This layer should be flame retardant and provide total protection in combination with the other layers. The outer layer should also be weather and wind resistant
and have sufficient ventilation and water-repellent properties to keep moisture out.

Top accessories (personal protective equipment) available on request.

Contact TESIMAX for an attractive special offer.

CERTIFIED					
PRODUCT STANDARDS	**EN ISO 13688 2013**	**Flame-retardant EN ISO 14116: 2008**	**Flame-retardant EN ISO 14116: 2015**	**Flame-retardant EN ISO 11612: 2008**	**Flame-retardant EN ISO 11612: 2015**
Safe Safe mod. 144,146, 210, 216 Safe mod. 817 Safe bra	x x x x		 x Index 3		 A1 + A2 B1 C1 A1 + A2 B1 C1
Total Total mod. 145, 210 Total mod. 817	x x		 Index 3		A1 + A2 B1 C1 A1 + A2 B1 C1
Spirit Spirit mod. 144, 146, 216, 219 Spirit mod. 817 Spirit mod. 821	x x		 Index 3		A1 + A2 B1 C1 A1 + A2 B1 C1 A1 B1 C1
PIQUE	x		Index 3		
POWER					A1 + A2 B1 C1
SPACER	x				A1 + A2 B2 C2
METAL	x				A1 + A2 B1 C1
SHIELD					A1 B1 C2
THERMAL COLLAR THERMAL THERMAL W. ANTISTAT	 x x				 A1 + A2 B2 C2 A1 B1 C1

CERTIFIED						
Arc EN 61482-1/-2: 2007	**Arc EN 61482-1/-2: 2009**	**Antistatic EN 1149: 2008**	**Antistatic EN 1149: 2018**	**EN 13911: 2004**	**EN 13911: 2017**	**OEKO-TEX®:**
Class 1	 Class 1		x x x x		 x	x x
	Class 1 Class 1					
	Class 1 Class 1					x x x x
	Class 1					x
	Class 1					
	Class 1	x				x
	Class 1					
	 Class 1 Class 1	x x x				

EN APPROVALS

CE MARKING
These garments comply with the requirements of Regulation (EU) 2016/425.

EN ISO 13688:2013 (prev. EN 340:2004)
Protective clothing - General requirements.

EN ISO 14116:2015 Protection against flame.
Index 1 of limited flame propagation:
Index 1 (flame spread, flaming debris and after-glow properties)
Index 2 (as Index 1 plus hole formation properties)
Index 3 (as index 2 plus after-flame properties)

EN ISO 11612:2008/2015 A, B, C, D (E & F)
Clothing to protect against heat and flame.
A = Limited flame propagation.
A1: Surface ignition. A2: Edge ignition.
B = Material fulfils protection requirement against contact with flame.
Level B1: 4–10 s, B2: 10–20 s
C = Material fulfils protection requirement against radiant heat.
Level C1: 7–20 s, C2: 20–50 s, C3: 50–95 s, C4: >95 seconds.
D = Material fulfils required resistance to liquid aluminium.

Level D1: 100–200 grams, D2: 200–350 grams, D3: >350 grams.

EN 1149-5:2008/2018
Protective clothing - Electrostatic properties -
Part 5: Material performance and design requirements

EN APPROVALS

IEC 61482-2:2009
Live working - Protective clothing against the thermal hazards of an electric arc. Part 1-2: Test methods - Method 2: Determination of arc protection class of material and clothing using a constrained and directed arc (box test). Test method: EN 61482-1-1:2009. This method tests the Arc Thermal Performance Value (ATPV) – the energy applied to a material or multi-layered material assemblage that results in a 50 percent probability of sufficient heat transfer through the test specimen to cause a second-degree skin burn based on the Stoll curve without causing the fabric to break open.

Energy breakopen threshold – EBT50
- Incident energy on a fabric or material that results in a 50 percent probability of a heat transfer through the specimen that causes it to break open.

Test method: EN 61482-1-2:2007 “box test”
Class 1 (4 kA)
Class 2 (7 kA)
Arc duration: 500 ms
Frequency: 50 Hz

EN 13911:2004/2017
Protective clothing for firefighters - fire hoods. Against heat and flames as well as thermal effects of an electric arc.

CE MARKING

Devold protective equipment is manufactured and tested in accordance with standards based on European Directive 89/686/EEC and is approved in accordance with CE marking regulations.

The CE marking refers to a safety level of the product. European Directive 89/686/EEC is legally binding and applies to personal protective equipment (PPE) in the European member states. This Directive stipulates as a basic requirement for design and manufacture that PPE must be used to ensure safe working conditions.

Devold protective clothing is designed to prevent accidents and injuries on exposure to cold, heat, flame, the thermal hazard of electric arcs and electrostatic hazards. These garments comply with the requirements of Directive 89/686/EEC for reference standards. Refer to the CE label inside the garment to confirm which of the applicable standards the garment is certified to.

The CE label also lists washing instructions, fabric content, size and model number. We draw your attention to the mandatory user information that must accompany all certified garments. You can also find this information in the product descriptions in this catalogue and at www.devold.com.

DEVOLD®
NORWAY 1853

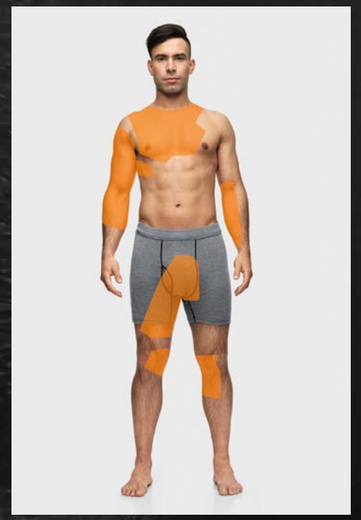
THE PYROMAN TEST

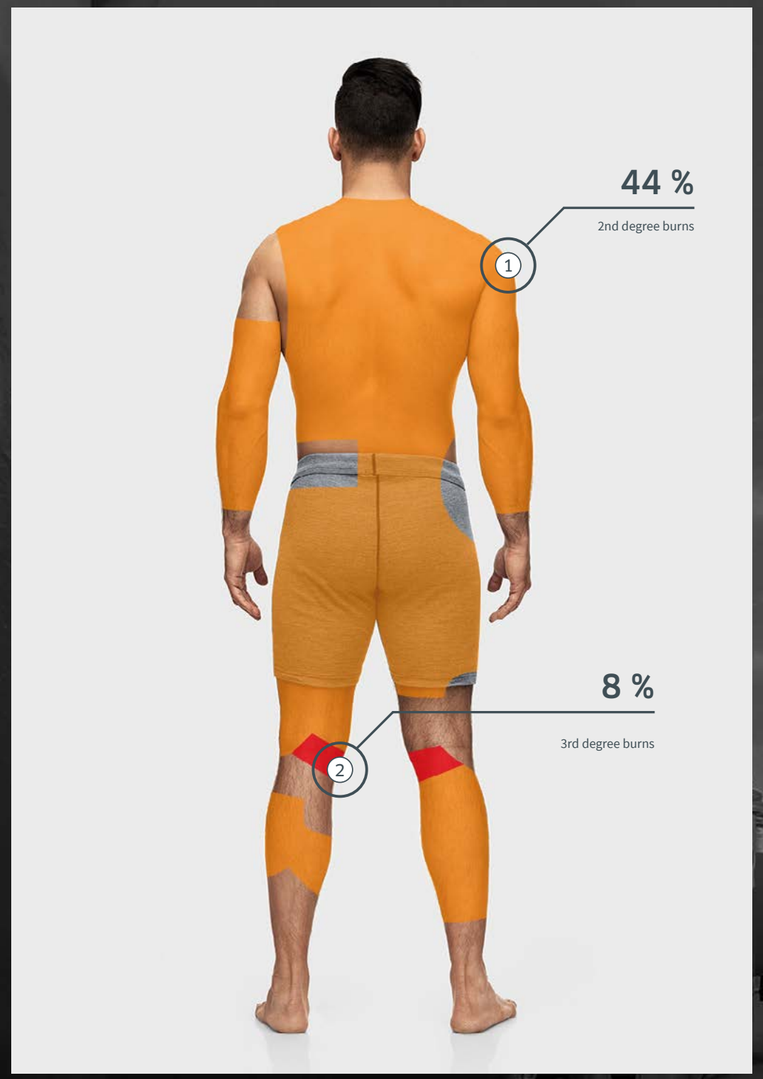
52 %

WITH NORMAL COTTON UNDERWEAR

TOTAL BURNS

COTTON UNDERWEAR





This test is conducted by an independent laboratory at North Carolina State University and tests the degree of burn injury in a flashover. The result of this test indicates the overall level of injury (2nd or 3rd degree burn). We performed the Pyroman test with both flame retardant underwear and normal cotton underwear under a flame retardant suit.

	MEASURAND	RESULT
1	2nd degree burns	44%
2	3rd degree burns	8 %
3	Total burns	53%

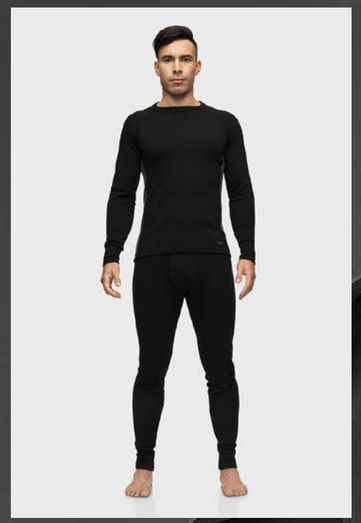
THE TEST IS PERFORMED WITH THE SAME OUTERWEAR

THE PYROMAN TEST

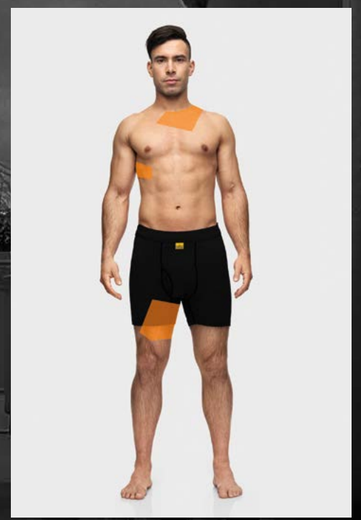
23 %

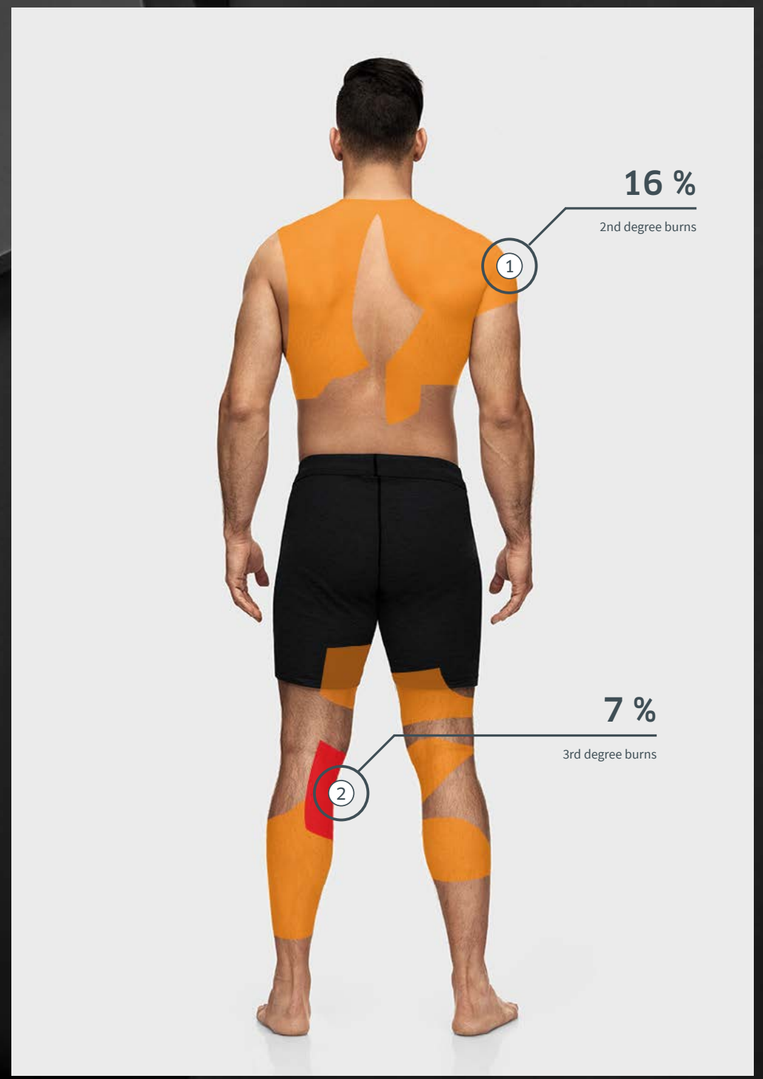
WITH Devold® FLAME RETARDANT WOOL UNDERWEAR

TOTAL BURNS



FLAME RETARDANT UNDERWEAR





In addition to the above burns, scalds can occur due to moisture. The body's own sweat often causes burns. If the sweat remains on the skin, it can overheat and begin to boil. It is therefore vital to use underwear with good moisture wicking properties. Garments containing synthetic fibres melt and cause severe skin injuries.

	MEASURAND	RESULT
1	2nd degree burns	16 %
2	3rd degree burns	7 %
3	Total burns	23 %

THE TEST IS PERFORMED WITH THE SAME OUTERWEAR

Devold® Shield

FLAME–RETARDANT WOOL – LENZING BLEND

DEVOLD® SHIELD

FLAME-RETARDANT WOOL/
LENZING BLEND

Devold® Shield flame retardant wool blend clothing – an underwear and mid-layer collection suitable for the working with electricity, gas, heat and flame. Shield is knitted from Lenzing FR® and merino wool and reinforced with polyamide. It also features Nega-Stat®, which is a special fabric that provides garments with ideal antistatic protection. Shield also protects against arcing and electric flashovers. The garments are made of terry knit, which provides a layer of air between body and garment that insulates against cold and heat.

Shield sweater

Colour: black
Sizes: S–4XL
Order no.: 4000-400

Shield zip neck

Colour: black
Sizes: S–4XL
Order no.: 4000-400

Shield sweater

Colour: black
Sizes: S–4XL
Order no.: 4000-145

Shield trousers

Colour: black
Sizes: S–3XL
Order no.: 4000-146

MATERIAL
49% Lenzing FR®, 39% wool (merino) 10% polyamide, 2% Nega-stat® terry
280 g/m² ±10%

Limited flame propagation: ISO 15025-A1
Convective heat: ISO 9151
Radiant heat: ISO 6942

Devold® Safe

FLAME-RETARDANT WOOL – LENZING BLEND

Safe zip neck

Colour: black
Sizes: S–5XL
Order no.: 4000-141

Safe T-shirt

Colour: black
Sizes: S–5XL
Order no.: 4000-132

Safe T-shirt

Colour: black
Sizes: S–3XL
Order no.: 4000-136

Safe long johns

Colour: black
Sizes: S–5XL
Order no.: 4000-133

Safe boxer shorts

Colour: black
Sizes: S–3XL
Order no.: 4000-133

Safe cap

Colour: black
Sizes: 0/S
Order no.: 4000-300