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# CATALOGUE 2015



## THE SAFETY BOOK





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## GASTIGHT CHEMICAL PROTECTIVE SUITS

*Independent from the Ambient Air*



### CHEMPION ELITE ET

Total encapsulating limited-use suit for protection against solid, liquid and gaseous or vaporous hazards [type 1a ET]. Air supply provided by compressed air breathing apparatus inside the suit.

Suit material: multilayer film laminates on carrier fleece. Lightweight, good wearing comfort.

PPE 89/686/EEC

EN 943, part 1 and 2, type 1a ET

VFDB 0801:2006 [pending]

Code	Colours	Description	Sizes
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### TYCHEM TK

Tychem® TK exhibits excellent chemical barrier properties and offers an extremely durable fabric that is puncture- and tear-resistant, yet is also supple and lightweight. Tychem® TK fabric shows at least 30 minutes of barrier protection to more than 300 challenge chemicals.

The Tychem® TK garment is specifically developed for protection against toxic, corrosive gases, liquids and solid chemicals and is suited for industrial, HazMat and domestic preparedness applications.

Cat III, Type 1a-ET, EN943-2

Code	Colours	Description	Sizes
TYKGEVJD	Lime	Tychem TK	S/M/L/XL/XXL

# CHEMICAL PROTECTIVE SUITS

Safe & Reliable Body Protection



## PROTECTIVE SUITS FOR LIMIT USE

The limited-use protective suit provides protection against particles, limited liquid splashes and sprays, electrostatics, as well as contamination from radioactive particles.

40 g/m2

The disposable hooded comes with elastic seals around the hood, arms, legs and waist. The lightweight, flexible material is a fleece made from polyethylene fibers.

EN ISO 13982-1 | EN13034 | EN14126 | EN1073-2 | EN1149-5

Code	Colours	Description	Sizes
DT117	White	Deltatek 5000	M/L/XL/XXL



## PROTECTIVE SUITS FOR LIMIT USE

The limited-use protective suit provides protection against particles.

50 g/m2

Not to be used when exposed to hazardous chemicals.

Code	Colours	Description	Sizes
AH2700	White	Disposables Coveralls	M/L/XL/XXL/XXXL



## CHEMICAL PROTECTIVE SUITS FOR CONTINUOUS USE

Tychem® C is used for splash or pressurized splash protection in a variety of industrial environments, including pulp and paper manufacturing, food processing, chemical processing and pharmaceutical manufacturing.

EN14126 | EN1703-2 | EN1149-5

Code	Colours	Description	Sizes
TYCCHA5	Yellow	Tychem C	S/M/L/XL/XXL/XXXL
TYCCHA6	Yellow	Tychem C With Socks	S/M/L/XL/XXL/XXXL

# CHEMICAL PROTECTIVE SUITS

*Safe & Reliable Body Protection*



## CHEMICAL PROTECTIVE SUITS FOR CONTINUOUS USE

Tychem® F is used for a broad range of applications from chemical spill clean-up, emergency response, to military and petrochemical applications.

EN14126 | EN1703-2 | EN1149-5

Code	Colours	Description	Sizes
TYFCHA5	Grey	Tychem F	S/M/L/XL/XXL/XXXL
TYFCHA6	Grey	Tychem F2 With Socks & Double Flap	S/M/L/XL/XXL/XXXL



# RAIN WEAR

Safe & Reliable Body Protection



## RAIN SUITS

Rain jacket and trousers: Waterproof seams.  
Jacket: Fixed hood. Fastening with zip under storm flaps. Press studs. 2 pockets.  
Trousers: Elasticated waist

Code	Colours	Description	Sizes
PRS70/Y	Yellow	PVC Rainsuit	S to 4XL
PRS70/N	Navy	PVC Rainsuit	S to 4XL
PRSRUB/Y	Yellow	Rubberized Rainsuit	S to 7XL
PRSRUB/N	Navy	Rubberized Rainsuit	S to 7XL
PRSRUB/B	Black	Rubberized Rainsuit	S to 7XL



## RAIN COATS

Waterproof seams. Fixed hood. Fastening with zip under storm flaps. Press studs. 2 pockets.

Code	Colours	Description	Sizes
PRCOAT/Y	Yellow	PVC Raincoat	S to 3XL
PRCOAT/N	Navy	PVC Raincoat	S to 3XL
RUBCOAT/Y	Yellow	Rubberized Raincoat	S to 4XL
RUBCOAT/N	Navy	Rubberized Raincoat	S to 4XL
RUBCOAT/O	Orange	Rubberized Raincoat	S to 4XL



## REFLECTIVE RAIN SUITS

Waterproof seams. Fixed hood. Fastening with zip under storm flaps. Press studs. 2 pockets. Silver reflective tape.

Code	Colours	Description	Sizes
PRSRUB/FLY	Flour Yellow	Rubberized Rainsuit	S to 4XL
PRSRUB/FLO	Flour Orange	Rubberized Rainsuit	S to 4XL

## REFLECTIVE WEAR

*Safe & Reliable Body Protection*

### REFLECTIVE VESTS



Polyester fabric. Velcro front. Silver reflective tape.

Code	Colours	Description	Sizes
GILP2JA	Flour Yellow	Reflective Vest	L – XXL
GILP2OR	Flour Orange	Reflective Vest	L – XXL

- Zip Front with ID Pocket available on request

### REFLECTIVE JACKETS



Twill 54% cotton 46% polyester 260 g/m2. Retro-reflective sewn bands.

Code	Colours	Description	Sizes
PHVESJM	Flour Yellow	Reflective Jackets	S – 3XL
PHVESOM	Flour Orange	Reflective Jackets	S – 3XL

### REFLECTIVE TROUSERS



Twill 54% cotton 46% polyester 260 g/m2. Retro-reflective sewn bands.

Code	Colours	Description	Sizes
PHPANJM	Flour Yellow	Reflective Trousers	S – 3XL
PHPANOM	Flour Orange	Reflective Trousers	S – 3XL

## RAIN WEAR

*Safe & Reliable Body Protection*

### OIL SKIN SUITS



Viking Oil skin rain suits: Waterproof seams.  
Jacket: Fixed hood. Fastening with zip under storm flaps. Press studs. 2 pockets.  
Trousers: Elasticated waist

Code	Colours	Description	Sizes
OIL-VIK-PNT	Green	Oil Skin Trousers	S to 4XL
OIL-VIK-JKT	Green	Oil Skin Jackets	S to 4XL
OIL-VIK-BB	Green	Oil Skin Bib & Brace	S to 7XL

### FREEZER WEAR



Good quality locally manufactured.

Code	Colours	Description	Sizes
FRZ-BOI	Navy	Freezer One Piece	S to 3XL
FRZ-CON	Navy	Freezer Jacket Concealed Hood	S to 3XL
FRZ-PAD	Navy	Freezer Jacket Padded Hood	S to 4XL
FRZ-TRO	Navy	Freezer Trousers	S to 4XL
FRZ-FUR	Navy	Freezer Jacket Furlined	S to 4XL

### WAYNE CHEST WADER SUIT



Waterproof seams. Fixed boots.

Code	Colours	Description	Sizes
1996NSTC	Olive	Chest Wader Non Steel Toe Cap Boot	6 – 12
1996STC	Olive	Chest Wader Steel Toe Cap Boot	6 - 12



# SAFETY HELMETS

The Safety Helmet of Choice

## DELTA PLUS ZIRCON 1



UV-Resistant high density polyethylene (HDPE) safety helmet. Harness with 8 fixing points. Sweat band. Manual adjustment. Electrical insulation 440 VAC.

EN397 | EN50365  
Class 0

Code	Colours	Description	Sizes
ZIRC1JA	Yellow	Zircon 1	Adjustable
ZIRC1BL	Blue	Zircon 1	Adjustable
ZIRC1BC	White	Zircon 1	Adjustable

## DELTA PLUS QUARTZ IV



Ventilated UV-Resistant high density polypropylene (PP) safety helmet. Harness with 8 fixing points. Sweat band. Ratchet adjustment.

EN397

Code	Colours	Description	Sizes
QUAR4JA	Yellow	Quartz 4	Adjustable
QUAR4BC	White	Quartz 4	Adjustable

## DELTA PLUS BASEBALL DIAMOND V



ABS safety helmet. Shape to improve vertical vision. Also tested for front back wearing, to reduce encumbrance. Harness with 8 fixing points. Push button adjustment. Electrical insulation 440 VAC.

EN397 | EN50365  
Class 0

Code	Colours	Description	Sizes
DIAM5ORFL	Flou Orange	Diamond V	Adjustable
DIAM5JAFL	Flou Yellow	Diamond V	Adjustable
DIAM5BCFL	Flou White	Diamond V	Adjustable

## SAFETY HELMETS

*The Safety Helmet of Choice*

### MSA V-GARD



The popular V-Gard features a high density polyethylene [HDPE] shell and a textile suspension. It is compatible with the full range of MSA safety helmet accessories. Electrical insulation 440 VAC.

**SANS1397**

Code	Colours	Description	Sizes
40100	Various	V-Gard with Snugfit Liner	Adjustable
40101	Various	V-Gard with Snugfit Liner & Plastic Bracket	Adjustable
40120	Various	V-Gard with Fastrac Liner	Adjustable
40121	Various	V-Gard with Fastrac Liner & Plastic Bracket	Adjustable

### MSA V-GARD FULL BRIM



The popular V-Gard features a high density polyethylene [HDPE] shell and a textile suspension. It is compatible with the full range of MSA safety helmet accessories. Electrical insulation 440 VAC.

**SANS1397**

Code	Colours	Description	Sizes
40200	Various	V-Gard with Snugfit Liner	Adjustable
40201	Various	V-Gard with Snugfit Liner & Plastic Bracket	Adjustable
40220	Various	V-Gard with Fastrac Liner	Adjustable
40221	Various	V-Gard with Fastrac Liner & Plastic Bracket	Adjustable

### MSA HEATGARD



The HeatGuard is a special application helmet for use in elevated temperature environments.

**SANS1397**

Code	Colours	Description	Sizes
40420GA	Silver	HeatGuard with Fastrac Liner	Adjustable

# SAFETY HELMETS

The Safety Helmet of Choice

## MSA V-GARD 500

The V-Gard 500 is a high quality helmet suited for various applications. It features a high performance ABS shell with a rain gutter, a textile suspension and is particularly suited for hearing protection attachment.

EN397 | EN50365

Class 0

Code	Colours	Description	Sizes
40720	Various	V-Gard 500 Ventilated with Fastrac Liner	Adjustable

## MSA V-GARD 520 SHORT PEAK

The V-Gard 520 is the short peak version of the V-Gard 500, particularly suited for high-angle and work at height applications. It features a high performance, non vented ABS shell with a rain gutter and can accommodate a specific 3 or 4-point chinstrap.

EN397 | EN50365

Class 0

Code	Colours	Description	Sizes
40820AT	White	V-Gard 520 Ventilated with Fastrac Liner & 3point Chinstrap	Adjustable
40820AU	White	V-Gard 520 Ventilated with Fastrac Liner & 4point Chinstrap	Adjustable

## DELTA PLUS MOUNTAIN STYLE HELMETS

Safety helmet without peak for best vertical vision. Innovative textile harness for extra comfort. ROTOR® system adjustment. Available with or without ventilation. 3point chinstrap.

EN397 | EN50365

Class 0

Code	Colours	Description	Sizes
GRAPEBCFL	Flou White	Granite Peak Non Vented	Adjustable
GRAPEJAFL	Flou Yellow	Granite Peak Non Vented	Adjustable
GRAWINO	Black	Granite Wind Vented	Adjustable
GRAWIJAFL	Flou Yellow	Granite Wind Vented	Adjustable
GRAWIBCFL	Flou White	Granite Wind Vented	Adjustable

## SAFETY SPECTACLES

*Comfort & Safety in a Variety of Styles*

### DELTA PLUS BRAVA



Clear polycarbonate single lens glasses. Soft spatula arms. Integrated nose piece. Retro-reflecting side arms. Anti-scratch.

**EN166 | EN170**

**1 FT UV 2C-1.2**

Code	Colours	Description	Sizes
BRAV2IN	Clear	Brava 2 Spectacle	Std
BRAV2JA	Yellow	Brava 2 Spectacle	Std
BRAV2FU	Smoked	Brava 2 Spectacle	Std

### DELTA PLUS VULCANO



Clear polycarbonate single lens glasses. Adjustable & tilting nylon arms. Integrated PVC nose piece. Anti-scratch & Anti-fog.

**EN166 | EN170**

**1 FT UV 2C-1.2**

Code	Colours	Description	Sizes
VULC2ORIN	Clear	Vulcano 2 Spectacle	Adjustable
VULC2NOFU	Smoked	Vulcano 2 Spectacle	Adjustable

### DELTA PLUS FUJI



Clear polycarbonate twin lens glasses. Soft tips. Soft PVC nose piece. Side protection. Anti-scratch & Anti-fog.

**EN166 | EN170**

**1 FT UV 2C-1.2**

Code	Colours	Description	Sizes
FUJ2NOIN	Clear	Fuji 2 Spectacle	Std
FUJ2NOOR	Gradient	Fuji 2 Spectacle Indoor/Outdoor	Std



## SAFETY SPECTACLES

*Comfort & Safety in a Variety of Styles*

### DELTA PLUS PACAYA



Clear polycarbonate single lens glasses. Integrated nose piece. Tilting nylon arms. Removable foam frame for dust and shock protection. Anti-scratch & Anti-fog.

EN166 | EN170

1 FT UV 2C-1.2

Code	Colours	Description	Sizes
PACAYBLIN	Clear	Pacaya Spectacle	Std
PACAYNOFU	Smoked	Pacaya Spectacle	Std

### DELTA PLUS LIPARI



Clear polycarbonate single lens glasses. Adjustable & tilting arms. Spatula tips. Integrated PVC nose piece.

EN166 | EN170

1 FT UV 2C-1.2

Code	Colours	Description	Sizes
LIPA2BLIN	Clear	Lipari 2 Spectacle	Adjustable
LIPA2T5	Welding	Lipari 2 Spectacle Shade 5 Welding Lens	Adjustable

### DELTA PLUS KILIMANDJARO



Clear polycarbonate single lens glasses. Adjustable & tilting nylon arms. Side protection.

EN166 | EN170

1 FT UV 2C-1.2

Code	Colours	Description	Sizes
KILIMBLINAB	Clear	Kilimandjaro 2 Spectacle	Adjustable
KILIMNOFU100	Smoked	Kilimandjaro 2 Spectacle	Adjustable

### DELTA PLUS PITON



Very light clear polycarbonate single lens glasses. Modern and sport design. Side protection. Open arms for lateral ventilation. Arms hole for neck cord. UV400, scratch-resistant.

EN166 | EN170

1 FT UV 2C-1.2

Code	Colours	Description	Sizes
PITO2IN	Clear	Piton 2 Over Spectacle	Std

## SAFETY SPECTACLES

*Comfort & Safety in a Variety of Styles*

### MSA DISCOVERY II



Clear polycarbonate single lens glasses. Discovery II boasts a fresh and sleek design, and offers reliable protection against impact and scratches. c/w Microfibre bag.

EN166

Code	Colours	Description	Sizes
12407	Mirror	Discovery II Spectacle Indoor/Outdoor	Std
12408	Blue	Discovery II Spectacle	Std

### MSA SETT



Clear polycarbonate single lens glasses. Discovery II boasts a fresh and sleek design, and offers reliable protection against impact and scratches. c/w Microfibre bag.

EN166

Code	Colours	Description	Sizes
12840	Clear	MSA Sett Spectacle	Std
12841	Bronze	MSA Sett Spectacle	Std
12842	Clear	MSA Sett Spectacle Indoor/Outdoor	Std
12843	Sett	MSA Sett Spectacle	Std

### MSA MATRIX



Clear polycarbonate single lens glasses. Full wrap with perfect eye protection from top, bottom & sides. Anti-fog. c/w Microfibre bag.

EN166

Code	Colours	Description	Sizes
12405	Grey	MSA Matrix Spectacle	Adjustable
12406	Silver Mirror	MSA Matrix Spectacle	Adjustable

### MSA SPIRIT 2



Clear polycarbonate single lens glasses. Snugfitting goggle type spectacle. Comes together with both temples & band. Anti-fog. c/w Microfibre bag.

EN166

Code	Colours	Description	Sizes
12324	Clear	MSA Spirit 2	Std
12325	Grey	MSA Spirit 2	Std
12332	Mirror	MSA Spirit 2 indoor/outdoor	Std

# SAFETY GOGGLES

Comfort & Safety in a Variety of Styles

## DELTA PLUS GALERAS



Clear polycarbonate goggle. Indirect ventilation. Flexible PVC and nylon frame. Wide screen with non-reflecting effect. Adapted to the wearing of corrective glasses and disposable respiratory half-masks. Wide elastic strap. Anti-mist. Anti-scratch .

EN166

Code	Colours	Description	Sizes
GALERVI	Clear	Galeras Wide Vision Safety Google	Adjustable



Clear polycarbonate goggle. Flexible PVC frame. Direct ventilation. Woven elastic strap.

EN166

Code	Colours	Description	Sizes
MURIA2VD	Clear	Muria 2 Safety Goggle	Adjustable



Clear acetate goggles. Flexible PVC frame. Indirect ventilation with 4 ventilators. Textile elastic strap. For chemical splashes.

EN166

Code	Colours	Description	Sizes
RUIZ1A	Clear	Ruiz 1 Safety Goggle	Adjustable

## DELTA PLUS SABA



Clear polycarbonate goggles. Indirect ventilation. Headband without elastic (latex free). Flexible PVC frame. Innovative ROTOR® system adjustment (patented), easy to put on and comfortable to wear..

EN166

Code	Colours	Description	Sizes
SABAORVI	Orange	Saba Safety Goggle	Adjustable

## SAFETY SPECTACLES

*Comfort & Safety in a Variety of Styles*

### MSA RESPONDER



Clear twin polycarbonate/Acetate lens goggles. Fits comfortably with respirator. Fits most prescription glasses and standard helmets. Best protection against liquid & chemical splashes.

EN166

Code	Colours	Description	Sizes
14185	Clear	Responder	Adjustable

### MSA PREMIUM



Clear twin polycarbonate/Acetate lens goggles. Fits comfortably with respirator. Fits most prescription glasses and standard helmets. Best protection against liquid & chemical splashes.

EN166

Code	Colours	Description	Sizes
14185	Clear	Responder	Adjustable

### MSA PREMIUM



Clear twin polycarbonate/Acetate lens goggles. Fits comfortably with respirator. Fits most prescription glasses and standard helmets. Best protection against liquid & chemical splashes.

EN166

Code	Colours	Description	Sizes
14185	Clear	Responder	Adjustable



# SAFETY VISORS

Comfort & Safety in a Variety of Styles



## DELTA FACE SHIELD

Faceshield with front protection + VISORPC visor : clear polycarbonate visor with plastic edge. 39 x 20 cm.

EN166

Code	Colours	Description	Sizes
BALBI2IN	Clear	Face Shield	Fixed

## SAFETY HARNESS

### MSA WORKMAN® LIGHT FULL BODY HARNESS



The MSA Workman Light, single D-ring harness, provides comfortable protection, due to its lightweight components and durable webbing. The vest-style harness fits a wide range of body types and sizes. Colour contrasting thigh and torso straps simplify donning.

EN361 | SABS

Code	Description	Sizes
10115526	MSA Workman Light Small	Adjustable
10115527	MSA Workman Light Medium	Adjustable
10115528	MSA Workman Light Large	Adjustable

### MSA WORKMAN® PREMIER FULL BODY HARNESS



The MSA Workman Premier offers the user an additional attachment point at the front, with extra adjusters on the torso for even greater adjustment. The harness also offers shoulder loops for use with the MSA Spreader Bar.

The MSA Workman Premier harness is available with Qwik-fit (traditional mating buckle).

EN361 | EN1497 | SABS

Code	Description	Sizes
10115541	MSA Workman Light Small	Adjustable
10115542	MSA Workman Light Medium	Adjustable
10115543	MSA Workman Light Large	Adjustable

### MSA WORKMAN® UTILITIES FULL BODY HARNESS



The MSA Workman Utility offers everything the Premier harness offers and more, incorporating a waist belt and pad and hip positioning D-rings, making this the perfect harness for Utility work.

EN358 | EN361 | EN1497 | SABS

Code	Description	Sizes
10115526	MSA Workman Light Small	Adjustable
10115527	MSA Workman Light Medium	Adjustable
10115528	MSA Workman Light Large	Adjustable

SAFETY HARNESS

MSA EVOTECH® FULL BODY HARNESS



EVOTECH Tower Harness option with comfort seat makes longer work periods more comfortable, featuring variable-width webbing in the sub-pelvic area to increase comfort and support when work positioning, adjustable D-ring position, and integral body belt and removable saddle, both constructed using a dual durometer pad and Sorbtek fabric for ultimate comfort!

EN361

Code	Description	Sizes
10123406	MSA EVOTECH Harness	Small
10123407	MSA EVOTECH Harness	Medium
10123408	MSA EVOTECH Harness	Large



DELTA PLUS FULL BODY HARNESS

Two-colour full body harness with vest:

- 2 attachment points (rear - chest)
- 4 adjusting buckles
- 1 karabiner

Vest in polyester, Cordura and 3D knit

- 2 zipped pockets
- adjustable size with lateral cords.

EN361

Code	Description	Sizes
JANUS12M	Two-Colour Full Body Harness	Medium
JANUS12L	Two-Colour Full Body Harness	Large

## LANYARDS & ANCHORAGE CONNECTORS

### MSA WORKMAN® ENERGY ABSORBING LANYARDS



Energy-absorbing lanyards provide a means of connection between the fall arrest attachment of MSA full body harnesses and a qualified anchorage and anchorage connector. The energy absorber keeps fall arrest forces below EN limits and deceleration distance is controlled to a maximum of 175 cm.

EN354 | EN355 | SABS

Code	Description	Length
10115750	Energy Absorbing Lanyard Twin Leg Screw Gate Karabiner	2m
10115751	Energy Absorbing Lanyard Twin Leg Steel Scaffold Hook	2m
10115752	Energy Absorbing Lanyard Twin Leg Aluminum Scaffold Hook	2m

### MSA DYNA-LOCK® SELF-RETRACTING LANYARD



Dyna-Lock® Self-Retracting Lanyard The MSA Dyna-Lock® Self-Retracting Lanyards (SRL) are fast-acting fall arresters that limit free-fall distance, deceleration distance and fall arrest forces while allowing user freedom of movement. The Dyna-Lock SRL is ideal for climbing applications where vertical mobility is needed..

EN354 | EN355 | SABS

Code	Description	Length
10114516	Dyna lock SRL Galvanised Wire Rope With Swivel Snaphook	6m
10113343	Dyna lock SRL Galvanised Wire Rope With Swivel Snaphook	9m
10117437	Dyna lock SRL Galvanised Wire Rope With Swivel Snaphook	16m
10113346	Dyna lock SRL Galvanised Wire Rope With Swivel Snaphook	22m

### MSA WORKMAN SELF-RETRACTING LANYARD



With lightweight design, durable thermoplastic housing and impact-absorbing bumpers, the MSA Workman SRL range will provide years of dependable service.

- Integral, ergonomic carrying handle for easier transport and installation
- RFID-enabled product for simplified product tracking and inspection
- 136 kg working capacity for increased versatility
- Swivel snap-hook avoids twisting of the cable during use
- Load indicator alerts users that the MSA Workman SRL has been involved in a fall and needs to be removed from use
- Certified to EN360 | EN354 | EN355 | SABS

Code	Description	Length
10120722	MSA Workman SRL, Stainless Steel	9m
10121777	MSA Workman SRL, Stainless Steel	15m



# RESCUE SYSTEMS

## MSA WORKMAN® CONFINED SPACE TRIPOD



EVOTECH Tower Harness option with comfort seat makes longer work periods more comfortable, featuring variable-width webbing in the sub-pelvic area to increase comfort and support when work positioning, adjustable D-ring position, and integral body belt and removable saddle, both constructed using a dual durometer pad and Sorbtek fabric for ultimate comfort!

EN361

Code	Description	Sizes
10123406	MSA EVOTECH SMALL	Adjustable
10123407	MSA EVOTECH MEDIUM	Adjustable
10123408	MSA EVOTECH LARGE	Adjustable



## MSA SUREGRAB ROPE GRAB & VERTICAL LIFELINE KIT

The SureGrab device and lifeline is used to provide temporary fall protection on ladders or when climbing vertical structures. This system can also be used to provide a secondary lifeline for suspended positioning systems used by building/structure inspectors, window cleaners, and maintenance personnel. The SureGrab device moves freely up or down an approved 16 mm diameter lifeline. When sudden downward movement occurs, a camming lever is activated arresting the fall. The device can be installed or removed from the lifeline at any point along its length!

EN352-3

Code	Description
10104072	Rope grab fall arrester, automatic / manual, open body, 44.5 mm x 30.5 cm web lanyard, 19 mm snaphook
10110161	Vertical Lifeline Kit, 18 m, 19 mm snaphook, incl. rope grab
10121804	Vertical Lifeline, replacement rope

## DELTA PLUS FOOTWEAR

### DELTA PLUS RIGGER BOOTS S3 HRO CI HI SRC



Upper: Full grain leather with TPU toe cap. Lining: Polyamide Cambrelle absorbing.  
Insole: Removable preformed – Polyamide Cambrelle on EVA.  
Midsole: Inhect3ed - Panorubber®.  
Outsole: Rubber Nitrile

EN ISO 20345

Code	Description	Length
CAMARS3MA	Rigger Boot Full Grain Leather	36 to 48

### DELTA PLUS WINTER BOOTS S3 CI SRC



Upper: Full grain leather with TPU toe cap. Lining: Polyamide Cambrelle absorbing.  
Insole: Removable preformed – Polyamide Cambrelle on EVA.  
Midsole: Inhect3ed - Panorubber®.  
Outsole: Rubber Nitrile

EN ISO 20345

Code	Description	Length
CADERS3NO	Winter Boot Full Grain Leather	39 to 48

### DELTA PLUS TREK WORK BOOTS S3 HRO HI CI SRC



Boots range TREK WORK. Upper: Full grain leather. Lining: Polyamide Cambrelle. Insole: Removable preformed - Polyester on EVA. Midsole: Cemented - PU with Panoshock® shock absorber. Outsole: Rubber Nitrile. Non-metallic footwear.

EN ISO 20345

Code	Description	Length
TW400S3NO	Trek Work Boot	39 to 48

SAFETY GLOVES



DELTAPLUS PU GLOVES

Polyurethane coating. Non-slip coated palms. Ventilated back. Anatomically designed. Resistant to small cracks. Silicone free. Assembly of electronic components. Precision mechanics. Packaging. Handling of slightly oily parts.

EN388 | LEVELS 4.1.3.1

Code	Description	Sizes
VE702GR	POLYAMIDE KNITTED GLOVE / PU PALM	6/7/8/9/10



DELTAPLUS NITRILE/PU DOTTED GLOVES

Seamless polyamide spandex knitted glove. Nitrile/Polyurethane coating on palm and fingertips. Nitrile dots on palm. Gauge 15: Provide super flexible feeling. Excellent grip.

EN388 | LEVELS 3.1.3.1

Code	Description	Sizes
VE727	POLYAMIDE KNITTED GLOVE NITRILE/PU PALM	7/8/9/10



KTP SAFETY NITRILE FOAM GLOVES

Abrasion resistance. Excellent performances in oily and greasy environment. Precision handling. Assembly and packaging.

EN388 | LEVELS 4.1.2.1

Code	Description	Sizes
1350G-GR	POLYAMIDE KNITTED GLOVE NITRILE PALM	8/9/10



DELTAPLUS ¾ DIPPED NITRILE GLOVES

High nitrile coating. Increased protection of fingers. Protection against oils. Strength at joints. Longevity. Increased dexterity. Breathability. Automobile and aviation industry. Precision mechanics. Delicate handling. Handling of oily parts.

EN388 | LEVELS 4.1.2.1

Code	Description	Sizes
VE702GR	POLYAMIDE KNITTED GLOVE NITRILE PALM	7/8/9/10

## SAFETY GLOVES



### KTP SAFETY DIPPED GLOVES

Gripped latex coating on palm. Rough-textured hand- Snug fit at wrist good abrasion and tear resistance with elastic. Construction materials Building-Warehousing and delivery.

EN388 | LEVELS 2.2.4.2

Code	Description	Sizes
10902	POLYAMIDE KNITTED GLOVE LATEX PALM	8/9/10



### DELTAPLUS LATEX FOAM GLOVES

Breathable coating, excellent comfort and avoid perspiration. Resistance to abrasion, small cuts and perforation. Elastic wrist.

EN388 | LEVELS 3.1.3.1

Code	Description	Sizes
VV733	POLYAMIDE KNITTED GLOVE LATEX FOAM PALM	8/9



### KTP SAFETY LATEX GLOVES (CRAYFISH)

Gripped latex coating on palm. Rough-textured hand- Snug fit at wrist good abrasion and tear resistance with elastic.

EN388 | LEVELS 3.1.3.1

Code	Description	Sizes
07603	POLYAMIDE KNITTED GLOVE LATEX PALM	10



### KTP SAFETY LATEX GLOVES

Seamless polyamide spandex knitted glove. Latex coating on palm and fingertips. Gauge 15: Provide super flexible feeling. Excellent grip.

EN388 | LEVELS 3.1.3.1

Code	Description	Sizes
1350-R/BLK	SPANDEX KNITTED GLOVE LATEX PALM	8/9/10



LEATHER SAFETY GLOVES



DELTAPLUS COWHIDE LEATHER GLOVES

All cowhide leather. General use reinforced mechanical protection gloves. Handling of wood, cardboard and plastic crates.  
EN388 | LEVELS 3.1.2.2

Code	Description	Sizes
FBN49	COWHIDE LEATHER GLOVE	10



DELTAPLUS PIGSKIN LEATHER GLOVES

Pigskin leather grain. General use reinforced mechanical protection gloves. General handling. Building trades. Maintenance and handling. Rock wool and fiberglass installation.  
EN388 | LEVELS 2.1.1.1

Code	Description	Sizes
FP159	PIGSKIN LEATHER GLOVE	10



KTP SAFETY GOATSKIN LEATHER GLOVES

Goatskin full grain leather glove. General use reinforced mechanical protection gloves. TIG welding.  
EN388 | LEVELS 2.1.1.1

Code	Description	Sizes
GTIG	GOATSKIN LEATHER GLOVE	10



DELTAPLUS COWHIDE LEATHER GLOVES

Leather cowhide glove, full grain leather palm, split leather back.  
EN388 | LEVELS 2.1.2.1

Code	Description	Sizes
FCN29	COWHIDE LEATHER GLOVE	10

## WELDING GLOVES



### DELTAPLUS COWHIDE LEATHER GLOVES

5-finger welder's glove, heat-resistant top quality leather hide. American cut with wing thumb. Kevlar® sewn.

**EN388 LEVELS 3.1.3.3 | EN407 LEVELS 4.1.3.X.4.X**

Code	Description	Sizes
CA615K	COWHIDE LEATHER GLOVE	10



### DELTAPLUS COWHIDE LEATHER GLOVES

Full cowhide welder's glove, American cut, complete second finger, artery protection, 15-cm cowhide cuff.

**EN388 LEVELS 2.1.4.2 | EN407 LEVELS 4.1.3.X.4.X**

Code	Description	Sizes
TC715	COWHIDE LEATHER GLOVE	10



### DELTAPLUS COWHIDE LEATHER GLOVES

Welder's glove. Heat-resistant cowhide split leather palm (HR). Wool fleece lining on palm. 20 cm cuff with canvas lining. Kevlar® Technology sewn. American assembly. Length : 40 cm.

**EN388 LEVELS 4.1.3.3 | EN407 LEVELS 4.1.4.X.4.X | EN12477**

Code	Description	Sizes
TER250	COWHIDE LEATHER GLOVE	10

## LATEX/SYNTHETIC GLOVES

### DELTAPLUS NEOPRENE GLOVES



Extra heavy weight Neoprene glove, cotton flock lining, grip-pattern palm and fingers, straight cuff. Length: 30 cm, thickness: 0.75 mm. Bacteriostatic and fungistatic additive. ABCIJ - Resistant gloves to permeation by chemicals.  
**EN388 LEVELS 4.1.0.0 | EN374 | EN420**

Code	Description	Sizes
VE509	NEOPRENE GLOVE	7/8/9/10

### DELTAPLUS SUPPORTED LATEX GLOVES



Natural latex glove on jersey (Interlock) cotton support. Smooth exterior. Straight cuff. Length: 30 cm and thickness: 1,25 mm. Bacteriostatic and fungistatic treatment. Chlorinated outside and inside.  
AKL - Resistant gloves to permeation by chemicals  
**EN388 LEVELS 4.1.2.1 | EN374 | EN407**

Code	Description	Sizes
VE920	LATEX SUPPORTED GLOVE	9

### DELTAPLUS PVC GLOVES



Chemical PVC glove. PVC on cotton jersey lining. Length: 40 cm. Thickness: 1,3 mm. AKL - Resistant gloves to permeation by chemicals  
**EN388 LEVELS 4.1.2.1 | EN374 | EN407**

Code	Description	Sizes
PVCC400	CHEMICAL PVC GLOVE	10

### DELTAPLUS NITRILE GLOVES



Nitrile-coated glove on jersey cotton support, ventilated back, 6-cm cuff, thickness: 1.40 mm to 1.60 mm.  
**EN388 LEVELS 4.2.1.1**

Code	Description	Sizes
NI170	NITRILE SUPPORTED GLOVE	10

## SPECIALISED GLOVES



### DELTAPLUS KEVLAR GLOVES

5 finger knitted glove. Outside Kevlar® / Inside Cotton. Seamless. Ambidextrous. Elastic wrist 10 cm. Quality label DuPont "OutershellFiber 100% Kevlar®".

**EN388 LEVELS 1.5.4.X | EN407 LEVELS 4.2.X.X.X.X**

Code	Description	Sizes
KPG10	KEVLAR GLOVE	9



### DELTAPLUS IMPACT GLOVES

Glove with Polyester/Polyurethane back. PVC reinforcements. Polyamide/Polyurethane palm with PVC dots. 8 cm cuff in neoprene.

Protection of the metacarpals about a force of 2 J (One weight of 1 kg on a distance of 20 cm): diminution of the impact about 44% (means 4,8 kN\*)

**EN388 LEVELS 4.2.3.3**

Code	Description	Sizes
VV900	IMPACT GLOVE	8/9/10/11



### DELTAPLUS CUT RESISTANT GLOVES

Seamless knitted glove. TAEKI® 5 High performance polyethylene fibre. Cowhide on palm and fingertips. Gauge 10.

Excellent cut resistance. Maximum abrasion performance. Optimal dexterity. Heat resistance up to 250°C.

**EN388 LEVELS 4.5.4.3 | EN407 X.2.X.X.X.X**

Code	Description	Sizes
VENICUT50	COWHIDE CUT RESISTANT	9/10



### DELTAPLUS CUT RESISTANT GLOVES

Seamless knitted glove. TAEKI® 5. Latex-coating on palm and fingertips. 6-cm elasticated wrist. Gauge 10.

Good abrasion resistance. Anti slip rough texture. Excellent grip.

**EN388 LEVELS 4.5.4.2 | EN407 X.2.X.X.X.X**

Code	Description	Sizes
VENICUT52	LATEX CUT RESISTANT	8/9/10

SPECIALISED GLOVES



DELTAPLUS CUT RESISTANT GLOVES

Seamless knitted glove. TAEKI S high performance polyethylene fibre. PU-coating on palm and fingertips. 10-cm elasticated wrist. Gauge 13.  
Handling of sharp-edged sheet metal and plastic pieces. Automobile and aviation Industry.  
**EN388 LEVELS 4.4.4.2**

Code	Description	Sizes
VENICUT52	LATEX CUT RESISTANT	8/9/10



MAPA SPONTEX GLOVES

The improved chemical, fat and acid-resistance of nitrile with the comfort of latex.  
Embossed diamond pattern grip.

Code	Description	Sizes
56734	Spontex Glove	6/7/8

## EAR DEFENDERS

### DELTAPLUS SEPANG2



Ear defender with ABS and synthetic foam ear protection. Adjustable PVC padded and flexible arch. SNR : 29 dB.

EN352-1

Code	Description	Colour
SEPA2OR	SEPANG2 ADJUSTABLE	ORANGE

### DELTAPLUS INTERLAGOS



Ear defender with ABS cups. Pads filled with synthetic foam. Double plastic headband (POM), adjustable in height, with soft and ventilated reinforcement for a better comfort. SNR : 33 dB.

EN352-1

Code	Description	Colour
INTERGR	INTERLAGOS ADJUSTABLE	GREY

### DELTAPLUS YAS MARINA



Foldable ear defender with ABS cups. Pads filled with synthetic foam. Double plastic headband (POM), adjustable in height, with soft and ventilated reinforcement for a better comfort. SNR : 32 dB.

EN352-1

Code	Description	Colour
YASMAGJ	YAS MARINA ADJUSTABLE	GREY/YELLOW

### DELTAPLUS PIT BOARD



Electronic ear defender with ABS cups. Adjustable steel and sponge headband, ultra comfort. 1 button to adjust the volume on each cup for right/left use separately. Walkie-talkie system: allows to choose the communication channel (8 channels and 38 sub-channels available). Maximum reception distance: 3 km. Hunting system : amplification of voices and then warning signals, to avoid the risk of isolation in the workplace.

EN352-1

Code	Description	Colour
PITBONR	PIT BOARD ADJUSTABLE	BLACK



## EAR DEFENDERS

### DELTAPLUS SUZUKA2



Ear defender for safety helmets. Adjustable in height. High flexibility ABS arm and cups. PVC cups padded with synthetic foam. To use alone or with VISOR HOLDER faceshield holder. Suitable for DELTAPLUS helmets ONLY. SNR = 27 dB.

EN352-2

Code	Description	Colour
SUZU2JAFL	SUZUKA2 ATTACHABLE	FLOURESCENT YELLOW
SUZU2NO	SUZUKA2 ATTACHABLE	BLACK

### DELTAPLUS SILVERSTONE2



Ear defender specific neck wearing. Metal arch and ABS cups, padded of synthetic foam. Easy to use with all safety helmets and bum caps. SNR : 30 dB.

EN352-1

Code	Description	Colour
SILVA2AR	SILVERSTONE2 NECK TYPE	SILVER
SILV2JAFL	SILVERSTONE2 NECK TYPE	FLOURESCENT YELLOW

### MSA LEFT/RIGHT



MSA Left/Right ear muffs leaves you with a choice of comfort and attenuation levels, but also features helmet mounted ear muffs and a nice range of accessories..

EN352-1

Code	Description	Colour
30170	SORDIN LOW HEADBAND - SNR24dB	WHITE
30172	SORDIN MEDIUM HEADBAND - SNR28dB	YELLOW
30174	SORDIN HIGH HEADBAND - SNR33dB	BLUE
30171	SORDIN LOW ATTACHABLE - SNR24dB	WHITE
30173	SORDIN MEDIUM ATTACHABLE - SNR28dB	YELLOW
30174	SORDIN HIGH ATTACHABLE - SNR31dB	BLUE

## EAR PLUGS

### DELTAPLUS DISPOSABLE EARPLUGS



Box of 200 pairs of Polyurethane disposable earplugs packed in individual plastic bags by pairs.

EN352-2 | ANSI S3

Code	Description	Colour
CONIC200	DISPOSABLE EARPLUGS UNCORDED	YELLOW

### DELTAPLUS DISPOSABLE EARPLUGS



Box of 200 pairs of Polyurethane disposable earplugs packed in individual plastic bags by pairs.

EN352-2 | ANSI S3

Code	Description	Colour
CONICCO200	DISPOSABLE EARPLUGS CORDED	YELLOW

### DELTAPLUS REUSABLE EARPLUGS



Bag of 6 pairs of reusable thermoplastic (TPR) earplugs with nylon cord. ø7-11 mm. (5 pairs in bag + 1 pair in storage plastic box).

EN352-2 | ANSI S3

Code	Description	Colour
CONICFIR062BL	REUSABLE EARPLUGS CORDED	BLUE

### DELTAPLUS DISPENSER EARPLUGS



Dispenser for disposable earplugs including 500prs earplugs.

EN352-2 | ANSI S3

Code	Description	Colour
CONICDIS	DISPENSER WITH 500PRS EARPLUGS	YELLOW/BLUE
CONIC500	REFILL OF 500PRS EARPLUGS	YELLOW

## PERSONAL MONITORS

### MSA ALTAIR® PRO SINGLE-GAS DETECTOR

ALTAIR Pro toxic gas and oxygen detectors combine reliable detection and LED / audible / flashing / vibrating alarms with clear, backlit LCD displays. Automatically records the last 50 alarm/test events while simultaneously recording peak gas readings or low O2 readings every three minutes in a periodic data log.



Code	Description	Screen Colour	Outer Colour
10074137	ALTAIR PRO OXYGEN	BW	BLACK
10076730	ALTAIR PRO AMMONIA	BW	BLACK
10076720	ALTAIR PRO CARBON MONOXIDE	BW	BLACK
10076736	ALTAIR PRO SULPHUR DIOXIDE	BW	BLACK
10074136	ALTAIR PRO HYDROGEN SULPHIDE	BW	BLACK
10076716	ALTAIR PRO CHLORINE	BW	BLACK
10076731	ALTAIR PRO NITROGEN DIOXIDE	BW	BLACK
10076729	ALTAIR PRO HYDROGEN CYANIDE	BW	BLACK
10076733	ALTAIR PRO OXYGEN WITH REMOTE	BW	BLACK
10076735	ALTAIR PRO PHOSPHINE	BW	BLACK



### MSA ALTAIR® 2X GAS DETECTOR

All ALTAIR 2X Gas Detectors. Incorporate proven XCell® sensor technology. Enhance worker safety, compliance and traceability. Minimize cost of ownership. Demonstrate rugged durability.

**ALTAIR 2XP Gas Detector with XCell Pulse Technology: H2S -Features the first stand-alone bump test, which eliminates the need for bottled gas!**

Bump test anytime, anywhere.

4-year expected instrument & sensor life

3-year warranty on instrument & most sensors (2 years on Cl2, NH3)

Code	Description	Approval
10153984	ALTAIR 2XP H2S	N/A
10153985	ALTAIR 2XT SO2&H2S	N/A
10154040	ALTAIR 2XT CO&H2S	N/A

## PERSONAL MONITORS

### MSA ALTAIR® 4X MULTI-GAS DETECTOR



The ALTAIR 4X is an extremely durable Multigas Detector that simultaneously measures up to four gases from a wide range of XCell(R) sensor options including combustible gases, O<sub>2</sub>, CO, H<sub>2</sub>S, SO<sub>2</sub> and NO<sub>2</sub>. The ALTAIR 4X Detector surpasses industry standards in several crucial areas. Its four-year sensor life is 60% longer than the industry average, while its 24-hour run time exceeds the industry average by 71%. The unit features exclusive MotionAlert™, which lets others know if the user has become immobile, and InstantAlert™, a manual alarm that alerts others of potentially dangerous situations. This rugged unit is designed to withstand a drop of up to 20 ft (6m) and uses less than half as much calibration gas as the industry average.

Code	Description	Screen Colour	Outer Colour
10110453	ALTAIR 4X MULTIGAS DETECTOR (LEL,O <sub>2</sub> ,CO,H <sub>2</sub> S)	BW	CHARCOAL
10110454	ALTAIR 4X MULTIGAS DETECTOR (LEL,O <sub>2</sub> ,CO)	BW	CHARCOAL
10110455	ALTAIR 4X MULTIGAS DETECTOR (LEL,O <sub>2</sub> )	BW	CHARCOAL
10110456	ALTAIR 4X MULTIGAS DETECTOR (LEL,O <sub>2</sub> ,CO,H <sub>2</sub> S)	BW	GLOW

### MSA ALTAIR® 5X MULTI-GAS DETECTOR



ALTAIR Pro toxic gas and oxygen detectors combine reliable detection and LED / audible / flashing / vibrating alarms with clear, backlit LCD displays. Automatically records the last 50 alarm/test events while simultaneously recording peak gas readings or low O<sub>2</sub> readings every three minutes in a periodic data log.

Code	Description	Screen Colour	Outer Colour
10119600	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S)	BW	BLACK
10119614	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S)	COLOUR	BLACK
10119616	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, SO <sub>2</sub> )	COLOUR	BLACK
10119619	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, CL <sub>2</sub> )	COLOUR	BLACK
10119631	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, NO <sub>2</sub> )	COLOUR	BLACK
10119632	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, NH <sub>3</sub> )	COLOUR	BLACK
10119645	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, HCN)	COLOUR	BLACK
10119661	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, CL <sub>2</sub> )	BW	BLACK
10119662	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, SO <sub>2</sub> )	BW	BLACK
10119663	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, NO <sub>2</sub> )	BW	BLACK
10119664	ALTAIR 5X (LEL, O <sub>2</sub> , CO, H <sub>2</sub> S, NH <sub>3</sub> )	BW	BLACK
10103189	SAMPLING LINE 3MTR		
10103191	SAMPLING PROBE 0.3MTR		

# PERSONAL MONITORS

## MSA SIRIUS® MULTIGAS DETECTOR



The Sirius Multigas Detector integrates MSA's proprietary patent-pending PID sensor into a durable four-gas detector that's designed and built for safety and reliability across multiple applications and hazards. Fast response times let users constantly monitor for both VOCs and combustible, toxic, or oxygen-deficient atmospheres.

- Reliable detection in a single easy to use and durable unit
- Simultaneously monitor for volatile organic compounds (VOCs) with low vapor pressures while measuring for combustible, toxic, or oxygen-deficient atmospheres
- Stable zero readings with fast response/clear times

Code	Description	Approval
SIRATO-2	SIRIUS PID INSTRUMENT C/W LEL SENSOR	N/A
10049804	ADDITIONAL CO SENSOR	N/A
10049805	ADDITIONAL H2S SENSOR	N/A
10049806	ADDITIONAL O2 SENSOR	N/A

## FIXED MONITORS

### MSA ULTIMA® X SERIES SENSORS



Designed to provide thorough, continuous monitoring of many hazardous gases, the indoor/outdoor Ultima X Series Gas Monitors offer excellent performance and MSA quality craftsmanship. DuraSource™ Technology offers extended sensor life, while HART provides convenient setup, calibration and diagnostics. A single circuit board increases reliability, while our patented sensor disconnect-underpower feature allows all sensors to be replaced in hazardous areas without area declassification. Our scrolling LCD screen display sensor reading and gas type, while the calibration process includes date stamping and the ability to calibrate locally or remotely.

- Indoor/outdoor monitors feature HART, which provides more information and features convenient set-up, calibration and diagnostics
- Interchangeable smart sensors eliminate need for reconfiguration
- MSA's patented sensor design allows sensor replacement without declassifying the hazardous area
- DuraSource Technology extends sensor life
- Automatic calibration adjustments and date stamping
- Stainless steel and polycarbonate models available

Code
CUSTOM-033

### MSA PRIMA® X GAS TRANSMITTER



Designed to detect gases indoors or outdoors, our PrimaX P Gas Transmitter measures oxygen and toxic and combustible gases. The flameproof transmitter is housed in a powder-coated aluminum enclosure that will protect it in extremely dangerous conditions. The unit also features a large, easy-to-read LCD screen and three LED status indicators for up-to-the-second reporting. The transmitter attaches to an integral mounting plate for easy installation, and it can be easily calibrated using the built-in keypad.

- The indoor/outdoor PrimaX P Gas Transmitter detects toxic gases, oxygen and combustible gases
- Worry-free transmission with a 4-20 mA output signal and optional HART digital communication
- Plug-in sensors and easy installation and calibration make this transmitter virtually trouble-free
- Large LCD screen provides information at a glance, while three LEDs give clear status indication

Code
CUSTOM-023



# FIXED MONITORS

## MSA PRIMA® X IR GAS TRANSMITTER



Every feature of the PrimaX IR Gas Transmitter is designed with reliability in mind to withstand the most challenging environmental conditions throughout the product’s life. MSA’s PrimaX IR Gas Transmitter offers LEL (Lower Explosive Limit) combustible gas detection through a patented PrimaX Gas Transmitter IR dual source design. A redundant IR source provides reliability and uninterrupted monitoring should a source failure occur. Furthermore, the possibility of obscurations due to rain, fog, dirt, dust, and other environmental conditions is minimized due to dual source design.

- Dual source design provides redundancy and reliable, uninterrupted performance
- Environmental guard sensor housing for fast, efficient response time
- Heated optics prevent condensation buildup
- 4–20 mA analog output

Code
CUSTOM-051

## DISPOSABLE MASKS

### DELTA PLUS MASKS NON VALVED



Box of 20 non woven synthetic fibre disposable mask . Moulded mask. Nose clip for adjustment. Foam edge under nose clip. Dolomite tested for anti-clogging.

#### EN149:2001+A1:2009 : FILTERING HALF-MASKS AGAINST PARTICLES

Code	Description	Colour
M1100C	FFP1 – 20/box	White
M1200C	FFP2 – 20/box	White

### DELTA PLUS MASKS VALVED



Non woven synthetic fibre disposable mask . Moulded mask. Nose clip for adjustment. Foam edge under nose clip. Dolomite tested for anti-clogging.

#### EN149:2001+A1:2009 : FILTERING HALF-MASKS AGAINST PARTICLES

Code	Description	Colour
M1100VC	FFP1 – 10/box	White
M1200VC	FFP2 – 10/box	White
M1200VWC	FFFP2 Carbon Activated – 10/box	Charcoal
M1300VC	FFP3 – 5/box	White

### DELTA PLUS FOLDABLE MASKS VALVED



Non woven synthetic fibre. Nose clip for adjustment. Foam reinforcement under nose clip. High performance exhalation valve. Horizontal folding. Dolomite tested for anti-clogging.

#### EN149:2001+A1:2009 : FILTERING HALF-MASKS AGAINST PARTICLES

Code	Description	Colour
M1200VPC	FFP2 – 10/box	White
M12300VPWC	FFP2 Carbon Activated Organic Vapor – 10/box	White
M1300VPC	FFP3 – 10/box	White

## DISPOSABLE MASKS

### DELTA PLUS FOLDABLE MASKS VALVED

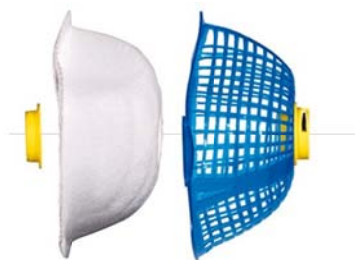


Non woven synthetic fibre. Nose clip for adjustment. Foam reinforcement under nose clip. High performance exhalation valve. Vertical folding. Dolomite tested for anti-clogging

**EN149:2001+A1:2009 : FILTERING HALF-MASKS AGAINST PARTICLES**

Code	Description	
M1100VBC	FFP1 – 10/box	White
M1200VBC	FFP2 – 10/box	White
M1300VBC	FFP3 – 10/box	White

### DELTA PLUS SPIDER MASK VALVED



Reusable dust mask. Reusable moulded mask shell in TPE shell. Replaceable non woven synthetic fibre disposable filter. Innovative system that reduces cost and optimizes comfort. High performance exhalation valve that serves to change the filter layer like a screw. Adjustable straps. Back fixing with clip.

**Sold by 1 box of 1 reusable moulded mask shell + 20 FFP2 spare disposable filters.**

**EN149:2001+A1:2009 : FILTERING HALF-MASKS AGAINST PARTICLES**

Code	Description	
M1200SM	FFP2 Including 20 filters	White
M1300SM	FFP3 Including 20 filters	White
M1200SMR30	Pack of 30 FFP2 Refills	White
M1300SMR30	Pack of 30 FFP3 Refills	White

## REUSABLE MASKS

### MSA ADVANTAGE® 200 LS HALF MASK



The Advantage 200 LS is a comfortable, efficient and economic half mask. It is ideal for applications where workers are exposed to various hazards from job to job, such as high concentrations of fumes, mists and gases.

#### EN140 | SABS APPROVED

Code	Description	Colour
430356	Advantage Mask Medium	Blue

### MSA ADVANTAGE® 420 HALF MASK



With its UniBond over-mold facepiece, AnthroCurve™ face seal, and low profile design, the Advantage 420 Respirator is the superior option for respiratory protection. The over-mold facepiece and face seal ensure the unit provides an excellent fit and comfort to the wearer. The unique yoke and harness design (patent pending) allows a user to easily don and doff the state-of-the-art respirator while maintaining a customized fit.

#### EN140 | SABS APPROVED

Code	Description	Colour
10102274	Advantage 420 Mask Medium	Black

### MSA ADVANTAGE® 3000 FULL FACE MASK



The full face mask series Advantage 3000 provides both protection and unparalleled comfort. The soft sealing line made of hypoallergenic silicone provides a pressure free fit. The large, optically corrected lens ensures a clear, undistorted view, while the grey-blue colour gives the mask an aesthetic appearance. Donning the Advantage 3000 is unbelievably quick, simple and accomplished without painful hair pulling. The patented Advantage head harness gives a perfect face piece-to-face fit.

#### EN136 | SABS APPROVED

Code	Description	Colour
10027726	Advantage 3221 Mask	Grey/Blue

## REUSABLE MASKS

### MSA ADVANTAGE® CARTRIDGES



Crafted for easy installation and strong protection, Advantage Respirator Cartridges use a bayonet-style design for easy mounting. With low-lug height and lead-in connectors, the cartridges lock into place with only a single twist.

**EN14387 | SABS APPROVED**

Code	Description	Packaging	Colour
430372	A2P3 Cartridge	2prs/pack	Grey
430373	A2B2E1K1 Cartridge	2prs/pack	Grey
430374	A2B2E1K1P3 Cartridge	2prs/pack	Grey
430375	P3 Cartridge	2prs/pack	Grey

### MSA FULL FACE GAS MASK



Crafted for easy installation and strong protection, Advantage Respirator Cartridges use a bayonet-style design for easy mounting. With low-lug height and lead-in connectors, the cartridges lock into place with only a single twist.

**EN148-1 | SABS APPROVED**

Code	Description	Colour
2055-790	Auer 3S Basic Full Face Mask	Black
10080822	Replacement Lens	Clear
20614	A2P3 Hazmat Canister	Black
20617	K2P3 Hazmat Canister	Black
20618	A2B2E2K1P3 Canister	Black

### MSA FULL FACE GAS MASK



Container for advantage masks.

Code	Description	Colour
10026179	Mask Container	Black

## POWERED AIR PURIFYING RESPIRATORS

### OPTIMAIR® 3000 PAPR



With three possible configurations, the OptimAir 3000 offers versatility, ergonomic design and state-of-the-art features. The unit features a microprocessor-controlled, variable-speed motor to ensure the user gets an optimal amount of air. The respirator features one-button operation and weighs less than 1.5 kg for convenience and freedom of movement. When used with a hood, the unit's alarm is sent through the hose and can be heard in loud environments, while the five-level battery indication signals how much life the battery has left.

Code	Description
10049557	Standard OptimAir 3000 Unit
10049631	Hose
10049635	Filter – ABEK

## ESCAPE RESPIRATORS

### MSA MSR 2



The MSR 2 provides protection against hazardous gases of the types A, B, E, K and against particles (P2). Device is packaged in a robust carrying container with a belt clip.

#### DIN 58647.7

Code	Description	Duration
D2264701	MSR 2	15 mins

### MSA MINISCAPE



Using cutting-edge technology, the miniSCAPE respirator provides minutes of safety when seconds count. The portable respirator uses the new-generation TabTec filter, fits in a user's pocket and protects against numerous gases and vapors.

#### DIN 58647-T7 (ABEK-5)

Code	Description	Duration
10038560	MINISCAPE	5 mins



# ESCAPE RESPIRATORS

## MSA S-CAP HOOD



This highly visible, one-size-fits-all yellow hood offers protection against smoke and gas from fires, especially carbon monoxide. The easy-to-use unit dons quickly and features a nose cup for a wide variety of head and face sizes, while the cotton neck seal ensures a tight fit. The high-performance filter offers thorough protection, while the wide lens provides an increased field of vision and the low breathing resistance reduces claustrophobia.

### EN403 | SABS APPROVED

Code	Description	Duration
10064645	S-CAP In Wall Box	15 mins
10064644	S-CAP In Cardboard Box	15 mins

## MSA SMOKE HOOD



Designed especially for the offshore oil industry, this self-adjusting, highly visible orange hood offers protection against radiant heat and smoke. The one-size-fits-all unit dons quickly and features an elastic neck seal and high-performance filter for thorough protection. The large window and low breathing resistance offer an increased field of vision and reduce claustrophobia.

### EN403 | SABS APPROVED

Code	Description	Duration
B1440005	Smoke Hood	15 mins

## SELF CONTAINED BREATHING APPARATUS

### MSA AIRXPRESS SCBA



This safe, well-performing SCBA system is just right for the most budget-conscious. Streamlined for efficiency, it meets the specialized demands of both industry and emergency response. Available in two configurations, the system features essential safety components, such as a first-stage pressure reducer.

#### EN137 | SABS APPROVED

Code	Description	Duration
10111838	AirXpress Backplate With Demand Valve	
10031385	Ultra Elite PS Maxx Full Face Mask	
31626	6ltr 300 Bar Steel Cylinder	30-45mins
D5103976	6ltr 300 Bar Composite Cylinder	30-45mins

### MSA AIRMAXX SCBA



This high-quality SCBA provides comfortable, outstanding respiratory protection. Ruggedly reliable and flexible, it's a popular choice for a wide range of maintenance or rescue operations, including firefighting. Designed to reduce stress and fatigue. The ergonomically designed and optimally balanced AirMaXX backplate is adjustable to fit all body sizes.

Based on decades of experience, we also offer two SCBA presets: AirMaXX & eXXtreme – configured systems for the most common applications.

#### EN137 | SABS APPROVED

Code	Description	Duration
10060803	AirMaxx SL Backplate Assembly	
10023688	AutoMaxx PS-Maxx Demand Valve	
10031385	Ultra Elite PS Maxx Full Face Mask	
31626	6ltr 300 Bar Steel Cylinder	30-45mins
D5103976	6ltr 300 Bar Composite Cylinder	30-45mins

## SCBA COMPLEMENTARY PRODUCTS



### MOTIONSCOUT

This stand-alone personal alert safety systems detects the cessation of bodily movement and activates an automatic alarm. For enhanced safety the alarm can be activated manually also. It is extremely simple to use. The sensitive, electronic motion sensor recognises all normal body Movements. Maintenance-free and durable - the motionSCOUT guarantees a great cost-performance-ratio.

**EN403 | SABS APPROVED**

Code	Description	Duration
10088031	Motionscout	200 hrs



### ALPHA PERSONAL NETWORK

The alphaSCOUT personal monitor and alarm is the central element of the optional alpha personal network. Since it is wireless and completely detached from the SCBA, the alphaSCOUT is always at hand. The wireless and fully disengaged alphaSCOUT is the next generation of ICU [Integrated Control Unit]. It receives pressure information from the transmitter on the back plate and then calculates the remaining service time. A motion detector and alarm signal are also integrated.

**EN APPROVED**

Code	Description
10058211	Alpha Mitter
10086118	Alpha Hud

## ESCAPE RESPIRATORS

### MSA S-CAP AIR



This compressed-air emergency escape device provides 15 minutes of life-saving respiratory protection in extremely toxic or oxygen-deficient environments. Featuring fast, automatic activation, fluorescent protective carrying bag, and three liters of 200 bar compressed air, this device is ideal for use on ships, off-shore oil rigs, refineries, water utilities and confined spaces.

#### EN1146 APPROVED

Code	Description	Duration
10111838	S-Cap Air	15 mins

### MSA SAVOX CHEMICAL SELF CONTAINED SELF - RESCUER



This small, robust KO<sub>2</sub> respiratory device delivers safe and immediate oxygen on demand for escape or rescue. Packed airtight in a stainless steel container, this lightweight device is designed to be worn on a belt for easy opening and use. Dons in seconds. The TR device allows quick and economic training of donning and use by simulating the weight and properties of real units.

#### EN13794 | SANS APPROVED

Code	Description	Duration
10052029	Savox Self Rescuer	30 mins

# COVERALLS



## D59 ZERO FLAME COVERALLS

Fully tripple stitched suits with YKK brass zips and Flame Retardant / Acid Resistant reflective tape on both Arms & Legs.

### SABS APPROVED

Code	Description	Colour	Sizes
D59FA-J	D59 Jacket	Navy Blue	32 - 56
D59FA-P	D59 Trousers	Navy Blue	32 – 56
D59FA-O	D59 Boilersuit	Navy Blue	32 – 56



## NOMEX COVERALLS

Nomex navy blue fire retardant overall suits come with flame retardant silver reflective.

### NFPA 2112 | ASTM F1506 | SABS APPROVED

Code	Description	Colour	Sizes
NOMEX-J	Nomex Jacket	Navy Blue	32 – 56
NOMEX-P	Nomex Pants	Navy Blue	32 - 56

- Standard overalls available
- 100% Cotton, Polycotton or Denim
- Various colours

## COVERALLS



### DELTA PLUS PANOSTYLE COVERALLS

PANOSTYLE® 1pce working overall. Zip fastening under bias. Elasticated waist. Elasticated wrist. 7 pockets. Kneepad pockets. Badge holder.

65% polyester / 35% coton 235 g/m<sup>2</sup>

#### EN340 APPROVED

Code	Description	Colour	Sizes
M6COMGR	1pce Panostyle Coverall	Grey-Green	XS-3XL
M6COMGO	1pce Panostyle Coverall	Grey-Orange	XS-3XL
M6COMBM	1pce Panostyle Coverall	Navy-Orange	XS-3XL



### DELTA PLUS PANOSTYLE COVERALLS

PANOSTYLE® 2pce working overall. Zip fastening under bias. Elasticated waist. Elasticated wrist. 7 pockets. Kneepad pockets. Badge holder.

65% polyester / 35% coton 235 g/m<sup>2</sup>

#### EN340 APPROVED

Code	Description	Colour	Sizes
M6VESGR	Panostyle Jacket	Grey-Green	XS-3XL
M6VESGO	Panostyle Jacket	Grey-Orange	XS-3XL
M6VESBM	Panostyle Jacket	Navy-Orange	XS-3XL



### DELTA PLUS PANOSTYLE COVERALLS

PANOSTYLE® working dungarees 65% polyester / 35% cotton. Elasticated waist on both sides. Adjustable elasticated braces. 6 pocket.

65% polyester / 35% coton 235 g/m<sup>2</sup>

#### EN340 APPROVED

Code	Description	Colour	Sizes
M6SALGR	Panostyle Dungaree	Grey-Green	XS-3XL
M6SALGO	Panostyle Dungaree	Grey-Orange	XS-3XL
M6SALBM	Panostyle Dungaree	Navy-Orange	XS-3XL





# HEAD PROTECTION

## TECHNICAL INFORMATION

### SAFETY HELMET

#### ► HOW TO PROTECT YOURSELF ?

To choose the correct safety helmet.

- **To identify the risk :** falling bumps or combined risks (hearing protection and face protection).

The safety helmet has three functions :

- **Antipenetration** for an effective skull protection.
- **Shock absorber** because the cap and the harness absorb shocks.
- **Deflector** thanks to a suitable design which makes it possible to deflect the fall of an object from the top of the head.

There is in addition a selection of accessories which offers a face and hearing protection.

#### ► STANDARDS

##### • EN397 : protective helmets for industry

Each helmet must bear a moulded or printed marking : the existing European standard number, the name or reference mark of the manufacturer identification, the quarter and year of manufacture, the helmet type, the size or size range. The instructions or recommendations of adjustment, assembly, use, cleaning, disinfection, maintenance and storage are specified in the instructions of use.

##### • EN812 : bump caps for industry

They are essentially intended for inside use. A bump cap is not intended to protect against the effects of falling objects and must not under any circumstances replace a protective industrial helmet.

### HEARING PROTECTION

#### ► HOW TO PROTECT YOURSELF ?

To choose the correct product for hearing protection.

- **Identify the nature of the noise :** stable, fluctuating, intermittent, pulse.
- **Measure the noise at the working station :** intensity (dB) and volume (Hz).
- **Calculate the reduction necessary to return on an acceptable ambient level (80-85 dB).**
- **Determine the exposure time.**

The correct ear defender is the one which allows voice noise (Low intensity) to pass and reduces the intense noise to a reasonable scale (ranging between 75 and 80 dB).

The workplace noise should be measured and the SNR (Standard Noise Reduction) used as a simple element of selection.

#### ► STANDARDS

##### • EN352 : exigences of safety and tests

EN352-1 : the ear-muffs.

EN352-2 : the earplugs.

EN352-3 : the adjustable head defenders for the safety helmets.

These standards establish requirements with regards to the manufacture, the design, performances and test methods. They stipulate the putting at disposal relative to the characteristics.

##### • EN458 : hearing protection

Recommendations for selection, use and maintenance.

### DISPOSABLE BREATHING PROTECTION

#### ► HOW TO PROTECT YOURSELF ?

To choose the correct breathing protection.

- **Identify the type of risk :** dust, fume,...
- **Identify the toxic product.**
- **Locate and record toxicity (concentration).**
- **Compare with the AVE/VLE.**
- **Determine the type of filter (P1, P2 or P3).**

This step must take the environment of the exposed working station into consideration (moisture, temperature,...).

### RESPIRATORY MASKS

Respiratory masks give you protection against respiratory attacks : dust, aerosols, fume or gas.

#### ► HOW TO PROTECT YOURSELF ?

To choose the correct respiratory apparatus (half-mask or complete mask composed of one or two cartridges).

- **Identify the type of risk :** dust, fume, gas, vapours,...
- **Identify the toxic product.**
- **Locate and record its toxicity (concentration).**
- **Compare with the AVE/LVE.**
- **Determine the type of filters :** With A, B, E, K and its class 1, 2, 3.





This step must take into account of the environment of the exposed place (moisture, temperature,...).

#### ► THE CHOICE OF A FILTER

Each filter or cartridge is identified with a colour code.

Example for a filter ABEK + P :






FILTER USE CHART		
Gas and vapour filters	Colour code	Type of protection
Type A		Protects from organic gases and vapours whose boiling point is > 65°C (solvents and hydrocarbons).
Type B		Protects from inorganic gases and vapours, except for carbon monoxide.
Type E		Protects from sulphur dioxide and some acid vapours and gases.
Type K		Protects from ammoniac and some amine derivatives.



# HEAD PROTECTION

## TECHNICAL INFORMATION

### DUST AND AEROSOL FILTERS

Type	Colour code	Protection
P1		Protects from non-toxic dust and/or water-based aerosols.
P2		Protects from slightly toxic or irritating solid aerosols and/or liquids.
P3		Protects from solid aerosols and/ or liquids listed as toxic.

### FILTER ABSORPTION CLASS FOR GASES AND VAPOURS

Class 1	Low capacity filter (pollutant concentration < 0.1% or 1000 ppm).
Class 2	Average capacity filter (pollutant concentration < 0.5% or 5000 ppm).
Class 3	High capacity filter (pollutant concentration < 0.1% or 10 000 ppm).
ppm	Concentration in parts per million.



### ► GLOSSARY

- **Aerosols and aqueous fogs** : small droplets produced during pulverization.
- **Dusts** : solid particles suspended in the air.
- **APV (Assigned Protection Value)** : level of protection achieved in the workplace by 95% of operators trained in the wearing of respiratory protective devices or PRD and properly using after control a well maintained and adjusted device.
- **Fumes** : small particles suspended in the air.
- **STEL (Short Terme Exposure Limit)** : it is the measured concentration over a maximum time of 15 minutes that it is advisable not to exceed.
- **TWA (Time Weighted Average)** : limit value established for an exposure time equal to the work day, corresponding to the toxic risk in the long term. It is established for a workday of 8 hours.

### ► STANDARDS

The main standards concerning the respiratory apparatuses :

- **EN136 : overall masks**  
It contains laboratory tests and practical performance tests to check the conformity with resistance to temperature, to impacts, to flame, to thermal radiation, to traction, resistance to cleansers and disinfectants. Furthermore, the visual inspection must concern the marking and the manufacturers' informations guide.
- **EN140 : half-masks and quarter-masks**  
It contains laboratory tests and practical performance tests to check the conformity with resistance to impacts, to cleaners and disinfectants, to temperature, to flame and respiratory resistance.
- **EN14387 : gas filters and compound filters**  
It contains laboratory tests to check the conformity with resistance to impacts, to temperature, to humidity and corrosive atmospheres, and with mechanical and respiratory resistance.
- **EN143 : filters against particles**  
It contains laboratory tests to check the conformity with resistance to impacts, to temperature, to humidity and corrosive atmospheres and with mechanical and respiratory resistance.
- **EN149 : filtering half-masks**  
It contains laboratory tests to check the conformity with resistance to impacts, to temperature, to humidity and corrosive atmospheres and with mechanical and respiratory resistance.
- **EN405 : half-masks fitted with valves and gas filters or compound filters**  
It contains laboratory tests to check the conformity with resistance to handling and wear, to impacts, to flame and with respiratory resistance.

### CLASSIFICATION OF THE FILTERS

Class	FFP1	FFP2	FFP3
Minimum efficiency %	78%	92%	98%
Total inward leakage	22%	8%	2%
Nominal protection factor	4.5	12.5	50
Assigned Protection Value (APV)	4 X	10 X	20 X





# HEAD PROTECTION

## TECHNICAL INFORMATION

### ► USER GUIDE FOR BREATHING APPARATUS FILTER FOR POLLUTING SUBSTANCES

Each toxic substance has an occupational concentration limit, beyond which respiratory protection is essential. These values can be expressed in ppm (parts per million) or mg/m<sup>3</sup>. There is a limit value for exposure measured at 8 hours (LV), and a limit value for short-term exposure measured over 15 minutes (STEL).

Substances	Filter	p.p.m.	AVE mg/m <sup>3</sup>	ELV mg/m <sup>3</sup>	Half mask	Full mask
Acetaldehyde	Ax	100	180			●
Acetic acid	A			25	►	●
Acetic anhydride	B			20	►	●
Acetone	Ax	750	1800			●
Acetylene	◆					●
Acids with ammonia	BK					●
Acrolein	Ax+P			0,25		●
Acrylic acid	A	10	30		►	●
Acrylonitrile	A	4	9			●
Alcohols	A/Ax				►	●
Allyl alcohol	A			5		●
Allyl bromide	A				►	●
Allyl chloride	Ax			3		●
Allyl ether	A			22	►	●
Aluminium	P		10			●
Alundun	P				►	●
Ammonia	K	25	18			●
Amyl acetate	A	100	30		►	●
Amyl alcohol	A	100	360			●
Amyl butyrate	A				►	●
Amyl formate	A				►	●
Amyl nitrate	A				►	●
Aniline	A	2	10			●
Anthracene	P				►	●
Antimony	P		0,5			●
Aqua regia	B+P				►	●
Argon	◆					●
Aromatic amine	A				►	●
Arsenic	P			0,2		●
Arsine	AB+P	0,05	0,2			●
Asbestos	P		0,1*		►	●
Barium	P		0,5			●
Bauxite	P				►	●
Benzene	A			30		●
Benzidine	A+P				►	●
Benzoic acid	A+P				►	●
Benzole	A				►	●
Benzoquinone	A+P	0,1	0,4			●
Benzyl bromide	A				►	●
Benzylaliline	P				►	●
Beryllium	P			0	►	●
Boroethane	B+P	0,1	0,1			●
Boron fluoride	B+P		2,5		►	●
Bromacetone	A				►	●
Bromochloromethane	Ax+P	20	1050			●
Bromine	B			0,7		●
Bromobenzene	A				►	●
Bromoethane	Ax	200	890			●
Bromoform	A			5	►	●
Butadiene	Ax			2200		●
Butane	◆					●
Butyl acetate	A	150	710		►	●
Butyl alcohol	A	100	360		►	●
Butyl butyrate	A				►	●
Butylamine	K			15	►	●
Butylene	Ax				►	●
Cadmium	P		0,05		►	●
Cadmium oxide	P			0,05		●
Carbon disulphide	Ax	10	30			●
Carbon monoxide	◆	50	55			●
Carbonic acid	◆					●
Carborundum	P				►	●
Caustic soda	P		2		►	●
Chlorine	B			3	►	●
Chloroacetaldehyde	A			3	►	●
Chlorobenzene	A	10			►	●
Chlorobutadine	Ax	10	36			●
Chloroethane	Ax	100	2600			●
Chloroform	Ax	5	25			●
Chloropicrin	A	0,1	0,7			●
Chloroprene	Ax	10	36			●
Chlorotrifluoride	B			0,4		●
Chromic acid	BE+P			0,05		●
Chromium	P		0,5		►	●
Coal	P				►	●
Cobalt	P		0,1		►	●
Copper	P		2		►	●
Cotton	P		0,2		►	●
Cresols	A	5	22		►	●
Cyanogen bromide	B+P				►	●
Cyanogen chloride	B			0,6		●
Cyclohexane	A	300	1050		►	●
Cyclohexanol	A	50	200		►	●
Cyclohexanone	A	25	100		►	●
Decyl hydride	A				►	●
Diaminoethane	K			25	►	●
Diazomethane	A			0,4		●
Dibutyl ether	A			270	►	●
Dichloroethane	Ax+P	10	40			●
Dichloroethylene	Ax	5	20			●
Dichloroethylether	A			30	►	●
Dichloromethane	Ax+P	100	360			●
Dichlorofluoromethane	◆	10	40			●
Diethylamine	Ax			30		●
Diethylether	Ax			1200		●
Dimethylaniline	A	5	25			●
Dimethylether	Ax					●
Dimethylhydrazine	K	0,1	0,2			●
Dimethyltriethylamine	Ax					●
Dimethylpropane	Ax					●
Dioxane	A	10	35		►	●
Esters	A/Ax				►	●
Ethane	◆					●
Ethanol	A			1900	►	●
Ethanolamine	A	3	8			●
Ethers	A/Ax				►	●
Ethyl acetate	A	400	1400		►	●
Ethyl alcohol	Ax	200	890		►	●
Ethyl bromide	A				►	●
Ethyl butyrate	A				►	●
Ethyl chloride	Ax	100	2600		►	●
Ethyl chloroacetate	A				►	●
Ethyl ether	Ax			1200		●
Ethyl formate	Ax	100	300			●
Ethyl iodide	A				►	●
Ethyl nitrate	Ax	100	310			●
Ethyl sulfate	A				►	●
Ethylamine	K	10	18		►	●
Ethylene	◆					●
Ethylene dibromide	A				►	●
Ethylene dichloride	A				►	●
Ethylene imine	K			1		●
Ethylene oxide	Ax	1				●
Firesmoke	AB+P		5		►	●
Fluorine	B			2		●
Formaldehyde	B	0,5				●
Formaldehyde	B			3		●
Formol	B					●
Freon	AB				►	●
Furfural	A			20		●
Gasoline vapors	A		1000		►	●
Glycol	A				►	●
Helium	◆					●
Heptane	A	400	1600			●
Hexane	A	50	170			●
Hexanol	A					●
Hexon	A			410		●
Hydrazine	K+P	0,1	0,1			●
Hydrobromic acid	B+P				►	●
Hydrocarbons	A		1000		►	●
Hydrochloric acid	B			7,5	►	●
Hydrocyanic acid	B	2	2			●
Hydrofluoric acid	B+P			2,5		●
Hydrogen	◆					●
Hydrogen peroxide	B				►	●
Hydrogen phosphide	AB	0,1	0,13			●
Hydrogen selenide	AB	0,02	0,08			●
Hydrogen sulfide	AB	5	7			●
Iodium	P			0,1	►	●
Insecticide	AB+P				►	●
Iron oxide	P			5		●
Iscyanates	AB+P	0,02	0,05			●
Isopropyl alcohol	A			980	►	●
Ketene	◆	0,5	0,9			●
Ketones	A/Ax				►	●
Lead (vapours)	A+P		0,1		►	●
Liquid pesticides	AB+P				►	●
Manganese	P		1		►	●
Mercury	Hg+P		0,05			●
Methanol	Ax	200	260			●
Methyl acetate	Ax	200	610			●
Methyl alcohol	Ax	200	260			●
Methyl bromide	Ax	5	20			●
Methyl butyl ketone	A	5	20			●
Methyl butyrate	A				►	●
Methyl chloride	Ax	50	105			●
Methyl ether	Ax					●
Methyl ethyl ketone	A			590	►	●
Methyl formate	Ax	100	250			●
Methyl iodide	Ax			28		●
Methyl nitrate	A/Ax	100	250		►	●
Methyl propyl ketone	A	200	700		►	●
Methylamine	K			12	►	●
Methylaniline	A	0,5	2			●
Methylbutane	Ax					●
Methylene bromide	Ax				►	●
Methylene chloride	Ax			40		●
Methylene iodide	A				►	●

Substances	Filter	p.p.m.	AVE mg/m³	ELV mg/m³	Half mask	Full mask
Methylpropane	Ax					●
Methylsulphate	A					●
Monochloroacetone	A				►	●
Monomer styrene	A	50	215		►	●
Naphtylamine	P	10	50		►	●
Neon	◆					●
Nickel	P		1			●
Nickel carbonyl	◆					●
Nitric acid	B+P	2	5			●
Nitroaniline	B+P		3			●
Nitrobenzene	A	1	5			●
Nitroethane	A	100	310		►	●
Nitrogen	◆					●
Nitroglycerine	A	0,15	1,5			●
Nitromethane	B	100	250			●
Octane	A		0,1			●
Oleum	B+P				►	●
Oxalic acid	B+P		1		►	●
Ozone	AB	0,1	0,2			●
Palladium	P				►	●
Parasiticide	AB+P				►	●
Parathion	AB+P		0,1			●
Pentachlororhthane	A				►	●
Pentane	Ax	600	1800			●
Perchloroethylene	A	50	335		►	●
Phenol	A	5	19			●
Phenylhydrazine	A			20		●
Phosgene	B			0,4		●
Phosphoric acid	B+P		1		►	●
Phosphoric esters	AB+P				►	●
Phosphorus	P		0,1		►	●
Phosphorus trichloride	B+P		3			●
Picric acid	A+P		0,1			●
Polyester resin	AB					●
Powder pesticides	P				►	●
Propane	◆					●
Propine	◆	1000	1650			●
Propyl acetate	A	200	840		►	●
Propyl alcohol	A	200	500		►	●
Propyl chloride	Ax				►	●
Propyl ether	A				►	●
Propyl formate	A				►	●
Propyl sulphide	A				►	●
Pyridine	A	5	15		►	●
Selenium	P	0,05	0,2		►	●
Short chain amine	K				►	●
Silicion chloride	◆					●
Silver	P		0,1		►	●
Sodium carbonate	P				►	●
Solvents (general)	A/Ax				►	●
Stibine	◆					●
Sulfur (hexafluoride)	P	1000	6000		►	●
Sulfur dioxide	E	2	5		►	●
Sulfur hexafluoride	AB+P				►	●
Sulfur trioxide	B+P				►	●
Sulfure chloride	B+P			6	►	●
Sulfure pentafluoride	B+P			0,25		●
Sulfuric acid	B+P		1		►	●
Sulfurylchloride	B+P				►	●
Talc	P				►	●
Tellurium	P		0,1		►	●
Tetrabromomethane	A	0,1	1,4			●
Tetrachloroethane	A	1	7		►	●
Tetrachloroethylene	A			670	►	●
Tetraethyl lead	A		0,1			●
Tetramethyl lead	A		0,15			●
Tetranitromethane	B	1	8			●
Thallium	P		0,1		►	●
Thionyl chloride	B+P				►	●
Tin	P		0,1		►	●
Toluene	A	100	375		►	●
Toluidine	A			22		●
Trichloroethane	A	300	1650		►	●
Trichloroethylene	A	75	405		►	●
Trichloromethane	Ax+P			1900		●
Triethylamine	A			40	►	●
Trifluoromethane	AB				►	●
Trimethylamine	K			25	►	●
Vanadium	P		0,05		►	●
Vinyl acetate	A	10	30		►	●
Vinyl bromide	Ax				►	●
Vinyl chloride	Ax			6		●
Welding vapours	B+P				►	●
Xylene	A	100	435		►	●
Xylidine	A	2	10		►	●
Xylophone	A+P				►	●
Xytl bromide	◆					●
Xytl chloride	A+P				►	●
Zinc	P		10		►	●
Zinc oxide	P			5	►	●



# HEAD PROTECTION

## TECHNICAL INFORMATION

### SAFETY EYEWEAR

Safety eyewear provides protection from spray and splatter from particles, liquids and dust, and from chemical product fumes and radiation.

#### ► HOW TO PROTECT YOURSELF ?

Select the most suitable protective glasses or shields.

- **Identify the type of risk** : spray, radiation, other,...
- **Determine the type of protection** : spectacles-type safety glasses, goggles, face mask, cover goggles,...
- **Note the protective features** : scratch-resistant, fog-resistant, tinted,...
- **Select the type of eye-piece** : one-piece or double lens.
- **Choose the frame type** : design, classical,...

#### ► STANDARDS

##### • EN166 :

Applies to all types of individual protection of the eye which protects from hazards likely to damage the eye, except for nuclear radiation, x-rays, laser emissions and infrared emitted by low-temperature sources.

Does not apply to eye protection for which separate standards exist (anti-laser eye protection, sunglasses for general use,...).

#### • Symbol meaning :





- 1** : Optical class allowing permanent wear of the spectacles.
- S** : Increased robustness : steel ball of 22 mm diameter at 5.1 m/s.
- F** : Low energy impact : steel ball of 6 mm diameter at 45 m/s.
- B** : Medium energy impact : steel ball of 6 mm diameter at 120 m/s.
- A** : High energy impact : steel ball of 6 mm diameter at 190 m/s.
- 3** : Liquid resistance (droplets or splashes).
- 4** : Large dust particles resistance (size of  $> 5 \mu\text{m}$ ).
- 5** : Gas and fine dust particles resistance (size  $< 5 \mu\text{m}$ ).
- 8** : Short circuit electric arc resistance.
- 9** : Resistance to splashes of molten metal and penetration of hot solids.
- T** : High speed particles at extreme temperatures.
- N** : Resistance to fogging of lenses.
- K** : Resistance to surface damage by fine particles (anti-scratch).

#### • EN175 :

Specifications for the safety requirements for eye and face protection equipment for welding and related techniques.

### FILTERS

Special filters can eliminate certain parts of light and a high proportion of the electro-magnetic spectrum (ultraviolet rays, infrared rays...).

SPECTACLES LENS MARKING								
Lens color	Minimal transmission factor of visible light	Scale Nr	EN 166					
			UV filters (EN 170)		IR Filters (EN 171)	Sun filters (EN 172)		Welding (EN 169)
			2	2C	4	5	6	No code nr
			Colors perception may be altered	Colors perception is not altered		Without IR protection specification	With IR protection specification	
<div>CLEAR</div> <div></div>	80,0%	1,1				5-1,1	6-1,1	
	74,4%	1,2	2-1,2	2C-1,2	4-1,2			
<div>LIGHT SMOKE</div> <div></div>	58,1%	1,4	2-1,4	2C-1,4	4-1,4	5-1,4	6-1,4	
	43,2%	1,7	2-1,7	2C-1,7	4-1,7	5-1,7	6-1,7	
	29,1%	2	2-2	2C-2	4-2	5-2	6-2	
<div>SMOKE</div> <div></div>	17,8%	2,5	2-2,5	2C-2,5	4-2,5	5-2,5	6-2,5	
	8,0%	3,1				5-3,1	6-3,1	
<div>VERY DARK (for welding)</div> <div></div>	8,5%	3	2-3	2C-3	4-3			3
	3,2%	4	2-4	2C-4	4-4	5-4,1	6-4,1	4
	1,2%	5	2-5	2C-5	4-5			5
	0,44%	6			4-6			6
	0,16%	7			4-7			7
	0,061%	8			4-8			8
	0,023%	9			4-9			9
	0,085%	10			4-10			10
	0,0032%	11						11
	0,0012%	12						12
	0,00044%	13						13
	0,00016%	14						14
	0,000061%	15						15
	0,000023%	16						16

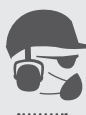
Lens marking is composed by 2 numbers (separated in the middle by a "-") :

CODE NUMBER : from 2 to 6. Welding lens have no code number.

SCALE NUMBER : from 1,1 (the highest % of transmission in visible light, the clearest lens) to 16 (the lowest % of transmission in visible light, the darkest lens).

VENITEX® RANGE : The blue colored possibilities are available on VENITEX® range.





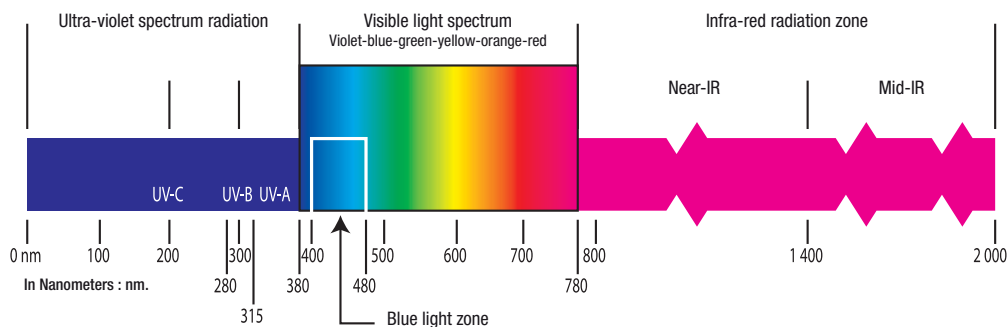
# HEAD PROTECTION

## TECHNICAL INFORMATION

### RISKS TO THE EYE FROM HARMFUL RADIATION

Zone	Wave length	Environment	Eyesight damage
UV-A	315-380 nm	Outdoor work.	Eye fatigue, partial blindness, cataract. Sunshine.
UV-B	280-315 nm	Sunlight. Industrial environment. Black light tests.	Cataract. Welder flash. Arc flash.
UV-C	100-280 nm	Industrial environment. Arc welding.	Cornea or crystalline lesions. Loss of eyesight.
Blue light	400-480 nm	Industrial environment. Computer work (fatigue, VDU). Electrical installations. Outdoor work.	Retinal lesions. Loss of eyesight. Blurring degeneration (age). Retinitis pigmentosis.
Infra-red	780-1400 nm (near IR) 1400-2000 nm (IR mid)	Electric welding. Molten work (glassmaking, steel production). Micro-wave processes. Sunlight.	Retinal lesions. Blurring degeneration (age). Retinitis pigmentosis (near-IR). Crystalline and cornea lesions (mid-IR).

### THE ELECTRO-MAGNETIC SPECTRUM



### RECOMMENDED USE OF DIFFERENT GRADE NUMBERS FOR ARC WELDING ACCORDING TO STANDARDS EN169 / EN175

	A current amperage																							
Process	1.5	6	10	15	30	40	60	70	100	125	150	175	200	225	250	300	350	400	450	500	600			
MMA	8							9		10		11		12			13			14				
MAG	8							9		10		11			12			13			14			
TIG	8					9			10		11			12		13								
MIG (heavy metals)	9									10		11			12		13		14					
MIG (light metals)	10											11		12		13		14						
Arc air gouging	10											11		12	13		14		15					
Plasma cutting	9									10		11	12			13								
Micro plasma welding	4		5	6		7	8		9	10		11		12										

This table is valid under normal conditions of use, in which the distance between the eye of the user and the mass of molten metal is approx. 50 cm and average light is approx. 100 lux.





# HAND PROTECTION

## TECHNICAL INFORMATION

### FOOD COMPATIBILITY



#### ► FOOD COMPATIBILITY IS GOVERNED BY :

**Regulation (EC) N° 1935/2004 of the European Parliament and of the Council of 27<sup>th</sup> October 2004 on materials and articles intended to come into contact with foodstuffs.**

Materials and articles must be manufactured in compliance with good manufacturing practice so that, under normal or foreseeable conditions of use, they do not transfer their constituents to food in quantities which could :

- Endanger human health.
- Bring about an unacceptable change in the composition of the food or a deterioration in the organoleptic characteristics thereof.

**Food contact of plastic materials is governed by directive 2002/72/CE.**

PVC/Vinyl or even Latex/Nitrile gloves (unless local legislation exists) are directly subject to this directive.

It defines :

- Positives lists of authorized constituents.
- The purity criteria applicable to some of these constituents.
- Special migration limits in foodstuffs for certain constituents.
- Maximum residual quantities of some constituents in the material.
- An overall migration limit in foods (10 mg/dm<sup>2</sup> of material or 60 mg/kg of food).

**Directive 85/572/EC provides the list of simulants to be used for testing migration of constituents of plastic materials and articles intended to come into contact with foodstuffs :**

- Aqueous foods (pH > 4.5) : Simulant A.
- Acid food (pH ≤ 4.5) : Simulant B.
- Alcoholic foods : Simulant C.
- Fatty foods : Simulant D.

### THE EUROPEAN STANDARDS

In order to be approved for Category II ranking, protective gloves are subject to standardized requirements.

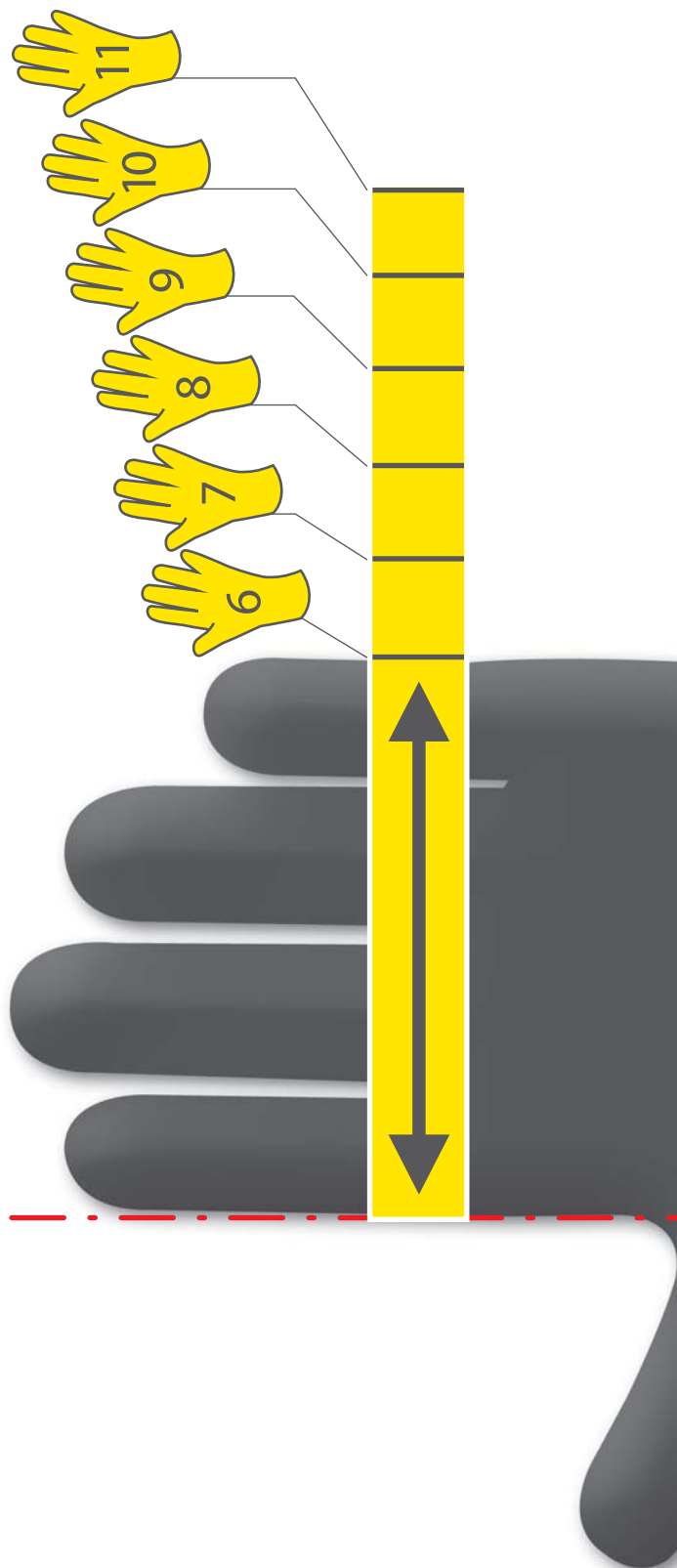
They must meet the general requirements contained in EN420, which are as follows :

- Conform to harmlessness (pH, chrome VI levels,...).
- Conform to the size charts (see chart on the right).
- Pass the dexterity test (adapting the product to the work station).
- Conform to the labelling, information and identification instructions.

### HAND MEASURING

#### ► CHECK YOUR SIZE :

Place your hand as shown on the drawing, with the red line between the thumb and the index finger. Read your size to the right of your hand.





# HAND PROTECTION

## TECHNICAL INFORMATION

### SIZES AS PER STANDARD EN420

Glove size	Hand dimensions (mm)		Minimal glove length
	Palm circumference	Length	
6	152	160	220
7	178	171	230
8	203	182	240
9	229	192	250
10	254	204	260
11	279	215	270

### STANDARDIZED LABELING/IDENTIFICATION

All our products meet the requirements in directive 89/686/EEC. Each is clearly identified by a standardized label, on which you will see :

- Our Venitex® brand logo.
- The product reference.
- The size.
- An information tag indicating that instructions (in a minimum of 9 languages) are available for the product.
- The standardization pictogram(s) with their performance ratings.

And of course the data sheet for the product and the statement of compliance are available by simple request and on line 24 hours/day on our Web site : [www.deltaplus.eu](http://www.deltaplus.eu)

### MECHANICAL RISKS

#### EN388 :

The EN388 standard applies to all types of protective gloves with respect to physical and mechanical aggression from abrasion, cutting from slicing, perforation and tearing.



#### Mechanical risks : Standard EN388

PERFORMANCE LEVELS		REQUIREMENTS	
0 to 4	0 to 5	0 to 4	0 to 4
			RESISTANCE TO PERFORATION Force required to pierce the sample with a standardized punch.
			RESISTANCE TO TEARING Maximum force required to tear the sample.
			RESISTANCE TO CUTTING WITH A BLADE Number of cycles required to cut the sample at constant speed.
			ABRASION RESISTANCE Number of cycles required to damage the sample at constant speed.

TEST	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
Abrasion resistance (number of cycles)	100	500	2000	8000	-
Blade cut resistance (index)	1,2	2,5	5,0	10,0	20
Tear resistance (N)	10	25	50	75	-
Puncture resistance (N)	20	60	100	150	-

### COLD RISK

#### EN511 :

The EN511 standard defines the requirements and test methods for cold protection gloves from cold transmitted by convection or conduction down to - 50°C. This cold can be from climatic conditions or industrial activity.



#### Risks from cold : Standard EN511

PERFORMANCE LEVELS			REQUIREMENTS
0 to 4	0 to 4	0 to 1	
			IMPERMEABILITY TO WATER
			RESISTANCE TO CONTACT COLD
			RESISTANCE TO CONVECTIVE COLD

### HEAT AND FIRE RISK

#### EN407 :

The EN407 standard specifies the test methods, the general requirements, the thermal performance and the labeling of gloves to protect from heat and fire. It applies to all gloves which must protect hands from heat and/or flames in any one or several of the following forms : fire, contact heat, convective heat, small spray of molten metal or large spray of melting metal.



#### Heat and fire thermal risks : Standard EN407

PERFORMANCE LEVELS	REQUIREMENTS
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PERFORMANCE LEVEL	CONTACT TEMPERATURE	THRESHOLD TIME (SECOND)
1	100°C	≥15
2	250°C	≥15
3	350°C	≥15
4	500°C	≥15





# HAND PROTECTION

## TECHNICAL INFORMATION

### ► WELDERS RISK

#### • EN12477 :

Requirements and test methods for gloves used for manual welding of metals, for cutting and related techniques. Welder gloves are ranked in two types : B when great dexterity is required, and A for other welding processes.

### ► AGAINST THE RISKS OF MICRO-ORGANISMS & CHEMICAL RISKS

#### • EN374-1 :

Standard EN374-1, protective gloves against chemicals and micro-organisms, specifies the performance requirements required for gloves for protecting users against chemical products and/or micro-organisms and defines the terms to be used.

**Penetration** (tested as per standard EN374-2) :

Diffusion, at a non molecular scale, of a chemical product and/or micro-organism through the porosities, seams, micro-holes or other imperfections present in the material of the protective glove.

**Permeation** (tested as per standard EN374-3) :

Process by which a chemical product diffuses through the material of a protective glove, at the molecular scale.

A glove is considered resistant to chemical products if it obtains a performance index to permeation at least equal to 2 for three test chemical products included in the following list of chemical products :

CODE LETTER	CHEMICAL PRODUCT
A	Methanol
B	Acetone
C	Acetonitrile
D	Dichloromethane
E	Carbon disulfide
F	Toluene
G	Diethylamine
H	Tetrahydrofurane
I	Ethyl acetate
J	n-Heptane
K	Caustic soda 40% (NaOH or sodium hydroxide)
L	Sulphuric acid 96%

PASSAGE TIME MEASURED (MIN)	PERFORMANCE INDEX TO PERMEATION
> 10	1
> 30	2
> 60	3
> 120	4
> 240	5
> 480	6

The glove will then carry the following pictogram :



Failing compliance with this requirement, the glove will carry the following pictogram :



### Examples of application :

The field of use is decisive, as depending on the case, the glove must only be water and airtight, resistant to micro-organisms, sealed against splashes of low concentrate chemical products, resistant to low concentrate chemical products or against chemical products. It is therefore highly important to consult the recommended fields of use.

EXAMPLES OF USES APPLICATIONS	MARKINGS	CATEGORIES AS PER 89/686/EEC
Waterproof glove for very frequent and prolonged use (dish washing gloves).	None	CE CAT I For Minor Risks
Glove against micro-organisms (bacteria, fungi).		CE CAT II For Intermediary Risks
Glove against splashes of low concentrate chemical products (water and air tight).		CE CAT II For Intermediary Risks
Glove offering low protection against chemical products (occasional contact).		CE CAT III For irreversible Risks
Glove against chemical products (direct and prolonged contact) .		CE CAT III For irreversible Risks

### • ISO2859 (DISPOSABLE GLOVES) :

Determine the acceptable quality level (AQL) : AQL 1.5 for instance.





# HAND PROTECTION

## TECHNICAL INFORMATION

### ► CHEMICAL RESISTANCE TABLE

	Natural latex	Neoprene	Nitrile	PVC vinyl		Natural latex	Neoprene	Nitrile	PVC vinyl
20% nitric acid	**	**	*	*	Isobutyl alcohol	***	***	***	***
30% and 5% hydrochloric acid	***	***	***	***	Isobutyl ketone	***	***		
30% formaldehyde	***	***	***	***	Kerosene		*	***	*
30% hydrofluoric acid	**	***	***	**	Lard oil		***	***	*
50% acetic anhydride	***	***	***	***	Linseed oil		***	***	*
85% lactic acid	*	***	***	***	Lubricating oils		*	***	*
85% triethanolamine	***	***	***	***	Magnesia	***	***	***	***
90% formic acid		***	*	*	Methyl acetate	*	***	*	*
Acetaldehyde	***	***	*		Methyl alcohol (or methanol)	***	***	***	***
Acetone	***	**			Methyl ethyl ketone	***	**		
Alcoholic beverages	***	***	***	***	Methyl isobutyl ketone	**	*		
Ammonium acetate	***	***	***	***	Methyl salicylate	***	***	***	***
Ammonium carbonate	***	***	***	***	Methylamine	***	**	***	***
Ammonium chloride	***	***	***	***	Methylaniline	*	*	***	***
Amyl acetate		*	*	*	Methylcyclopentane		*	***	*
Amyl alcohol	***	***	***	***	Methylene chloride		*	*	
Aniline	**	**	*		Methylformiate	*	***	*	*
Animal fats	*	***			Milk and dairy products	*	***	***	
Asphalt		*	***		Mineral greases		*	***	*
Beet-root	***	***	***	***	Mono ethanol amine	***	***	***	***
Benzaldehyde			*		Naphta		*	***	*
Benzene			*		Naphtalene		*	**	*
Benzyl alcohol	*	**	**	**	N-butylamine	***	***	***	***
Bichromate of potash	*	***	***	***	Nickel chloride	***	***	***	***
Bleach	***	***	***	***	Nitrate of ammonium	***	***	***	***
Borax	***	***	***	***	Nitrate of potassium	***	***	***	***
Brake oils (lockheed)	*	***	***	*	Nitrobenzene		*	*	
Bromides	***	***	***		Nitrohydrochloric acid		**	*	*
Butter		***	***	*	Nitropropane	***	**	*	
Butyl acetate		*	*	*	Non-alcoholic beverages	***	***	***	***
Butyl alcohol (or n-butanol)	***	***	***	***	Octyl alcohol	*	***	***	*
Calcium acetate	***	***	***	***	Oleic acid	*	***	***	*
Calcium chloride	***	***	***	***	Olive oil		***	***	*
Calcium fluophosphate	***	***	***	***	Oxalic acid	***	***	***	***
Calcium hydrate	***	***	***	***	Paraffin oil		*	***	*
Calcium nitrate	***	***	***	***	Peanut oil		***	***	*
Carbolic acid	*	**	**	**	Perfumes and essences	***	***	***	***
Carbon tetrachloride		*	**	*	Petroleum ether		**	***	
Castor oil		***	***		Petroleum products		*	**	*
Chlorinated lime	***	***	***	***	Petroleum spirit		**	***	*
Chlorine		***	***	***	Phenyl chloride		*	*	
Chloroacetone	***	***			Phosphates of calcium	***	***	***	***
Chloroform		*	**		Phosphoric acid	***	***	***	***
Chromic acid			*	**	Polyester resins		*	**	*
Citric acid	***	***	***	***	Potash flakes	***	***	**	***
Concentrated ammonia	***	***	***	***	Potassium acetate	***	***	***	***
Concentrated boric acid	***	***	***	***	Potassium bicarbonate	***	***	***	***
Concentrated laundry potash	***	***	**	***	Potassium carbonate	***	***	***	***
Concentrated laundry soda	***	***	*	*	Potassium chloride	***	***	***	***
Concentrated sulphuric acid		*		**	Potassium cyanide	***	***	***	***
Creosote	*	***	***	***	Potassium manganate	***	***	***	***
Cresol		***	***	***	Potassium phosphates	***	***	***	***
Crystallisable acetic acid	***	***	**	*	Potassium sulphate	***	***	***	***
Cutting oils		***	***	***	Poultry	*	***	***	
Cyclohexane		*	**		Propylene dichloride			*	
Cyclohexanol	***	***	***	***	Quick lime	***	***	***	***
Cyclohexanon	*	*			Shampoos	***	***	***	***
Dead lime	***	***	***	***	Silicates	***	***	***	***
Diacetone alcohol	***	***		*	Soda flakes	***	***	*	*
Dibutyl ether		*	***		Sodium bicarbonate	***	***	***	***
Dibutyl phtalate	**	*	***		Sodium bisulphite	***	***	***	***
Diehanolamine	***	***		***	Sodium carbonate	***	***	***	***
Diesel oils		*	***	*	Sodium chloride	***	***	***	***
Diluted sulphuric acid (battery)	***	***	***	***	Sodium chlorite	***	***	***	***
Diocetylphthalate	**	***	***		Sodium nitrate	***	***	***	***
Dyes (hair dyes)	***	***	***	***	Sodium phosphates	***	***	***	***
Ethyl acetate		*	*	*	Sodium sulphate	***	***	***	***
Ethyl alcohol (or ethanol)	***	***	***	**	Soybean oil		***	***	*
Ethylamine	*	*	***	*	Stannic chloride	*	***	***	***
Ethylaniline	*	***	***	*	Stearic acid	**	***	**	**
Ethylene dichloride			*		Styrene		*	*	*
Ethylene glycol	***	***	***	***	Sulphites, bisulphites, hyposulphites	***	***	***	***
Fertilisers	***	***	***	***	Sulphuric ether (pharmacy)	*	***	***	*
Fish and shellfish	*	***	***	*	Tartaric acid	***	***	***	***
Fixing agents	***	***	***	***	Tetrachloroethylene		*	**	
Fluorides	***	***	***	***	THF = tetrahydrofurane	**	*		
Formaldehyde)	***	***	***	***	Toluen	*	*	**	*
Fuel oil		*	***	*	Tributyl phosphate	*	***	**	*
Fuels		*	***	*	Trichlorethylene		*	*	
Furol (furfural or furaldehyde)	***	**			Tricresyl phosphate	***	**	***	**
Gas-oil		*	***	*	Trinitrobenzene		*	**	*
Gasoline		**	***	*	Trinitrotolul		*	**	*
Glycerin	***	***	***	***	Triphenyl phosphate	*	***	***	*
Glycerophthalic paint		*	***	*	Turbine oils		*	***	*
Glycols	***	***	***	***	Turnipseed oil		*	***	
Hair bleaching agents	***	***	***	***	Turpentine		*	***	*
Hair-curling products	***	***	***	***	Vinegar and condiments	***	***	***	**
Hexane		*	***	*	Washing powders	***	***	***	***
Household detergents	**	***	**	**	Water paint	***	***	***	***
Hydraulic fluids (esters)	***	***	***	*	Weed killers	***	***	***	***
Hydraulic oils (petrol)		*	***	*	Wood turpentine		*	***	*
Hydrobromic acid	***	*	*	*	Xylene		*	***	*
Hydrogen peroxide	*	***	***		Xylophene		*	***	*
					Zinc sulphate	***	***	***	***

\*\*\*: Very good    \*\*: Good    \*: Average    Not recommended

This table provides only general information. Be careful! Glove resistance is influenced by other factors such as temperature, chemical product concentration, thickness, immersion time, and others. For specific use conditions, we recommend testing the glove prior to use.



# BODY PROTECTION

## TECHNICAL INFORMATION

### ► INTERNATIONAL MAINTENANCE CODE FOR ARTICLES

TEXTILE	
	No treatment.
	Moderate treatment.
	Very light treatment.
WASHING	
	Maximum temperature 40°C. Normal mechanical treatment. Normal temperature rinsing. Normal spinning.
	Maximum temperature 40°C. Reduced mechanical treatment. Rinse at gradually decreasing temperature. Reduced spinning.
	Wash by hand. No machine washing. Maximum temperature 40°C. Treat with care.
	Do not wash. Treat with care when wet.
DRYING	
	Can be dried in rotating drum dryer. Normal program.
	Can be dried in rotating drum dryer. Moderate, low temperature program.
	Do not dry in rotating drum dryer.
CHLORINATION	
	Chlorination (chlorine bleach).
	Chlorination possible solely in cold, diluted solution.
	No chlorination.
IRONING	
	Iron at the maximum iron sole plate temperature of 200°C.
	Iron at the maximum iron sole plate temperature of 150°C.
	Iron at maximum iron sole plate temperature of 110°C. Steam treatment presents risks.
	Do not iron. Steam treatment is forbidden.
DRY-CLEANING	
	Dry cleaning. The circle stands for drycleaning for textile articles (Leather and fur articles are excluded). It contains information on the various dry cleaning treatments.
	Dry-cleaning prohibited.

### CHEMICAL PROTECTIVE CLOTHING



#### EN14126 PROTECTION PROTECTIVE CLOTHING AGAINST INFECTIVE AGENTS

This standard specifies the requirements and test methods concerning reusable protective clothing for limited use providing protection against infective agents. Associated with standards for protective clothing against chemical products, the letter B is added after the garment type. Examples : TYPE 6-B / TYPE 5-B / TYPE 4-B / TYPE 3-B



#### EN13034 TYPE 6 PROTECTIVE CLOTHING AGAINST LIQUID CHEMICALS

Requirements for chemical protection clothing offering limited performance against liquid chemical products (type 6 equipment), including clothing for partial body protection (type PB(6)).

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



#### EN13982-1 TYPE 5 PROTECTIVE CLOTHING FOR USE AGAINST SOLID PARTICLES

Performance requirements for protective clothing against chemical products offering full body protection against air-borne solid particulates (type 5 clothing).

This standard sets out the minimum requirements for chemical protection clothing resisting penetration of solid particulates suspended in air (type 5). This clothing offers full body protection, including the torso, arms and legs, such as one or two-piece coveralls, with or without hood or face-shield, with or without foot protection.



#### EN14605 TYPE 4 TYPE 3 PROTECTIVE CLOTHING AGAINST LIQUID CHEMICALS

Requirements for chemical protection clothing with liquid-tight (type 3) or spray-tight (type 4) connections, including items providing only partial body protection (types PB (3) and PB (4)).

This standard sets out the minimum requirements for the following types of limited use and re-useable chemical protective clothing :

- Clothing protecting the full body with **liquid-tight** connections between the various clothing parts (Type 3 : liquid-tight clothing).
- Clothing protecting the full body with **spray-tight** connections between the various clothing parts (Type 4 : spray-tight clothing).

Note : These standards were formerly entitled EN1512 (Type 4) and EN1511 (Type 3).





# BODY PROTECTION

## TECHNICAL INFORMATION

STANDARD	TYPE	CHEMICAL PROTECTION
EN13034	6	Against splashes.
EN13982-1	5	Against dust (asbestos).
EN14605	4	Against mists.
EN14605	3	Against sprays.

### EXAMPLES OF APPLICATIONS

Applications	Risks	Type of garment
Work Maintenance	Fouling	Category I / Non P.P.E.
Industrial cleaning	Exposure to hazardous chemical substances and particles	Type 6 Type 5
Asbestos abatement / removal (dust > 1 micron)	Contact with particles or fibres	Type 5
Agriculture and horticulture (Handling of herbicides / pesticides / fungicides / fertilizers...)	Contact with harmful elements	Type 4
Paint spraying (Solvents)	Contact with low-concentrate aerosols	Type 4
Paint spraying (Preparation / Mixing)	Contact with high concentrate aerosols	Type 3
Laboratories / Chemical Industries	Projection of chemical products	Type 3
Emergency / Rescue Personnel	Bacteriological contamination	Type 4 Type 3



TESTS									
General performance	Tests & Specific performance	Type of protective clothing							
		1a	1b	1c	2	3 <sup>a</sup>	4 <sup>a</sup>	5	6 <sup>a</sup>
Performance requirements for the whole garment	Internal pressure <b>EN464</b>	X	X	X	-	-	-	-	-
	Leak to interior	-	X <sup>b</sup>	X	X	-	-	-	-
	Penetration by a jet of liquid <b>EN463</b>	-	-	-	-	X	-	-	-
	Penetration by a spray <b>EN468</b>	-	-	-	-	X	X	-	-
	Against solid particles <b>EN ISO 13982-2</b>	-	-	-	-	-	-	X	-
Performance requirements for the constituent materials of the garment	Penetration by a spray <b>EN468 amended</b>	-	-	-	-	-	-	-	X
	Abrasion / Tearing / Perforation / Seams	X	X	X	X	X	X	X	X
	Resistance to tensile strength	X	X	X	X	X	X	-	X
	Resistance to flame	X	X	X	X	X	X	X	X
	Resistance to cracking by bending	X	X	X	X	X	X	X	-
	Resistance to cracking by bending at -30°C	X	X	X	X	X	X	-	-
	Resistance to permeation according to : <b>EN374-3</b> or <b>EN ISO 6529 ex EN369</b>	X	X	X	X	X	X	-	-
	Resistance to penetration by liquids <b>EN368</b>	-	-	-	-	-	-	-	X
	Impermeability to liquids (repulsion) <b>EN368</b>	-	-	-	-	-	-	-	X


a - When the protection equipment only protects certain parts of the body (torso, arms, legs), only the performance requirements for the constituent materials of the garment are required (type 6, 4 and 3).  
b - Applicable for suits whose respiratory mask is separate and removable.



# BODY PROTECTION

## TECHNICAL INFORMATION

### HEAT PROTECTIVE CLOTHING

<b>TASOUB</b>
<b>EN11611</b>

A1 Class 2

#### FOR USE IN WELDING AND ALLIED PROCESSES


##### Marking :

This standard sets out the performance requirements for protective clothing for use by operators in welding and allied processes with comparable risks.

This type of protective clothing is intended to protect the wearer against molten metal splash, short contact with flame and UV radiation.

It is intended to be worn at ambient temperature, continuously for up to 8 hours.


<b>CLASS 1</b>	Protection against low risks during welding techniques and situations producing fewer projections and low radiant heat.
<b>CLASS 2</b>	Protection against higher risks during welding techniques and situations producing more projections and a higher radiant heat.

<b>TONVE2</b>
<b>EN533</b>

3 / 50X75°C

#### PROTECTION AGAINST HEAT AND FLAME

##### Marking :

This standard sets out the performance requirements for limited flame spread materials and material assemblies used in protective clothing. Limited flame spread materials and material assemblies are used to make protective clothing in order to reduce the risks of flammability of the garment and the dangers it may cause. They are suitable for protection against accidental contact with small igniting flames, in conditions with no significant heat danger.

<b>MAICO</b>
<b>EN14116</b>

3 / 50I / 75

Indice : 1 / 2 or 3

Nb : Number of washes

TO : Service temperature

I : Industrial wash

MATERIALS	MATERIALS WHICH DO NOT SPREAD FLAME...
index 1	...but which may form a hole on contact with a flame.
index 2	...and do not form a hole on contact with a flame.
index 3	...and do not form a hole on contact with a flame. They also give only limited after-flame ( $\leq 2s$ )

<b>TONG2</b>
<b>EN531</b>

A B1 C1 X X

#### PROTECTION FOR WORKERS EXPOSED TO HEAT

##### Marking :

This standard applies to protective clothing used by industrial workers exposed to heat.

It sets out the performance requirements and test methods for materials used in protective clothing. Tested are :

TESTS	CODES	PERFORMANCES
Limited flame spread	A	A
Convective heat	B	B1 to B5
Radiant heat	C	C1 to C4
Molten aluminium splash	D	D1 to D3
Molten metal splash	E	E1 to E3

### TECHNICAL PROTECTIVE CLOTHING

#### EN340 GENERAL REQUIREMENTS

Reference standard, not for use alone, but only in association with another standard containing the protection performance requirements.

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



#### EN471 HIGH VISIBILITY CLOTHING

This standard specifies the requirements for protective clothing aiming to signal the presence of the wearer visually, so that he may be detected and seen in hazardous situations, in all conditions of daylight, and night under illumination of car headlights.

There are three classes of high-visibility clothing. Each class must have minimum surfaces of visible material constituting the garment ; the higher the class, the more visible the garment.

	CLASS 3	CLASS 2	CLASS 1
Background material (Fluorescent)	0,80 m <sup>2</sup>	0,50 m <sup>2</sup>	0,14 m <sup>2</sup>
Retroreflective material (Bands)	0,20 m <sup>2</sup>	0,13 m <sup>2</sup>	0,10 m <sup>2</sup>

**Background material :** Yellow, orange/red or red fluorescent material intended to be highly conspicuous.

**Retroreflective material :** Classified into 2 levels. The highest level of retroreflection gives the best contrast and visibility of high-visibility clothing seen in darkness, under headlamps.

##### Marking :

**X :** Class of high visibility surface (from 1 to 3).

**X :** Performance level of the retro-reflective material (1 to 2).

<b>STRADA</b>
<b>EN471</b>

3 / 2

#### EN1150 VISIBILITY CLOTHING FOR NON-PROFESSIONAL USE

This standard specifies the optical performance requirements for non-professional, high-visibility clothing, designed for adults and children. High-visibility clothing for non-professional use is used to visually signal the presence of the user, in day time, in all possible conditions of luminosity, and at night, in the light of vehicle head lamps or projectors, or in urban lighting.







# BODY PROTECTION

## TECHNICAL INFORMATION



### EN381 PROTECTION FOR USERS OF HAND-HELD CHAINSAWS

This standard specifies the requirements to be used to assess the resistance of protective clothing to cutting by hand-held chainsaws. It is divided into several parts :

**EN381-5** : specifies the requirements for leg protectors.

**EN381-7** : specifies the requirements for protective gloves.

**EN381-9** : specifies the requirements for protective gaiters.

**EN381-11** : specifies the requirements for upper body protectors.

The cut tests are conducted using 4 chain speeds :

16 m/s	<b>Class 0</b>
20 m/s	<b>Class 1</b>
24 m/s	<b>Class 2</b>
28 m/s	<b>Class 3</b>

The protective zone on leg protectors is coded using three letters A, B or C, corresponding to the coverage surface of the cut-proof material (Type A, Type B or Type C).

**Marking :**

EPICEA 2	MELEZE 2
<b>EN381-11</b>	<b>EN381-5</b>
Class 1	Type A - Class 1



### EN1149 ANTISTATIC CLOTHING

Antistatic protective clothing is designed to prevent the risk of sparks, strong, accidental electrical flashover, caused by the accumulation of electrical charge on the body. They are mainly used in explosive risk environments such as : chemical plants, refineries, weapons factories, mines. They are also widely used to protect materials sensitive to electrical discharge such as on electronics manufacturing or semi-conductor assembly sites. Finally, they are used in controlled-atmosphere sites such as automobile paint workshops, the aim being to prevent the emission of particles which may be deposited on bodywork paint. Antistatic properties may be obtained by treatment to limit the formation of electrostatic discharge, or by adding metal or carbon wires to facilitate their evacuation. The electrostatic properties of protective clothing are dealt with in a series of European standards :

• **EN1149-5 :**

Performance requirements of materials and design.

With a garment approved this standard, the material in electrostatic dissipation satisfies any requirements EN1149-1 and EN1149-3.

The garment permanently covers all non-compliant materials (other clothing worn and conductive parts) during normal use (including flexion and movement).



### EN1073-2 PROTECTIVE CLOTHING AGAINST RADIOACTIVE CONTAMINATION

This standard specifies the requirements and test methods for non ventilated protective clothing against radioactive contamination in the form of particles. Clothing of this type is designed only to protect the body, the arms and the legs of the wearer, but it may be used with accessories that protect other parts of the wearer's body (for example, boots, gloves, respiratory protective device - APR). The garments are classified according to their nominal protection factor (ratio between the concentration of test particles in the ambient atmosphere and the concentration of test particles inside the garment), determined in relation to the total inward leakage (ratio between the concentrations of test particles inside the garment and inside the test chamber). The classes are as follows :

CLASS	NOMINAL PROTECTION FACTOR
3	500
2	50
1	5

## FOUL WEATHER PROTECTIVE CLOTHING



### EN342 SUITS AND GARMENTS FOR PROTECTION AGAINST COLD

This standard specifies the requirements and performance test methods for protective clothing against cold **at temperatures lower than -5°C** (cold store / extreme cold workers).

There are two types of garment :

- **Garments** : covering part of the body, e.g. parka, jacket, coat.
- **Suits** : covering the whole body (trunk + legs), e.g. coveralls, parka & dungarees.



### EN14058 GARMENTS FOR PROTECTION AGAINST COOL ENVIRONMENTS

This standard specifies the requirements and performance test methods for protective garments (vests, jackets, coats, trousers) against cool environments.

These garments are for use in moderate low temperatures **(-5°C et plus)** to protect against local body cooling and are not only for outdoor use such as in the construction industry, but may also be used for indoor activities, such as in the food processing industry.

These garments are not always necessarily made of air impermeable or watertight materials. Therefore, in this European standard, these requirements are optional.



# BODY PROTECTION

## TECHNICAL INFORMATION



### EN343 PROTECTIVE CLOTHING AGAINST RAIN

This standard specifies the requirements and test methods applicable to the materials and seams of protective clothing against foul weather (for example precipitation in the form of rain or snow), fog and ground humidity.

TESTS				
	Code	EN343	EN342	EN14058
Class of thermal resistance (in m <sup>2</sup> .K/W)	R <sub>ct</sub>	-	-	X
Class of water vapour resistance (in m <sup>2</sup> .Pa/W)	R <sub>et</sub>	X	-	-
Class of air permeability (in mm/s)	AP	-	X	X (optional)
Resistance to water penetration (in Pa)	WP	X	X (optional)	X (optional)
Resultant effective thermal insulation (in m <sup>2</sup> .K/W) Measured on a moving manikin	I <sub>cler</sub>	-	X	X (optional)
Effective thermal insulation (in m <sup>2</sup> .K/W) Measured on a stationary manikin	I <sub>cle</sub>	-	X (optional)	X (optional)

#### THERMAL RESISTANCE (R<sub>ct</sub>) IN M<sup>2</sup>.K/W :

Measurement of the thermal insulation provided.

Divided into 3 classes (from 1 to 3) from the least insulating to the most insulating. The higher the value, the greater the thermal insulation.

#### WATER VAPOUR RESISTANCE (R<sub>et</sub>) IN (M<sup>2</sup>.PA)/W :

Measures the evaporative resistance, i.e. the product's obstacle to the passage of water vapour, or the barrier it offers to evaporation of transpiration on the surface of the skin. The higher a product's water vapour resistance, the greater this product's barrier to the passage of water vapour : A breathing product has a low water vapour resistance. Divided into 3 classes (from 1 to 3) from the least breathable to the most breathable.

#### AIR PERMEABILITY (AP) IN mm/s :

Determines the complex's permeability to air.

Divided into 3 classes (from 1 to 3) from the least airtight to the most airtight.

#### RESISTANCE TO WATER PENETRATION (WP) IN PASCAL :

Measurement of the outer material and seams' resistance to water penetration under a water pressure of (980+/-50) Pa/min. Divided into 2 levels (1 to 2) from the least impermeable to the most impermeable.

#### RESULTANT EFFECTIVE THERMAL INSULATION :

Measured on moving dummy (I<sub>cler</sub>) or on non moving dummy (I<sub>cle</sub>). The thermal insulation coefficient, expressed in m<sup>2</sup>.K/W, is used to determine the optimum usage temperature of the garment in relation to the individual's activity and his exposure time.

Thermal insulation is measured with undergarments of type :

**(B) for ensembles :** Undershirt with long sleeves, long underpants, socks, bootee + thermojacket, thermopants, knitted gloves, balaclava.

**(R) for garments :** Undershirt with long sleeves, long underpants, socks, bootees, jacket, trousers, shirt, knitted gloves, balaclava.

**(C) provided by the manufacturer.**

#### AMBIENT TEMPERATURE CONDITIONS FOR HEAT BALANCE FOR DIFFERENT LEVELS OF ACTIVITY AND EXPOSURE DURATIONS

Standard applicable	ACTIVITY						
	Insulation m <sup>2</sup> .K/W I <sub>cle</sub> I <sub>cler</sub>	Very light Stationary standing 75 W/m <sup>2</sup>		Wearer moving lightly 115 W/m <sup>2</sup>		Wearer moving medium 170 W/m <sup>2</sup>	
		8h	1h	8h	1h	8h	1h
EN14058	0,170	19°C	11°C	11°C	2°C	0°C	-9°C
EN14058	0,230	15°C	5°C	5°C	-5°C	-8°C	-19°C
EN342	0,310	11°C	-2°C	-1°C	-15°C	-19°C	-32°C
EN342	0,390	7°C	-10°C	-8°C	-25°C	-28°C	-45°C
EN342	0,470	3°C	-17°C	-15°C	-35°C	-38°C	-58°C
EN342	0,540	-3°C	-25°C	-22°C	-44°C	-49°C	-70°C
EN342	0,620	-7°C	-32°C	-29°C	-54°C	-60°C	-83°C

#### Marking :



#### EN14058

**X :** Class of heat resistance, R<sub>ct</sub>.

**X :** Class of air permeability, **AP** (Optional).

**X :** Class of resistance to water penetration **WP** (Optional).

**X :** I<sub>cler</sub> of the garment (Optional).

**X :** I<sub>cle</sub> of the garment (Optional).



#### EN342

**X (undergarment B/C/R) :**

I<sub>cle</sub> of the garment.

**X (undergarment B/C/R) :**

I<sub>cle</sub> of the garment (Optional).

**X :** Class of air permeability, **AP**.

**X :** Class of resistance to water penetration **WP** (Optional).



#### EN343

**X :** Resistance to water penetration, **WP**.

**X :** Water vapour resistance, R<sub>et</sub>.

DUNCAN	
	3
	3
	X
	0,271 (R)
	X

EN14058

HELSINKI	
	0,436 (B)
	X
	3
	X

EN342

EN400	
	3
	1

EN343







# FOOT PROTECTION

## TECHNICAL INFORMATION

### SAFETY SHOES-BOOTS

#### ► STANDARDS

##### • EN344-1 / EN ISO 20344

This standard defines the overall requirements and test methods for safety footwear, protective footwear, and occupational shoes. It may be used only in conjunction with standards EN345-1 / EN ISO 20345, EN346-1 / EN ISO 20346 and EN347-1 / EN ISO 20347, which specify the requirements for the shoes as a function of specific levels of risk involve.

##### • EN345-1 / EN ISO 20345

Specification for safety footwear for the workplace. In reference to standard EN344-1 / EN ISO 20344, this European standard defines the basic and the additional (optional) requirements for safety footwear for the workplace, marked "S".

The shoe was designed, and are equipped with safety toe caps designed to withstand a maximum impact of 200 joules and crushing up to 15 kN.

##### • EN346-1 / EN ISO 20346

Specification for protective footwear marked "P".

The shoe was designed, and are equipped with safety toe caps designed to withstand a maximum impact of 100 joules and crushing up to 10 kN.

##### • EN347-1 / EN ISO 20347

Specification for occupational shoes marked "O".

These shoes are different from safety/protective footwear in that they have no protective toe cap for impact and crushing.

### THE PARTS OF A SHOE



SIZE CORRESPONDANCE TABLE

France	35	36	37	38	39	40	41	42	43	44	45	46	47	48
UK	2	3	4	5	6	6 1/2	7	8	9	10	10 1/2	11	12	13
Cm	23.1	23.7	24.4	25.1	25.7	26.6	27.1	27.8	28.4	29.1	29.7	30.3	31.0	31.6



# FOOT PROTECTION TECHNICAL INFORMATION

• SB OR S1 TO S5 (SAFETY FOOTWEAR) • PB OR P1 TO P5 (PROTECTIVE FOOTWEAR) • O1 TO O5 (OCCUPATIONAL SHOES)

CLASS 1 or 2	EN345-1 / EN ISO 20345	EN346-1 / EN ISO 20346	EN347-1 / EN ISO 20347
ALL MATERIALS	SB : basic properties	PB : basic properties	
<b>CLASS 1</b> ALL MATERIALS EXCEPT FOR NATURAL OR SYNTHETIC	S1 : basic properties plus : - closed back - anti-static - energy absorbing heel	P1 : basic properties plus : - closed back - anti-static - energy absorbing heel	O1 : basic properties plus : - closed back - hydrocarbon-resistant sole - anti-static - energy absorbing heel
	S2 : the same as S1 plus : - water resistant upper leather	P2 : the same as P1 plus : - water resistant upper leather	O2 : the same as O1 plus : - water resistant upper leather
	S3 : the same as S2 plus : - penetration resistant midsole - cleated outsole	P3 : the same as P2 plus : - penetration resistant midsole - cleated outsole	O3 : the same as O2 plus : - penetration resistant midsole - cleated outsole
<b>CLASS 2</b> NATURAL AND SYNTHETIC POLYMERS	S4 : basic properties plus : - anti-static - energy absorbing heel	P4 : basic properties plus : - anti-static - energy absorbing heel	O4 : basic properties plus : - anti-static - energy absorbing heel
	S5 : the same as S4 plus : - penetration resistant midsole - cleated outsole	P5 : the same as P4 plus : - penetration resistant midsole - cleated outsole	O5 : the same as O4 plus : - penetration resistant midsole - cleated outsole

## SYMBOLS FOR INDIVIDUAL SPECIFICATIONS ARE DEFINED IN THE FOLLOWING TABLE

<b>Whole shoe</b>	Penetration resistant midsole	P
	<b>Electrical properties :</b>	
	Conductive shoe	C
	Antistatic shoe	A
	Antistatic shoe	I
	<b>Resistance to aggressive environments :</b>	
	Heat-insulated sole	HI
	Sole insulated against cold	CI
	Energy absorbing heel	E
	Water-resistant sole/upper juncture in leather shoes	WR
<b>Upper</b>	Metatarsal impact protection	M
<b>Outsole</b>	Water-resistant upper for leather shoes	WRU
	Cut-resistant upper	CR
<b>Outsole</b>	Contact-heat resistant outsole	HRO
	Oil-resistant outsole	FO

## RESISTANCE TO SLIPPING

Floor types	Symbols
Hard industrial floors, for indoor use (such as food industry tiled flooring).	SRA
Hard industrial type floors for indoor or outdoor uses (paint or resin type flooring in industry).	SRB
All types of hard floors for multiple uses indoors or outdoors.	SRC





# FALL PROTECTION

## TECHNICAL INFORMATION

### THE CORRECT SELECTION OF FALL ARREST PRODUCTS GIVES PERFECT SAFETY

Fall arrest equipment includes different products which have to be adapted for each risk to ensure the necessary protection. These products (full body harness, fall arrester on anchorage line, work positioning systems, energy absorbers, self-retractable fall arrester, accessories) are governed by the European standards on Personal Protective Equipment (PPE).

### PPE FOR FALLS FROM HEIGHT

#### ► THE DIRECTIVE

89/686 directive is intended for Personal Protective Equipment (PPE) manufacturers and determines conditions for market trade. It defines the essential requirements in terms of design, manufacture and test methods for PPE with which PPE must comply in order to ensure the safety of the users.

#### ► STANDARDIZATION

Its aim is to draw up test methods and product standards defining the technical specifications for products. The respect of these standards is evidence of conformity to Directive 89/686 and allows CE marking.

#### ► CATEGORIZATION

Taking into account the level of accident risk protection, the Directive defines categories of PPE and determines the manufacturer's obligations.

#### ► PPE OF 3<sup>RD</sup> CATEGORY

They are products with the highest level of accident risk protection. The category 3 includes mortal or accidents which can irreversibly harm the user's health.

#### ► CERTIFICATION PROCEDURE

Therefore, before putting any 3<sup>rd</sup> category PPE on the market, the manufacturer must contact a notified body in charge of checking PPE conformity with the relevant standard. The laboratory will issue an EC test certification to the manufacturer after the examination of a full technical report supplied by the manufacturer.

#### ► MANUFACTURED PRODUCTS' CONTROL

In order to ensure the homogeneity of its products manufacture, the manufacturer is submitted to an inspection procedure :

- Either the final product (11A process).
- Or the production process (11B process).

This inspection is carried out by an independent notified body.

### THE HARMONIZED EUROPEAN STANDARDS

All protective equipment against falls from a height are submit to European standards. You will find, below, a summed up presentation of every standard.

#### • EN353-2 : Mobile fall arrester on flexible anchorage line

Equipment consisting of a mobile fall arrester with self-locking, integral with its flexible anchorage line (rope, cable...). An energy reducer (absorber) can be built-in in the equipment. *Ex : For moving vertically or tilted surface with a large moving space.*

#### • EN354 : Lanyards

Connection elements or equipment component. A lanyard can be in rope made of synthetic fibres, in metallic rope, in strap or in chain. Maximum length : 2m. Caution : A lanyard without energy absorber must not be used as a fall arrest equipment. *Ex : Can be use only to avoid the fall risk access.*

#### • EN355 : Energy absorbers

Component of a fall arrest equipment, which guarantees the stop of a fall from a height in safety by reducing the impact of the shock. *Ex : For short and punctual moving. A double lanyard (Y) allows obstacles crossing in complete safety.*

#### • EN358 : Work positioning system

A work positioning system consists of components (work positioning belt and lanyard) linked to one another to form a complete equipment. *Ex : To hold you at the work station releasing your hands or to avoid you the access to delimited danger zone.*

#### • EN360 : Self-retractable fall

Fall arrester with self-locking device and a self-retractable system for the lanyard. An energy reducer (absorber) can be built-in in the equipment. *Ex : For moving vertically or tilted surface with a large moving space.*

#### • EN361 : Full body harness

Body securing device intended to stop falls. The full body harness can be made of straps, buckles and other elements ; set and adjusted in a right way on the body of an individual to secure him during a fall and afterwards.

#### • EN362 : Connector

Connection element or equipment component. A connector can be karabiner or a snap hook.

#### • EN795 : Anchorage devices

Element to which a personal protective equipment can be fastened.

### STANDARDS FOR ALL PRODUCTS

#### • EN363 : Fall arrest equipment

Set of personal protective equipment against falls from height, linked to one another and intended to stop a fall. A fall arrest equipment must contain at least a full body harness and a fall arrest equipment.

#### • EN364 : Test method

Describes the different test methods of the various PPE against falls from height, as well as the test equipment.

#### • EN365 : General requirements for the instructions for use and the marking

Description of the marking that must figure on the PPE against falls from height and of the information which must appear on the instructions for use.